UNIVERSITY OF CRAIOVA
FACULTY OF AGRICULTURE
SCIENCES ACADEMY-CRAIOVA BRANCH

SCIENTIFIC CONFERENCES WITH INTERNATIONAL PARTICIPACION

"DURABLE AGRICULTURE-AGRICULTURE OF FUTURE"

THE FOURTH EDITION

BOOK OF ABSTRACTS

CRAIOVA
ROMANIA

28TH – 29TH NOVEMBER 2008

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PROGRAMUL SIMPOZIONULUI

"AGRICULTURA DURABILĂ-AGRICULTURA VIITORULUI"

➢ VINERI, 28 NOIEMBRIE 2008

9^{00}-10^{00} Primirea şi înregistrarea participanților

10^{00}-10^{15} Deschiderea festivă - Aula "Alexandru Buia"

10^{15}-11^{15} Sesiune Plenară

> Prof. Univ. Dr. IVAN ILIEV, Universitatate Silvică Sofia, Bulgaria

Propagarea plantelor ornamentale

> Dr. CRISTIANA OPREA, Prof. Univ. Dr. STEFANO GREGO**

*** Istitutul de Cercetări Nucleare, Dubna Moscova, Federația Rusă**
**** Univeritate Tusccia, Viterbo, Italia**

Degradarea mediului ambiant şi Agricultura

> Prof. Univ. Dr. GHEORGHE MUSTAȚĂ , Universitatea "Alexandru loan Cuza" Iaşi

Biocenozele parazitoide şi semnificația lor în păstrarea echilibrului *natural*

11^{15}-11^{30} Pauză pentru cafea

11^{30}-13^{00} Prezentarea referatelor pe secțiuni

13^{00}-14^{30} Pauză pentru masă

14^{30}-16^{45} Prezentarea referatelor pe secțiuni

16^{45}-17^{00} Pauză pentru cafea

17^{00}-18^{30} Prezentarea posterelor

19^{30} Masă festivă în onoarea participanților la Casa Universitară

➢ SÂMBĂTĂ, 29 NOIEMBRIE 2008

9^{30}-11^{00} Prezentarea referatelor pe secțiuni

11^{00}-11^{15} Pauză pentru cafea

11^{15}-13^{30} Discuții asupra lucrărilor prezentate pe secțiuni, concluzii şi sugestii

13^{30} Închiderea lucrărilor simpozionului

CONFERENCE PROGRAMME " DURABLE AGRICULTURE – AGRICULTURE OF THE FUTURE"

➢ FRIDAY, 28 NOVEMBER 2008

9^{00}-10^{00} Reception and Registration of Participants

10^{00}-10^{15} Opening Ceremony - Magna Hall "Alexandru Buia"

10^{15}-11^{15} Plenary Session

> **Professor IVAN ILIEV, PhD., University of Foresty, Sofia, Bulgaria**

Propagation of Ornamental Plants

> **Senior Researcher CRISTIANA OPREA*, PhD.,**
Professor STEFANO GREGO, PhD.**

*** Joint Institute of Nuclear Research, Dubna Moscow, Russian Federation**
**** Univerity Tusccia, Viterbo, Italy**

Environmental degradation and Agriculture

> **Professor GH. MUSTAȚĂ, PhD., University "Alexandru Ioan Cuza" Iaşi**

Parasitoid biocoenoses and their significance into keeping of natural equilibrium

11^{15}-11^{30} Coffee break

11^{30}-13^{00} Working Groups Session

13^{00}-14^{30} Lunch

14^{30}-16^{45} Working Groups Session

16^{45}-17^{00} Cofee break

17^{00}-18^{30} Poster Session

19^{30} Gala Dinner University House

➢ SATURDAY, 29 NOVEMBER 2008

9^{30}-11^{00} Working Groups Session

11^{00}-11^{15} Cofee break

11^{15}-13^{30} Discussion on papers, Working Groups Session and Posters Session, conclusions, suggestions

13^{30} Closing Ceremony

SECȚIUNEA 1: TEHNOLOGII DE CULTURA PLANTELOR ŞI CREŞTEREA ANIMALELOR

Fitotehnie, Cultura pajiştilor şi a plantelor furajere, Legumicultură, Pomicultură, Viticultură şi Vinificație, Arhitectura peisajului şi amenajarea spațiilor verzi, Zootehnie

WORKING GROUP 1: PLANT CULTIVATION AND ANIMAL GROWING TECHNOLOGIES

Phytotechny, Grass and Fodder Plants Cultivation, Vegetable Cultivation, Fruit Tree Cultivation, Grape Vine Cultivation and Wine Technology, Urban Landscape Architecture and the Arrangement of the Green Urban Spaces, Animal Growing Technology

THE INFLUENCE OF SOME TECHNOLOGICAL FACTORS ON SEED QUANTITY IN PERENNIAL SEED FODDER GRASSES

ANA- MARIA BÂRZU
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ABSTRACT

Perennial grasses are wide spread in the permanent grasslands, the area occupied by these species is around 25% of the land. The pastureland biomass is a cheap fodder to obtain., but the pastures don' t have uniform production. This is why is important to have new and better and highly productive grass varieties. Researches on grass seed production are always needed for that matter.

The purpose of this experiment is to study the crop management measures used in grass seed production, in the moldavian sylvosteppe, such as: the influence of row distances, the grass species on seed yield, as well as the interaction between the two factors.

THE INFLUENCE OF THE SOIL, SOWING TIME AND SOWING THICKNESS UPON THE SUNFLOWER PRODUCTION FOR THE PEDO-CLIMATIC CONDITIONS OF ORADEA REGION

EVA BUCUREAN
University of Oradea, Enviroment Protectin Faculty, str. Gen. Magheru, nr. 26, Oradea e-mail: evabucurean08@yahoo.com

ABSTRACT

This work studied the influence of the soil, sowing time and thickness upon the sunflower production for the pedo - climatic conditions of Oradea region.

The great variety of sunflower hibrids and varieties cultivated demands the choosing and growing on a large scale the specific conditions on a certain geographical region.

Sunflower varieties and hybrids created in our country are characterized by a highly – productive potential, but for Oradea region there should be chosen and spread for growing only the ones which better suit the specific pedo – climatic conditions.

This thing has important final consequential effects upon this culture, the most favourable variety and hybrid decisively influencing the economical efficiency of the culture, alongside the other technological elements which should be applied at the most favourable parameters.

THE INFLUENCE OF THE CHEMICAL FERTILIZERS WITH NITROGEN, PHOSPHORUS AND POTASSIUM UPON THE PRODUCTION OF AUTUMN BARLEY

EVA BUCUREAN
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ABSTRACT

This work studied the influence of the chemical fertilizers with nitrogen, phosphorus and potassium upon the production of autumn barley between 2005 and 2007.

The experiment with chemical fertilizers studied the influence of the fertilizers applied both with variable doses of nitrogen and phosphorus and with potassium.

RESEARCH REGARDING THE KNOLEDGE OF THE GENETIC PATRIMONY CONCEPT IN POULTRY BREEDING

I. CHEREJI
University of Oradea, Enviroment Protectin Faculty, 28 Gen. Magheru Street, Oradea

ABSTRACT

Countries with advanced animal husbandry technologies have created genetic reserves in the form of gene banks, with the purpose of conserving all the species and breeds in these countries, as well as genetic scientific creations (varieties, lines) resulted from their own selection activity. Countries like England, Denmark and France occupy the primary positions in the hierarchy of countries with well maintained and diverse national gene banks, of which some are over 100 years old. As to the number of conserved species and breeds, France holds the top spot, FAO' s statistics showing that it has 100 breeds, varieties and lines of chicken, 9 breeds, varieties and lines of ducks, 12 breeds, varieties and lines of geese and 3 breeds of turkey.

ANALYSIS OF FOOD CONSUMPTION OF THE „LOHMANN BROWN" HEN HYBRID KEPT IN MODIFIED B.P. 3S

I. CHEREJI
University of Oradea, Enviroment Protectin Faculty, 26 Gen. Magheru Street, Oradea

ABSTRACT

As part of this experiment, there was studied the differences in the food consumption achieved by hens kept in modified B.P. 3S.

There were used 4 lots of hens kept in different area conditions.

In the end, the best results were obtained from the Lc control-lot (the hens were kept 4 in a classical cage, having 500 cm2/ hen).

THE USE OF SOME TYPES OF STRUCTURALLY MODIFIED WATERS AND OF THE ELECTROMAGNETICAL WAVES OVER THE GERMINATION OF SEEDS AND OF THE GROWTH OF CUCUMBER PLANTS (*CUCUMIS SATIVUS* .L)

PELAGHIA CHILOM, DANIELA CONSTANTIN
University of Craiova, Faculty of Horticulture, 13 A.I. Cuza street, Craiova

ABSTRACT

The processes of the germination of seeds and of the growth of plants have increased as a consequence of the use of structurally modified waters and of the electromagnetical waves over the cucumber seeds. The best values have been registered not only in the case of the mixtures of light water and electromagnetical waves, realising germination increases of up to 17,6% but also in the case of D2O -144ppm structurally modified water with 15,8% germination increase and 275% increase of the accumulation of vegetative mass.

PRELIMINARY EXPERIMENTAL RESULTS CONCERNING THE IMPROVEMENT OF PERMANENT HILL LAWNS BY USING ORGANIC FERTILIZERS

M. CIOBOATĂ
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ABSTRACT

The advanced study of the degradation of the permanent lawns in our country entails the achievement of a set of measures by which one can accomplish the improvement of their pastoral value. Thus, this paper describes one of these measures of improvement and namely organic fertilization, by the use of various doses of manure on a permanent lawn of Agrostis capillaries in Oltenia hillside.

CAPACITY REPRODUCTIVE HOLSTEIN COWS OF ITS KIND - IMPORTED FIESLAND, DEPENDINGON THE COUNTRY OF ORIGIN

M. COLĂ, FLORICA COLĂ, C. GĂVAN
University of Craiova, Faculty of Agriculture, 19 Libertății Street, 200583, Craiova

ABSTRACT

In general, signs of breeding were placed at all 3 types of frieze in the usual, with somefluctuations, which may be regarded as favorable, taking into account the production of high breed frieze. Use efficiency in breeding cows ranged from 91.49% to the Canadian guy at100.64% Polish. Index of the highest fertility of recorded in the biological material. Polish,while the highest average number of sowing for a **prolific montă occurred at Canadian animals.The differences were** recorded between all the 3 batches in about average interval between calving and type between Canadian and the other two types in respect of the other two indices and F%, E%. By an analysis of the value of these indices on the two generations within each type of dairy cows come off that, in addition to the Canadian type, the generation born in our country indices were more favorable than breeding generations of import.

EFFECT ON VITAMIN A BREEDING PIG

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ABSTRACT

Analyzing the notes that are registered after the first 3 months of the experimental scheme, started to differentiate between groups. These differences are increasing along the way, becoming significant dose from 4000 up to 6,000 IU vitamin A from 1 kg combined fodder. The number of piglets viable obtained in each batch shows a gradual increase in small doses to the largest.

The total number of piglets born was from the outset that group recorded lower values, heads 5.88, compared to 8,38-10,13 ends at the experimental plots.

THE INFLUENCE OF THE CLIMATIC CONDITIONS ON THE COMPARATIVE CROP OF SUNFLOWER GENOME AT ARDS SIMNIC

***EMILIA CONSTANTINESCU, *DORINA BONEA, **VIORICA URECHEAN, * L.OLARU**
***University of Craiova, Faculty of Agriculture, 19 Libertății Street, 200583,**
****SCDA Şimnic**

ABSTRACT

With the choosing of a new hybrid, beside the yielding capacity, we have to pay attention to infield conditions and the yield quality. A valuable hybrid is that which adapts better year by year to the climatic conditions even though they are dry. A good yield can be achieved only by using good quality seeds: purity, capacity and emerging energy, calibration and health status and these conditions were accomplished by the AGRICOVER and KWS companies.

ALFALFA NEW VARIETIES WITH HIGH NUTRITION FEED VALUE, CREATED AT INCDA FUNDULEA

E. CONSTANTINESCU, C. ROSCULETE, E. PETRESCU
S.C.D.A. Caracal

ABSTRACT

For an effective economic zootechnics is necessary to ensure feed in sufficient quantity, high quality and at a low cost price. Alfalfa is a crop that provides great yield of feed and very good quality.

Quality feed involves increasing the proportion of plant leaves in the vegetable mass, short interknots.These objectives shall be responsible to a great variety COSMIN, homologated in 2004 and F lines 1206-00 and F 1208-00, introduced in testing in 2002.

During testing (2002-2004) they were noticed by the average output of 18 tons / ha dry matter, under a intensive technology. Alfalfa yields, obtained by applying intensive technology were higher by 40-60% compared with traditional technology.

RESEARCHES CONCERNING RED CLOVER (TRIFOLIUM PRATENSE) TECHNOLOGY, CULTIVATED IN THE HILL AREA OF OLTENIA

A. CROITORU, M. MILUȚ
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ABSTRACT

For the research of red clover (Trifolium pretense) technology in the hill area of Oltenia, on the Experimental Centre for Pastures Crop Preajba – Gorj, was located in 2005 year an experience with two factors: amendments and manures.

Was observed that amendments effect on productions is insignificant, being recorded even smaller productions towards variants were not applied amendments.

Red clover was registered good results in case of manure application.

INVESTIGATORY RESULTS CONCERNING THE AZOTE, PHOSPHORUS AND POTASSIUM FERTILIZATION TO CULTIVATED PEANUTS ON THE PSAMOSOILS FROM SOUTH OF OLTENIA

MILICA DIMA
C.C.D.C.P.N. Dăbuleni

ABSTRACT

The researches made to CCDCPN Dabuleni in the period 2001-2003, on psamosoil with reduced fertility, deafly aprovozionat in middling azote supplied in phosphorus and contained reduced of potassium, emphasized the of a importance well-balanced fertilizations with azote, phosphorus and potassium to the kind of peanuts Dabuleni.

The optimum economic doses of manures whereat are can achieved most good results is placed to the level of 67 kg N/ha 63, 37 kg P2O5/ha and 54, 63 kg K2O/ha.

THE MORPHOLOGICAL' S CHANGES DETERMINATED BY ECOLOGICAL FOLIAR FERTILISERS ACROSS THE CUCUMBER CROP IN TO GREENHOUSES

MARIA DINU, P.SĂVESCU, PELAGHIA CHILOM
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ABSTRACT

The Cucumis sativus specie is registered like as the better valuable crop in to protected areas. For the second cycle crop, the cornichon crop were used four lots of ecological foliar fertilizers which were applied during the growing time, after the preparation of soil and after organic fertilizer task, along the plant rows with Orgevita fertilizer (a fertilizer from the bird excrements).

For the all variants which were treated with foliar fertilizers were registered the high values than the witness, the best variant was the variant with Bionat and Raykat. The used hybrid in to crop stage was Capricorn.

THE BIOCHEMICAL AND YIELD STUDIES AT ANY YELLOW MELON CULTIVARS WHICH ARE OBTAINED IN TO UNHEATED GREENHOUSES

MARIA DINU, P.SĂVESCU, I.PINTILIE
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ABSTRACT

The yellow melon are the most appreciated specie for nutritive value, bigger than cucumber (the second specie after tomatoes, in to greenhouses crops) and for divert of vegetable species

sorts which can be consumed during out of the season. Their behavior in to green houses crop are very good.

This work paper is a study on the fourteen yellow melon types, the main study direction was the fruit quality and the obtained yield on the surface unit.

The best results were registered at seven type which probed a Soluble Dry Substance percent, the skin/calf report was bigger than witness and the 1000g fruit weight (the consumer requests) and another higher qualities than Galia witness, appreciate for the consumer diet.

THE INFLUENCE OF THE EPOCH OF HARVEST ABOUT THE YIELD AND BIOMASS QUALITY TO THE SWEET SORGHUM CULTIVATED ON THE SABULOUS SOILS FROM THE OLTENIA SOUTH

I. DRAGHICI
C.C.D.C.P.N. Dăbuleni

ABSTRACT

The researches result effected to CCDCPN Dabuleni, in irrigation conditions, looking yield and the biomass quality obtained to the sweet sorghum in ecopedological conditions specify the sabulous soils depending on the age of harvest emphasized the fact as the the sabulous soils offer eighth conditions of procurance of erect yield of biomass of high-quality(30-55, 1 to/ha to the scythe I, 28, 9-47, 2 to/ha to sew II and an aggregate output of 58, 9-102, 3 t/ ha). In according as the epoch of harvest, the sugars content in haulms of the in oscillated between 11, 2-17, 6% to the scythe I and 10, 8-16, 8% to sew II. Substance dried he accumulated on promotion overrange in vegetation be contained between 13, 5-47, 2%. One the evolution registered and in the case S. E..N. , values were contained between 54, 68-62, 14%.

EFFECTS OF SUBACUTE RUMINAL ACIDOSIS ON FREE CHOICE INTEKE OF SODIUM BICARBONATE IN LACTING DAIRY COWS

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[**]**S.C.D.A. Şiminic**

ABSTRACT

The objective of the present study was to determin the effect of subacute ruminal acidosis (SARA) on the free choice intake of sodium bicarbonate (SB), in dairy cows.

The SARA was induced in four rumen fistulated primiparous Holstein cows in a switchover experiment with for 1 week periods, by repalcing 25 % of the ad libitum intake of total mixed ration (TMR) with 50 % ground wheat and 50 % ground borley and restricting access to TMR from 8:00 to 18:30 hour. During each period SARA was induced in two cows and other two cows received a TMR ad libitum intake *control(. Each subsequent week treatments were switched . SB was provided for ad libitum consumption for each cow in 10 /L sucket. Induction of SARA reduced the average dailz rumen pH from 6,10 to 5,86 and increases the average duration of rumen pH below 5,6 from 130 minutes /daz to 395 minutes/daz. Average intake of SB was 30 g/daz during SARA and 34 g/daz during control. SB intake differend betwean cows. This low SB intakes not have substantiallz affected rumen pH. These data indicate that cows did not select SB to attennuate SARA.

GRAVITY SEPARATION OF FAT CONTENT OF ROW BOVINE MILK

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ABSTRACT

The objective of the present study was to determin the effects of time and temperature on changes of fat content in milk productions during gravity separation. Fresh row bovine milk was gravity separated at 4^0C. After 0, 12, 24 and 48 h seven fractions, from bottom fraction (F 1) to top fraction (F 7) were drained from a separation column. After 48 h at 4^0C, fat content of F 1 decreased from 3,75 % (time 0 of separation) to 0,20 %. The fat content of F 7 reached 26,25 % after 48 h at 4^0C. Gravity separation may have unique applications in the diry industry today. Its simplicity makes it an effective procedure for small scale diry product manufacturers to produce milk with a range of fat contents without using a centrifugal cream separator.

RESEARCHES CONCERNING THE ELABORATION OF A TECHNOLOGY WITH LOW POLLUTION DEGREE TO CONTROL THE PATHOGEN AGENTS AND PESTS AT THE FIELD CUCUMBERS CULTURE

***I. GEAMĂN, **GH. MARINESCU, ***A. ALEXANDRI, *MINODORA TUDOSE, *FULVIA FLORICA VLAD, *C. GUTUE, **DOINA VĂRGĂLUI, **V. MIRON, *EMILIA VASILE, *IONELA DOBRIN, * VASILICA LUCHIAN**
*University of Agronomic Sciences and Veterinary Medicine Bucharest, Romania
**I.C.D.P.L.F. Vidra
*** Alcedo SRL Bucuresti

ABSTRACT

In this study it is showed that the decrease of the field surfaces (land or successive cultivation) at this species has as main cause the aggressiveness of the characteristic pests. Their intensity has been " explosive" , high values being recorded during summer, high above the damage threshold, with obvious effects over the cucumber production.

The low degree pollution technology for this species concerns the following technological flow: choosing a cucumber species with tolerance to the pests characteristic for this culture; the cucumber species Mondial shows tolerance to the Pseudoperonospora cubensis fungus that causes mildew (blight) and to the bacteria Pseudomonas syringae pv. lachrymans that causes angular spots on the leaves; prevention and control of the pathogen agents and pests through foliar treatments with pesticides (fungicides, insecticides and miticides), approved by the European Union, " friendly" for the plants and with low risk for the environment, user and consumer; ensuring production increases through root fertilization with biostimulation, mostly vegetable, applied at intervals of 7-10 days. By applying this low degree pollution technology a production of 5,350 kg/mp was obtained at the Mondial species.

THE INFLUENCE OF FERTILIZATION AND CROP ROTATION UPON RYE YIELD ON PSAMOSOILS

GHEORGHE D., RĂȚOI I., TOMA V., ŞTEFAN M., MATEI GH., BONEA DORINA

ABSTRACT

In the paper work, we show the results obtained at the Research-Development Center for Plant Crops on Sands in Dabuleni, Dolj district, regarding the influence of fertilization and crop rotation upon rye yield.The study was made in long-term experiments performed on rye, on

psamosoils, in conditions of irrigation. The psamosoils being characterized by the low natural fertility (humus content of 0.51%). The bigest yields of rye were obtained in 3 years crop rotation, rye after pea and cowpea. The chemical fertilizers with nitrogen are too good emphasized in crop rotations, when achive an economy of 80 kg N/ha, and utilization of big doses of fertilizers with nitrogen do not substitute the negative effect of monoculture or crop rotation of 2 years.

STUDY CONCERNING THE BEHAVIOR DURING SUMMER OF SOME TURF MIXTURESIN THE CONDITION OF WESTERN ROMANIA

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ABSTRACT

In this paper we have studied the behaviour of some turf mixtures during summer. The vegetal carpet's ability to remain " green" is very appreciated under the influence of the high temperatures and lack of water. Because the use of turf mixtures is so divers, the species of grasses are evaluated from the point of view of some features common to all the turf species and make proof of the utilisation value to which is more suitable.

THE CONSTRUCTION OF PLS-LEVERAGE MODEL FOR DETERMINATION OF TOTAL CRUDE PROTEIN CONTENT IN FORAGES FROM A PERMANENT PASTURE (GRĂDINARI; CARAS-SEVERIN) USING NIR SPECTROSCOPY

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ABSTRACT

This scientifically paper presents our researches regarding the determination of total crude protein content (%) of forages, harvested in March 31st from a permanent pasture from Gradinari (Caras Severin), using NIR Spectroscopy. The permanent pasture was organized in ten trials with different doses of organic and mineral fertilizations, and five replicates for each trial. For total crude protein content (%) determination by NIRS Method was created a mathematical model with the values obtained using Kjeldahl method and those for reflectance from NIR spectra (800-2500nm). To realize the statistical interpretation of obtained results was used PLS-Laverage regression model from UNSCRAMBLE software. The regression coefficient R^2 for PLS-Laverage Model was equal with 0.988726 and the values for deviation in the range 0,620 - 0,696 %. That means NIR spectra, processed with adequately software, can be utilized for quickly prediction of the total crude protein content of forages samples from permanent pasture.

THE INFLUENCE OF NPK AND SHEEP MANURE FERTILIZATION ON THE TOTAL CRUDE PROTEIN CONTENT IN FORAGES HARVESTED AT THE BEGINNING OF SPRING (2008) FROM A PERMANENT PASTURE (GRĂDINARI; CARAS-SEVERIN)

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ABSTRACT

In this scientifically paper we present our researches regarding the influence of NPK and sheep manure fertilization on the total crude protein content (%) of forages, harvested in March 31st from a permanent pasture from Gradinari (Caras Severin). The permanent pasture was organized in ten experimental variants with different doses of NPK and sheep manure fertilization, and five repetitions for each variant. The total crude protein content (%) for forages was determinated by Kjeldahl method. To realize the statistical interpretation of obtained results was used Statistica 6 software.

The correlation coefficient between the total nitrogen content from the soil and total crude protein content of forages is positive and equal with 0.62. The correlation coefficients between total crude protein content of forages and mobile phosphorus and potassium from soil are also positive and equal with 0.63, respectively 0.42. The correlation between total crude protein content of forages and sheep manure fertilization is positive and has a coefficient equal with 0.52.

THE INFLUENCE OF THE MINERAL FERTILIZATION ON DIFFERENT DOSES UPON YIELD AT GRAPES VARIETIES: PINOT NOIR, RIESLING ITALIAN AND FETESCA NEAGRA IN RECAS VITICULTURAL CENTER CONDITIONS

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ABSTRACT

This paper research the foliar and the mineral fertilization influence upon grapes production at the studied grapes variety. The research is beginning in the years 2006 and 2007 under the vines of holding 2 SC Cramel**e Recas S.A. Recaş concerning varieties: Feteasc Neagra, Riesling** Italian and Pinot Noir. Among the species studied, Feteasca Neagra is grafted on rootstock Berlandieri x Riparia SO4-4, and Italian Riesling and Pinot Noir are the other rootstock Berlandieri x Riparia Kober 5 BB. Distances are planting rows between 2 m and 1.2 m at a time, resulting in a number of logs 4166 /ha.

Experience plots are:V1- foliar; V_2-$N_{100}P_0K_0$;V_3 -$N_{100}P_{100}K_0$;V_4-$N_{100}P_{100}K_{100}$;V_5 -$N_0P_{100}K_{100}$

These are arranged after random blocs method. Each plot has 30 vines in three repetitions.

Vines fertilization problem was frequently studied by the researchers, because this fertilization is an important link technology with crucial role upon production. Fertilization technology represents a measure of the almost importance for obtaining large productions of grapes. Fertilization has the role to give back to the soil nutrients which the vines export year by year through grapes production and to improve the general state of fertility of the soil. Fertilization particularities are based on: plant physiology peculiarities of the roots system, variety, and age of plantation, soil conditions, climatic conditions and culture technologies. Production per hectare in both experimental years, on the studied species, outruns the witness, excepting the plot fertilized only with phosphorus and potassium, version 5, which is lower than the witness. The higher production was obtained from fertilized plot with all three nutrients: nitrogen,

phosphorus and potassium, and the unilateral application of nitrogen have resulted in getting a lower production in comparison with the witness.

RESEARCH REGARDING THE NUTRITION OF SHEEP DEPENDING ON AGE AND PRODUCTION IN THE NORTH-WEST OF ROMANIA

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ABSTRACT

The largest part of pastures is used in a free-grazing system. This grazing system is proven not to be competitive on a series of reasons: no maintenance work can be applied because animals are on the fields most of the time; the selective consumption of plants (the animals choose young plants, with high nutritional values and avoid the ones in an advanced state of vegetation, which have lower nutritional value) leads to the disappearance of valuable species and the proliferation of the less valuable ones, which, as they are not consumed, they reach maturity and produce seeds; formation of holes and anthills etc.

ASPECTS REGARDING THE PHYSICOCHEMICAL AND MICROBIOLOGICAL CHARACTERISTICS OF SHEEP' S MILK COTTAGECHEESE

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ABSTRACT

The conducted study surveyed the manner in which certain hygiene regulations were complied with, starting with the collection of the milk and ending with its delivery to consumption. All the samples collected from cheese dairies, public markets and family farmers contain Coliform bacteria, thus being polluted with bacteria of enteric origin. But it is important to point out that 35% of the ripened cottage cheese samples and 32.5% of fresh cottage cheese samples contained over 10 Coliform bacteria per gram, thus not complying with the provisions of the O.M.S. no. 975/1998. This fact indicates serious deficiencies regarding the hygiene of the milking process and of the technological flux. It is worth mentioning that a high number of enteric bacteria induce unwanted changes in the processes of producing, maturing and preserving various types of dairy products.

Identification of E. coli. With the help of specific tests, E. coli was identified in too high a number of samples: 24.16% in matured cottage cheese and 26.66% in the fresh kind. Soiling of the milk used as raw material with animal feces is certain and this fact is hard to overcome, considering the poor conditions of hygiene in which the manual milking of the sheep is performed in Romanian farms. The incidence of samples containing over 10 coagulase-positive Staphylococci per one gram of product is of 11.66% in the mature cottage cheese and 15% in the fresh kind.

Salmonella was not discovered in any of the analyzed samples.

Regarding the presence of yeasts and molds in the samples of analyzed dairy products as stipulated in O.M.S. nr. 975/1998, per 1g of product, the dispositions are exceeded in 21.66% of the mature cheese samples and in 25.83% of the fresh cheese ones. The main causes of this situation are the poor work and hygiene conditions, which are reflected in the dairy products and in their quality.

RESEARCHES CONCERNING THE ELABORATION OF A TECHNOLOGY WITH LOW POLLUTION DEGREE TO CONTROL THE PATHOGEN AGENTS, PESTS AND WEEDS AT THE FIELD TOMATOES CULTURE

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ABSTRACT

In this study are presented the results of the researches regarding the low degree pollution technology for controlling the pathogen agents, pests and weeds at the autumn field tomatoes culture.

By applying the low degree pollution technology, the technological flow was followed with: the optional possibility of using herbicides on the location as follows: 3-4 days before planting the tomato seedling in the field, with Dual 960 Gold and in the middle of the vegetation period, depending of the presence/absence of the weeds in the culture, with Fusilade forte; pests prevention and control through foliar treatments with pesticides (fungicides, insecticides and miticides), " friendly" for the tomato plants and with low risk for the user and consumer; applying root fertilization with biostimulation in most of the vegetable cases. A production of 7,450-7,900 kg/mp was obtained.

RESEARCHES CONCERNING THE ELABORATION OF A TECHNOLOGY WITH LOW POLLUTION DEGREE TO CONTROL THE PATHOGEN AGENTS, PESTS AND WEEDS AT THE GARDEN BEANS CULTURE

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ABSTRACT

In this study are presented the results of the researches concerning the low degree pollution technology for the garden beans, referring to the following technological flow: choosing a beans species with tolerance to the characteristic pests; the beans species with yellow pod Sonests has this quality; the optional possibility of using herbicides on the location that will be planted with this vegetable species as follows: preemergent with Dual 960 Gold and postemergent with Fusilade forte; prevention and control of the pathogen agents and pests using foliar treatments with pesticides (fungicides, insecticides and miticides), " friendly" for the plants and with low risk for the environment, user and consumer; ensuring production increases through root fertilization with biostimulation, mostly vegetable, applied at intervals of 7-10 days. By applying this low degree pollution technology a beans production of 2,880-2,950 kg/mp was obtained.

THE DROUGHTS OF OLTENIA AND THEIR EFFECTS

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ABSTRACT

In this paper we analysed the droughts that affected Oltenia after 1987. The frequency and intensity of this phenomena increased proportionally with the intensification of the climatic risk phenomena asociated with the global warming of the atmosphere. In matters of frequency and intensity, the droughts and the early heat waves in the warm season determined a fast-growning aridity especially in the South of Oltenia. These have drastically reduced the agricultural productions playing an essential role in the raising prices of food and daily use products; this raise is strongly related to the climatic risk phenomena. This paper highlights important aspects of tohese phenomena in Oltenia, and we extended our analysis to the droughts of the cold season. The analysis is based on the processing of long data series from meteorological and pluviometric stations in Oltenia and has a crucial importance for the regional climatic evolutions, being of great use to climatologists, meteorologist, agronomists students, those who try to achieve a master or doctor degree and also to those interested in the evolution of the climatic phenomena in Oltenia.

RESEARCH REGARDING THE INFLUENCE OF MINERAL FERTILIZATION TO THE YIELD ON SOYBEAN CULTIVATED IN THE PEDOCLIMATICAL CONDITIONS FROM SCDA CARACAL

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ABSTRACT

In this paper we present results regarding the influence of the applied mineral fertilization at the soybean crop made in the pedological and climatically conditions from SCDA Caracal. The soybean crop realized on the chernozem from the Caracal plain registered a favorable reaction to the applied macro elements, especially to the nitrogen and phosphorus levels and goes to the obtaining of good seed yields, but with big differences between the two experimented years due the rain fall regime on the vegetation period. In average on the experimented years the obtained yields varied between 11.71 q/ha on the unfertilized variant and 20.43 q/ha at the variant with nitrogen and phosphorus of 120 kg/ha active substances.

From the yields quality point of view we can say that the application of the mineral fertilization conduct to significant increase of the protein and nitrogen levels into the soybean seeds, the macro elements having different influence to the seed content. Very significant increases of the protein level were observed at the variants with high level of nitrogen on the backgrounds of phosphorus with a value of 38.31% protein at the P_{40} variant.

THE INFLUENCE OF THE CROP ROTATION AND LONG TERM FERTILIZATION AT SCDA SIMNIC CRAIOVA TO THE SOIL' S NATURAL FERTILITY

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ABSTRACT

In this paper we present results regarding the study of the influence of the applied mineral and organic fertilization and of the crop rotation at the most cultivated species cultivated in long

term experiences from the Agricultural Research Station from Simnic Craiova. Under the influence of the fertilization and the crop rotation at the soil level from SCDA Simnic Craiova were registered increases of the soil breath generate by the soil' s micro flora activity, with high rate on the organic fertilization at variants in the rotation of 4 years where the wheat follows the sun flower and corn crops.

They are also found increases in pH from 5.7 to 6.1 or 6.3 depending on the version of fertilization. Total nitrogen content recorded increases in mineral fertilization - the variants with $N_{100}P_{60}$, and natural fertility of the soil increased as a result of increasing amounts of content for mobile phosphorus from the soil and potassium content of variants of fertilization with $N_{100}P_{60}$,and 20 t of manure the rotations tested.

THE VARIATION OF AMPELOMETRIC CHARACTERS AT THE HAIDUC AND PANDUR CULTIVARS

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ABSTRACT

Ampelometric leaf descriptors can play an important role for grapevine distinction.

In order to determine the phenotipical variation at the Haiduc and Pandur cultivars, that were cultivated on the sandy soils at S.D.E. Tamburesti (University of Craiova), there have been carried out a series of ampelometric observations and determinations.

There were determined 18 ampelometric descriptors, and codification of the values that were obtained as they follow: length of vein N1; length of vein N2; length of vein N3; length of vein N4; length petiole sinus to upper lateral leaf sinus; length petiole sinus to lower lateral leaf sinus; angle between N1 and N2; angle between N2 and N3; angle between N3 and N4; angle between N3 and the tangent between petiole point; length of vein N5; length of tooth N2; width of tooth N2; length of tooth N4; width of tooth N4; number of teeth between the tooth tip of N 2 and the tooth tip of the first secondary vein of N2 including the limits; length between the tooth tip of N2 and the tooth tip of the first secondary vein of N2; opening/overlapping of petiole sinus.

THE EFFECT OF ACIDIFYING FEED OR DRINKING WATER ON THE DIGESTIVE MICROFLORA AND ON THE BIOPRODUCTIVE PERFORMANCES OF BROILER CHICKENS

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ABSTRACT

During our research, we surveyed the effect of the differential administration of the acidifier, respectively in the fodder or in the drinking water, on broiler chickens, on the pH and digestive microflora, as well as on the bioproductive performances (weight gain, feed consumption and degree of capitalization, slaughter indices and carcass quality)

Acidifying the feed or drinking water using organic acids (Biotronic - 1‰in feed and respectively 2‰in water) of broiler chickens has determined the increase of the average daily weight gain (5.2-7.7%), an improvement in the degree of feed capitalization (2.8-7.2%) and the reduction of the necessary costs for feed per kg of weight gain (2.8-3.9%) . The acidifier' s positive effects were more obvious in the first stage of development (0-14 days), when the differences compared to the reference lot were more significant.

Using organic acids in the feed of broiler chickens (provided whether in water or feed) leads to the reduction of the digestive pH, especially in the first sectors (proventriculus, crop and small intestine), where, in fact, most of the processes regarding digestion and absorption take place.

Regarding the quantitative-topographic distribution of the digestive microflora under the influence of organic acids, it was observed that, except for the anaerobic bacteria and fungi, which

are not numerically affected by the organic acid, the other microbial species showed, in general, a numerical modification compared to the reference lot, hence the rapport of dominance between lactobacilli and coliforms was modified in favor of lactobacilli. The new balance established between coliforms and lactobacilli became an advantageous one for the chickens, on one hand contributing to the improvement of weight gain and degree of feed capitalization.

Introducing acidifier in the structure of the feed ensures bioproductive and economical performances, as well as better digestive conditions (pH, microflora) than in the case of administering the acidifier in the drinking water.

RESEARCH CONCERNING THE BIOEFFICIENCY OF USING ORGANIC ACIDS IN PIGLETS' FEEDING

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ABSTRACT

This study is meant to emphasize some improvement possibilities of the production performances of the weaned piglings, by the use of prebiotics ou the basis of organic acids (Acid Lac Dry®) as au alternative to using forage antibiotics (Salocin-120) or by associating the two forage additives in the piglings feeding. Salocin-120 is a forage antibiotic accepted by the EU in order to be used in the piglings and pigs feeding, Acid Lac Dry® being a mixture of acids obtained by natural fermentation (lactic acid, fumaric acid, propionic acid, formic acid and citric acid).

Four lots of 50 days old weaned piglings have been formed, each lot having 8 head of cattle (4 young boars + young sows). In order toobtain the biological material 8 sows and seminal material taken from 2 boars have been used, to that each sow had a pigling in each lot whreas 2 piglings in each lot were stepbrothers ofter father.

The first lot was fed with blended forage suitable for the age category in the sense of structure and nutritive value; for the second lot, Salocin-120 antibiotic (0,05%) was added to the essential ratio; for the third lot, Acid Lac Dry® (0,50%) prebiotic was added to the essential ratio and for the fourth lot, the antibiotic tagether with the prebiotic werw added to the assential ratio. The presence of forage additives tested in the weaned piglings food didut modify the food consumption, but it determined improvement weight gain with 11,4% ($p<0,01$), in case of association between the antibiotic and the prebiotic (lot 4); with 9,16% ($p<0,01$) in case of food addition with antibiotics (lot 2); and with 7,61% ($p<0,05$) in case of food addition with organic acids (lot 3). An improvement of the food valorization bas been noticed, too; blended forage consumption for 1 kilo being bualler than lot 1, with 9,93% at the piglets in lot 4 (antibiotics + organics acid); with 7,72% at the piglets in lot 2 (antibiotics) and with 6,25% at those in lot 3 (organics acid).

Positive effects have been wore obvious after the first 30 days after weaning, when the endogenous production of hydrochloric acid is little, and the digestive pH is higher than the ole that is the best for an adequate digestion and for the aduevement of a digestive microbism convenient for the piglets.

THE MANAGEMENT OF THE CEREALS AND TECHNICAL CROPS MECHANIZATION

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ABSTRACT

Romanian agriculture has to be transform into a modern economic domain following the trends that are currently manifesting within global and European agriculture. These trends focus on the efficience and knowledge, management training, technical progress, computerization etc.

The agriculture of future requires a certain type of agricultural producer who must be a good agronomist and an animal husbandry expert, a specialist in the environmental protection, a competent financial analyst, a good IT expert and a gifted marketing specialist.

Under these circumstances the authors of the present paper considered that developing a guide with information on the overall problems of the plant production management would be greatly appreciated by the interested parties.

For this reason, an analysis was done in three agricultural exploitation types regarding some general characteristic in order to implement modern mechanization activities.

In order to implement a management plant for the farm success, several possible variants of equipment supply were suggested taking into account the economic efficiency.

INFLUENCE OF THE EXPLOITATION WAY AND VEGETATION REGROWTH LENGTH ON THE TEMPORARY MEADOWS YIELD

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ABSTRACT

Beside natural conditions and maintenance way, the exploitation way of the meadows also the vegetation regrowth lenght are factors that lead to increasing of yield and quality of the sown meadows.

In average of three years, was obtained nearby yields on the temporary meadows exploited by simulated grazing or by mowing. Considering the regrowth lenght, best results was registered when the interval between harvests was bigger (30 – 40 days), in this case the vegetation regrowth lenght being optimum.

THE RESEARCH REGARDING WHEAT GERMINATION AND 1000 KERNELS WEIGHT INFLUENCE TO WINTER WHEAT YIELD IN ARDS SIMNIC AREA FIELD CONDITIONS

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ABSTRACT

During three years (2006-2008) to ARDS Simnic area have been tested fifty Romanian and foreign winter wheat varieties for establish the relationship among seed germination, 1000 kernels weight and yield. There were also studied other traits, as follows: seeding plants per square meter, growth rate, plant length, days till 01.01.to heading, spikes number per square meter, 1000 kernels weight, test weight.

The results emphasized that neither years nor 1000 kernels weight didn' t influence yield and correlation coefficients recording very significant values: r = 0,740 in 2006, r = 0,512 in 2007 and r = 0,385 in 2008. In each of experimental years, seeding 1000 kernels weight recorded higher values according as the value of 1000 kernels weight of seed used one year before.

Using 1000 kernels weight criteria, the tested varieties were classified and it was observed that the traits values were normal for most of tested varieties (40-45 g): germination (96,8 – 97,5%), growth rate (1,4 – 3), plant length (61,4 – 82,6 cm), lowest limit in 2007 droughty year, 1000 kernels weight of obtained seed (39,1-46,2 g), test weight (74,3-77,6 kg/hl).

Neither trait wasn' t correlated with seed germinaton even the tested varieties had up than 85% germination.

PHASES OF VINE' S INCREASE AND DEVELOPMENT IN VIEW OF THE ELABORATION THE VITICULTURE FENOCALENDAR. METHOD EXPERIMENTAL

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ABSTRACT

The researchs insided in the Viticol Research Center of Drăgăşani, since the 1977-1998 folowed up a sequencetial knowing of daily bioritm of the dried substance accumulationon the trunk which depends on thermal radiation (observations, remarks, determinantions, analyses: the ussualy temperature, the active temperature and the operative temperature) for the main fenophases, stades and the fenologichal microstades on a side and the elaboration techological viticol optimized fenocalendar(FTVO).
Key words:daily bioritm, dried substance' s acumulation, active temperature, fenophase, techological viticol optimized fenocalendar (FTVO).

THE RESEARCH REGARDING THE BEHAVIOUR OF A KWS WINTER WHEAT SET IN ECOLOGICAL CONDITIONS FROM OLTENIA CENTRAL AREA

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ABSTRACT

A set of four KWS winter wheat varieties were tested in a trail during 2004-2008 in ARDS Simnic area, beside other varieties from other different sources. These varieties were: Cordiale, Cubus, Meunier and Exotic.

In normal fertilizing conditions, on four years average, these varieties recorded different yield values, as follows: Cordiale – 4329 kg/ha, Cubus – 4582 kg/ha, Meunier – 4051 kg/ha and Exotic 4909 kg/ha, the last one recording the third average yield from a twenty-five winter wheat set.

In 2005 year these varieties recorded the highest yields, as follows: Cubus – 7040 kg/ha, Meunier – 6050 kg/ha, Exotic – 7470 kg/ha and Cordiale – 5970 kg/ha.

In limited N fertilizing rate conditions, on three years average, the previous varieties recorded diminished yields: Cordiale – 34%, Meunier – 44%, Cubus – 36% and Exotic – 41%.

THE SEEDING DELAY INFLUENCE TO WINTER WHEAT MORPHOLOGICAL AND PHYSIOLOGICAL CHARACTERS IN ARDS SIMNIC AREA FIELD CONDITIONS

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ABSTRACT

During three years (2005-2007) have been tested 120 winter wheat lines, carrying Rht1 and Rht2 –height reduction genes, seeded in two different data at two weeks time distance.

On three years average, the yield decreased from 4220 kg/ha obtained under normal conditions at 3820 kg/ha under delayed seeding, except 2007 a dry year when the yield was with 5-7% higher under delayed seeding conditions. During these three years also, the average of

plants number per square meter recorded a decrease from normal to delay by 50 plants/m^2, the number of spikes/m^2 recorded a decrease by 140 spikes/m^2 from normal to delayed seeding and 1000 grains weight decreased with 12% from a data to another. At the classification of winter wheat lines after vegetation period and statistical calculation were not yield differences statistically assured. Thus, indifferently by lines earliness, the yield was lower at delayed seeding. Wheat lines were different after the present/absent of the leaves aspect given by the present/absent of waxy genes. At delayed seeding the lines with waxy gene obtained a yield gain statistically assured comparatively with lines without this gene by 745 kg/ha. Depending on the presence of Rht gene and seeding data we can say that the highest yield difference was obtain by semidwarf lines carrying Rth8 gene. Regarding with plant height, those lines carrying rht gene recoded a size reduction with 15.2% at delayed seeding. We can conclude that at delayed seeding the yield was with 10% lower, the number of plants/m^2 with 11% less, the number of spikes/m^2 with 20.5% less and 1000 grains weight with 12% lower.

IDENTIFICATION RESEARCH REGARDING WHEAT ,, ALTERNATIVE,, TYPE SOURCES IN OLTENIA CENTRAL AREA CONDITIONS

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ABSTRACT

During three years (2005-2007) to ARDS Simnic area conditions have been tested in field experiments a winter wheat set from Israel, known as ,,alternative,, type grains. The main objective was to study how this trait is mentaind in these field conditions. These varieties were: Dariel, Galil, Shoham, Bash, Hazera 11, Hazera 13, Hazera 45 and Hazera 307.More, for identify also other ,,alternative,, sources there were seeding on oct. 2007 and march 2008 twenty-five romanian and foreign wheat varieties.

The israelite varieties were more productive when they were seeding in autumn (the highest yield was 5500 kg/ha) beside the results recorded in spring (maximum yield 2800 kg/ha).

The varieties tested in 2008 spring recorded yields ranged among: 1687 kg/ha (Enesco variety) and 66 kg/ha (Rustic variety). Spring seeding varieties recorded an accented yield decrease beside autumn seeding varieties yield values (among 4944 kg/ha by Aztec and 2928 kg/ha by Meunier). Enesco variety which was seeding in last autumn recorded 4422 kg/ha yield.

As a conclusion, even the tested varieties overcross all stages they didn' t achive yield capacity that was recorded by autumn seeding varieties. We recommand to seeding these varieties only whean accidents are occured, such as 2007 year, when we couldn' t seeding untill the 20th of November to next spring, due to environmental conditions.

THE FERTILIZING INFLUENCE TO A WINTER WHEAT SET YIELDS IN DIFFERENT ENVIRONMENTAL CONDITIONS TO ARDS SIMNIC AREA

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ABSTRACT

During three years (2005-2007), twenty-five Romanian wheat varieties have been tested to ARDS Simnic in different environmental conditions, using two fertilizer rates: $N_{100}P_{40}$ (autumn and spring divided) and $N_{40}P_{40}$ (applied only in autumn).

In 2005, a normal rainfall year, fourteen wheat varieties have recorded yield decreases beside to other 10 varieties yield values which were to the witness level, in normal fertilizing conditions. The Romanian varieties yields ranged among 4641 kg/ha (Fundulea) and 7033 kg/ha

(Alex) in $N_{100}P_{40}$ fertilizing conditions and among 4003 kg/ha (Fundulea 4) and 6395 kg/ha (Dor) in half nitrogen rate conditions.

In $N_{100}P_{40}$ fertilizing conditions have been recorded a distinct significant yield decrease for following varieties: Simnic 30 and Izvor (634-680 kg/ha), a distinct significant yield decrease value to Izvor variety (917 kg/ha) and very significant values to Fundulea 4, Lovrin 34, Briana, Boema, Delabrad, Gruia, Jiana, Jupiter, Junona, Bezostaia, varieties and F89039 G5-1 inbred line (1049-2016 kg/ha).

In 2007 year, one of the driest years occurred to Simnic area, were recorded lower yields than previous years. Thus, in $N_{100}P_{40}$ rate condition, Lovrin variety recorded the lowest yield (2282 kg/ha) and Alex variety recorded the highest yield (3405 kg/ha). Significant outputs have been recorded Alex and Gruia varieties (627 kg/ha and 721 kg/ha). The other varieties have been to the witness level value.

It was observed that most of varieties have been recorded equal yields in both fertilizing conditions or even higher yields for $N_{100}P_{40}$ rate, because the drought blocked first nitrogen rate absorption.

THE ESTABLISHMENT OF DROUGHT RESISTANCE SELECTION CRITERIA PROCEEDING FROM A WINTER WHEAT SET CORRELATIONS IN OLTENIA CENTRAL AREA CONDITIONS

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ABSTRACT

With the results obtained during a dry year, 2007 in our case-one of driest years recorded at Simnic, we made analyze of correlations among several traits observed at 75 winter wheat varieties with different origins. Were studied the following characters: the height of plants, drought resistance note, the percentage of total sterile spikes, the percentage of partial sterile spikes, the number of plants/m^2, the number of spikes/m^2, the number of grains/spike, the grains weight/spike, 1000 grains weight, hectoliter weight, the number of days from 01.01 till heading and the yield. So that, the height of plants and drought resistance note are correlated in percentage by 37.4% existing an obviously grouping around the line. The correlation is very significant negative, so when the height of plant is higher the note value is lower. The regression equation shows that for each increase of the height of plants with 10cm, the note for drought resistance decrease with 0.7. The note for drought resistance was very significant positive correlated with the percentage of partial sterile spikes, so that when the note has a higher value also the percentage of partial sterile spikes is growing.The determination coefficient was in this case by 21.9%. The note of drought resistance was, very significant negative correlated with 1000 grains weight and yield. The regression equation shows that for each increase with a unit of the note the yield decreases with 175 kg/ha. A very strong correlation was recorded between the resistance note and the period from 01.01 till heading time. When a variety has earliness the note for drought resistance is lower, so that the variety is more resistant. Increasing of the note for drought resistance involves in proportion by 51% the increase of the period from 01.01 till heading with 2.6 days. Significant deviations presented Lovrin34 and an Israeli variety Galil. We can conclude that a simple note for drought resistance based on a visual appreciation may lead us to a selection with good results concerning drought tolerance of the varieties.

RESEARCH REGARDING THE INFLUENCE OF FERTILIZATION ON WHEAT PRODUCTION AND QUALITY

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ABSTRACT

The establishing of a rational fertilization system, which shall positively influence the quantity and quality of yield, improving, at the same time, the potential fertility of the soil, is an important mean of increasing economic efficiency.

Wheat is one of the main plants cultivated in the area. The research was conducted at the Caracal Agricultural Research and Development Station, on a chernozem soil, strong decarbonated. The applying of fertilizer led to obtain production increase between 4.9 - 58.8%. Nitrogen is the determinant element, influencing the level of production and the quality of yield.

RESEARCHS ON THE INFLUENCE OF PINCHING AND THINNING OUT ON THE PRODUCTION OF VIRGINIA TOBACCO, ON THE CONDITIONS SOIL AND CLIME MÎRŞANI – DOLJ

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ABSTRACT

Through the work of flesh and thinning out try to give an answer to the question of how much increased production of leaves, after carrying out these works in the local environment.

Results obtained show that production to the method recommended to make the elimination inflorescences as early as possible (the emergence of floral button – a_1), other variants, respectively a_2 (pinching at the beginning) and a_3 (pinching in full bloom), is different and somewhat illogical hard to explain.

Thus, for a_2 gives a less production of about 130 kg/ha, compared to variant witness, that deficit should be delayed on account of performing the work of pinching to start flowering, and a_3, when the delay was performing work and higher and should lead to a shortage of production as of late, has not won a minus but a plus yield producing 271 kg/ ha.

RESEARCH ON THE STATE OF MATURITY OF VIRGINIA TOBACCO LEAVES WHEN HARVESTING ON DIFFERENT LEVELS OF FERTILIZATION, THE PRODUCTION, ON THE CONDITIONS SOIL AND CLIME MÎRŞANI – DOLJ

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ABSTRACT

The quality of tobacco is the main objective of both grower as well as the beneficial interest of both partners having recovery harvest at a price as best.

By determinations made and given the means available to seek to put in evidence the importance of the moment of optimum harvest leaves and fertilization on the quality of leaf and influence their and, if possible how big is this influence.

From obtained results show that tobacco does not have to harvest before or after the technical maturity, because in these situations production per hectare and the corresponding decrease without further take into account loss of quality so as to the collection before and after maturity.

THE INFLUENCE OF LONG TERM FERTILIZATION ON MAIZE YIELD AND QUALITY

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ABSTRACT

The paper surveys some results obtained in maize in a long term experiment from the Caracal Agricultural Research Station. The application of progressive N, P and K rates influenced the yield and its quality. The application of nitrogen fertilizers ($N_{150\text{-}180}$) is a decisive factor in achieving high and superior yield.

RESEARCHES REGARDING THE CHANGES OF THE OXIDATIVE STATUS OF GRAPEFRUITS JUICE AFTER SWEETENING TASK

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ABSTRACT

The work paper is a side of complex study regarding the effects of natural and synthetic edulcorants on the lot of liquid foods. Follow the increased consume for the grapefruit juice in present time it is necessary to knowing the effects of sweetening task on the consumers' human bodies for prove and promote the best edulcorant. The grapefruit juice experimental variants were prepared and sweetened with most used edulcorants for Romania and the changes of the oxidative status of juice were monitories. The monitoring can be use for promote the healthy edulcorant and for establish the best time of preserve for this juice.

RESEARCHES REGARDING THE CHANGES OF THE OXIDATIVE STATUS OF LEMON JUICE AFTER SWEETENING TASK

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ABSTRACT

The work paper is a side of complex study regarding the effects of natural and synthetic edulcorants on the lot of liquid foods. Follow the increased consume for the lemon juice in present time it is necessary to knowing the effects of sweetening task on the consumers' human bodies for prove and promote the best edulcorant.The lemon juice experimental variants were prepared and sweetenered with most used edulcorants for Romania and the changes of the oxidative status of juice were monitorised. The monitoring can be use for promote the healthy edulcorant and for establish the best time of preserve for this juice.

THE PRODUCTIVITY OF SOME FOREIGN ALFALFA VARIETIES UNDER THE INFLUENCE OF ORGANIC FERTILIZERS AND BIOSTIMULATORS IN WESTERN ROMANIA

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ABSTRACT

In this research we have studied three Serbian varieties of alfalfa fertilised with different doses of organic fertiliser and there where applied on leaves three growth regulators.

The varieties studied here are: Novosadanka-H11, Rasinka and Tisa. The organic fertiliser doses are 20 t/ha manure and respectively 40 t/ha, and the applied growth regulators are Cropmax 1 l/ha, Atinik 0.5 l/ha, and Bionat 2 l/ha.

The highest yields of fresh fodder are registered in the case of the second cut for all three alfalfa varieties fertilised with 40 t/ha manure there being differences lower then 5 t/ha of fresh fodder in comparison with the tester.

Comparing the applied growth regulators the most representative from the yield point of view is Cropmax, in its case being registered yield increases for all three alfalfa varieties, and for all the cuts realised.

THE BEHAVIOUR OF SOME WHEAT VARIETIES DEPENDING ON THE AGRO FUND, IN THE CONDITIONS OF THE BROWN-REDDISH SOIL (PRELUVOSOIL) FROM THE CENTRAL AREA OF OLTENIA

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ABSTRACT

Between the years 1996 and 2000 at S.D.E Banu Maracine from the University of Craiova, on a brown-reddish soil (reddish preluvosoil) it has been studied after maize, comparative culture with wheat varieties, on agro funds, with 2 factors in 4 instances.

The smallest productions have been obtained at all wheat varieties on the agro fund $N_{50}P_{30}$ (3720 kg/ha wheat), while the highest productions on the agro fund $a_3(N_{150}P_{90})$, respectively of 4375 kg/ha wheat. For another 4 varieties of wheat studied in experiments, the agro fund $a_3(N_{150}P_{90})$ and $a_4(N_{50}P_{30}$ + 20 t/ha manure) have accomplished the highest productions.

THE INFLUENCE OF THE AGROFUND AND THE ROTATION OF SHORT TIME LENGTH OPON THE WHEAT PRODUCTION UNDER THE CONDITIONS OF ITS CULTIVATION ON TYPICAL CERNOSIUM SOIL FROM SOTUTHERN OLTENIA

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ABSTRACT

The experiments have been effectuated on typical cernosium soil without irrigation, between 2001 and 2006, at the Portaresti-Segarcea location, where the influence of the agro fund and the short period crop rotation was studied upon the wheat production the most important results being summarized as:

-On agro fund $a_1(N_{100}P_{50})$, the smallest wheat production was recorded , of 4804 kg/ha, on agro fund $a_2(N_{150}P_{100})$ the wheat production was of 510 kg/ha while on the agro fund $a_3(N_{200}P_{150})$ the wheat production was of 5542 kg/ha.

-The wheat mono-culture has registered the smallest wheat production, of 3739 kg/ha, the two year rotation(wheat-maize) has accomplished 3881 kg/ha, the three year rotation(lupin-wheat-

maize) has accomplished 4155 kg/ha and the four year rotation(lupin-wheat-maize-sunflower) has registered a production of 4198 kg/ha.

RESEARCH REGARDING THE INFLUENCE OF CROP DENSITY ON GRAIN YIELDS AND YIELD QUALITY AT CHENOPODIUM QUINOA SPECIES IN THE CENTRAL PART OF ROMANIAN PLAIN

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ABSTRACT

The focus of our research was the study of a new species of agricultural crop – quinoa (*Chenopodium quinoa*), from the point of view of productivity and yield quality.

The trials were performed in the years 2006-2007 in the Experimental Field Moara Domneasca belonging to the Field Crops Department, the Bucharest Faculty of Agriculture.

As a consequence of the effected research, it resulted that quinoa plants present resistance to a dry and warm climate and the grains yields were good, between 17.8 and 25.4 q/ha in 2006 and between 12.00 and 20.95 q/ha, in the less favourable year of 2007.

The average chemical composition of quinoa grains was the following: moisture between 12.30 and 13.61%, dry matter content between 86.39 and 87.70%, out of which: proteins between 14.70 and 16.71% (superior to cereals); starch between 60.40 and 65.44%; lipids between 5.31 and 5.80%; cellulose between 2.11 and 2.18%; ash between 2.09 and 2.89%.

Quinoa plants had a vegetation period comprised between 146 and 157 days and the full maturity of grains took place after having accumulated 750-**775 GDD (Σt> 15**oC).

On the basis of results, it is recommended the extension of research and demonstration plots with *Chenopodium quinoa* and the sowing at a distance of 50 cm between rows with densities of 100 thou plants/ha.

RESEARCH CONCERNING IMPROVED METHODS OF OBTEINING THE SEEDLING WITH INFLUENCE ON GROWTH AND DEVELOPMENT OF TOMATOES

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ABSTARCT

The present work refers to the results obtained in 2007 in an experiment on tomatoes. To increase the quality is absolutely necessary improving the methods of obtaining the seedlings. Thus, we studied the behavior of tomatoes seedlings cultivated in different pots types.

The experiments were done in cold glass house at the National Research & Development Institute for Biotechnology in Horticulture – **Ştefăneşti** – **Argeş**.

We used three tomatoes hybrids: Pablo, Notorius and Heinz, first with indeterminate growth, and the other with determinate growth. The experimental variants were: V_1- seedling transplanted in plastic pots of 450 cm^3, V_2- seedling transplanted in plastic pots of 300 cm^3, V_3- seedling transplanted in jiffy-pots of 150 cm^3 and V_4- seedling without transplantation.

THE INFLUENCE OF THE FERTILIZATION ON THE GROWTH AND PRODUCTION ELEMENTS IN THE WHEAT CROP UNDER THE CLIMATIC CONDITIONS

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ABSTRACT

The paper presents results obtained at winter weath crop, under the influence of fertilization with long-term mineral fertilizers. A possible supply nutritional substance is one of the most important factors in achieving high crop per unit of area, but the optimum may be different from year to year depending on the evolution of weather conditions.

The physiological and biochemical effects of nutrients can not be considered in isolation, because photosynthesis, sweating, use and translocation hydrated carbon and organic acids is directly influenced by the climatic conditions that determine the interactions that influence the availability and absorption of nutrients by the plants wheat. Plant growth and accumulation of substances in grain is determined, in particular, the factors that action on metabolic pathways, such contributed to obtain high yields with superior quality indices.

So, a balanced nutrition with fertilizers may be different from year to year depending on weather conditions.

STUDIES CONCERNING RELATION BETWEEN SLAUGHTERING WEIGHT AND GRADING CARCASES CLASSIFIED IN „EUROP" SYSTEM AT PIGS WITH DIFFERENT PROVENANCE

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ABSTRACT

In Romania, the pigs carcase grading is maked in the basis of the regulations established through Order 457/2004 of MARD and is applied to all pigs carcase weiging 50-120 kg exempt the reproduction animals. Carcase grading it is not obligatory for the farms which obtain and grow piglets which is sacriffied and carved inside of the own farm.

The pig carcase is graded in the moment of weighing, on warm carcase (max. 45 min. from slaughtering), considering the muscle tissue estimated content. The commercial value of the carcase is determided through the muscle tissue estimated content (ratio between weight of the red muscle ensembly and the weight of the carcase), considering the weight of the carcase.

The results of grading and the dully price is listed in the grading report which is drawn up in tree copy from which one is given to the animal owners, one for the abatoir and one reste to the clasifficator.

COMPARATIVE STUDIES CONCERNING THE ARTIFICIAL INSEMINATION AT THE TAURINE EFFECTIVE FROM OLTENIA

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ABSTRACT

The taurines detain a prioritary position in the national and global livestock having the major balance on milk production (over 90% of the consumption milk) and the second place on meat

production (over 35% of the consumption meat). Reproduction is one of the cardinal points for the numerical and quality taurines effective increase.

The artificial insemination is wide-spread in our country and is scheduled that this system to be extended to 85% of the total national cows effective.

SECȚIUNEA 2: ŞTIINȚELE SOLULUI

Pedologie, Agrochimie, Agrotehnică, Îmbunătățiri funciare, Sisteme şi echipamente pentru irigații

WORKING GROUP 2: SOIL SCIENCES

Pedology, Agrochemistry, Agrotechnics, Soil Improvement Works, Equipments and Systems for Irrigations

ON THE IMPACT OF HERBICIDE APPLICATIONS ON WEEDING DEGREE AND YIELD IN WINTER WHEAT

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ABSTRACT

Our research aimed at monitoring the impact of some herbicides on weeding and yield in winter wheat Alex cultivar, in the soil and climate conditions of the Didactic Station **Timişoara.Temperature is a vegetation factor w**ith direct impact on plant growth and development. In the agricultural years 2004-2005 and 2005-2006 there were small oscillations of the monthly average temperature, except for July 2006 which was slightly hotter than the multi-annual average. The agricultural year 2006-2007 was particularly hot, with an average value of 11.71o CRainfall regime is irregular in pattern, with years moister than the average and very little rainfalls. Thus, in April and August 2005, rainfalls totalled 154,4 and 142,4 mm, respectively. Likewise, in April 2007, there were only 4,4 mm, the entire Banat area being affected by drought.During the trial period, between 2005 and 2007, the natural weeding state in winter wheat Alex cultivar had the average 101,94 weeds/m^2 . We tested 9 herbicides, the most used in agronomic practice: Aim Plus, Derby 175 SC, DMA 6, Icedin super, Lancet RV, Lintur 70 WG, Mustang, Oltisan extra and Sekator. The technology applied was specific to the chernozem area in the Western Plain, with the mention that the pre-emergent crop was soy . All the trial variants were fertilized with complex chemical fertilizers corresponding to a dose of $N_{100}P_{45}K_{45}$.

The impact of the postemergent herbicides results in a diminution (the average 2005-2007) of the weeding degree, between 71,49% (DMA 6 1 l/ha) and 90,47% (Icedin super 1 l/ha).The yields obtained in winter wheat Alex cultivar are directly correlated with the weeding degree, i.e. higher in the variants in which weed control degree was maximal. The productivity had the values between: 34,97q/ha(non-treated) and 44,56 q/ha (Icedin super 1 l/ha).

ON THE IMPACT OF HERBICIDES AND DIFFERENTIATED FERTILISERS ON YIELD IN TWO WINTER WHEAT CULTIVARS ADAPTED TO WESTERN ROMANIA

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ABSTRACT

Research carried out over two agricultural years (2006-2007 and 2007-2008) aimed at pointing out the effect of herbicides and differentiated fertilisers with mineral fertilisers on yield in winter wheat (Alex and Romulus cultivars). In the year 2007, yield in the Alex winter wheat cultivar

was between 26,49 q/ha and 49,92 q/ha, and in yield in the Romulus winter wheat cultivar it was between 26,10 q/ha and 43,92 q/ha. The highest yields in the Alex cultivar were in the $N_{120}P_{45}K_{45}$ variants treated with Oltisan M 1l/ha and Mustang 0,5 l/ha, i.e. 49,92 q/ha and 46,83 q/ha, respectively. In the Romulus winter wheat cultivar also, the variants treated with Oltisan M 1l/ha, Mustang 0,5 l/ha, and fertilised with $N_{120}P_{45}K_{45}$ yielded 43,92 q/ha and 43,90 q/ha. Taking into account the fact that the spring of 2007 was marked by prolonged drought (in April there were 4 mm of rainfall), there was a poor valorising of the fertilisers administered, winter wheat yield being lower than the average of the years considered favourable to this crop in this area of the country. In the year 2008, after applying herbicides and fertilisers, winter wheat yield in the Alex cultivar was between 32,92 q/ha and 54,28 q/ha. The highest yields were in the variants treated with Oltisan M 1l/ha and Mustang 0,5 l/ha and fertilised with $N_{120}P_{45}K_{45}$, i.e. 54,28 q/ha and 52,17q/ha, respectively. The Romulus winter wheat cultivar yielded less than the Alex winter wheat cultivar in 2008. The variants treated with Oltisan M 1l/ha and Mustang 0,5 l/ha g/ha and fertilised with $N_{120}P_{45}K_{45}$ yielded the highest yields, i.e. 50,14 q/ha and 49,58 q/ha, respectively.

PHYSICAL PROPERTIES OF SOME CALCIC CERNOZEMS FROM TECUCIULUI PLAIN

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ABSTRACT

The analized soil profiles are situated in the western part of the Tecuciului Plain, on the interfluves Siret (to the West) - Barlad (to the East). The parent material of those soils is represented by thick loess deposits with prevalent medium (loamy) texture and favorable physical properties (porosity, capillarity, permeability). Calcic Cernozems occupy the northern part of the interfluves and are entirely cultivated. There are characterized by the presence of various quantities of calcium carbonate ($CaCO_3$) in the first 50 cm, and the following horizon sequence: Am(k)-ACk-Ck. The mechanical composition of those soils is equilibrated and uniform both on soil profile and on surface (medium clayey silt in Am and Ack horizons), which influences the values of the soil physical properties (bulk density, total porosity, permeability, penetration resistance).

THE EFFECT OF LIQUID FERTILIZERS APPLIED ON BELL- PEPPER IN THE PROTECTED SPACE

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ABSTRACT

The paper presents experiment results obtained into the greenhouse applying four new ranges of liquid fertilizers (NEB 26, Stimusoil, Kelpak and Bionat). This fertilizer was tested with the bell-pepper crop, Cornel cultivar. The application of these, in 2005-2007, on cambic chernozem soil, ensured a significant yield increases, varying between 37 and 67%.

Also, the applied liquid fertilizers with ecological features had as a direct result the significant increase of degree of productive use of nutrients in crop yield that corresponds with the environmental chemical pollution diminuation.

This paper was financed by the Ministry of Education, Research and Youth, National Management Programme Center, project PENSOL, nr. 52-149 / 1.10.2008

THE IMPORTANCE OF THE INTEGRATED CROPS CONTROL METHODS IN THE SUSTAINABLE SOIL MANAGEMENT

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ABSTRACT

In our paper we present a few preliminary results of the study regarding the role of integrated crop control principles in the soil and the environmental protection and the main actions which should be applied in the case of twenty small and medium-sized farms from the county Ilfov.

These studies were performed under the project CEEX no. 56/2006 on the theme: " Modelling the response of agricultural holdings to the integration of economic and environmental principles through the sustainable management of soil resources", regarding the integration of economic and environmental principles and actions for the development of sustainable soil management.

The statistical data referring to production technology were investigated in order to achieve the best management system and to establish the measurements adopted for the integrated crop protection implementation.

ASPECTS CONCERNING MORPHOLOGICAL, PHYSICAL AND CHEMICAL CHARACTERIZATION OF THE GLEYIC HYPOSALIC CHERNOZEMS FROM VIZIRU PLANE

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ABSTRACT

Situated in east extremity of the Romanian Plane, Viziru Plane present a relative large range of soils as part of the Cernisoils and Salsodisoils classes. In our paper authors collective present some aspects concerning morphological, physical and chemical characteristics of the gleyic hyposalic chernozems, soils that appear in central part of the plane, were according with micro depressions clear determined by gullyes type.

THE EVOLUTION OF CERTAIN AGRO-CHEMICAL VALUES WITHIN CERTAIN EXPERIMENTS WITH CORN, NATURAL LAWN AND SEEDED LAWN FROM THE EXPERIMENTAL CENTER PREAJBA GORJ, IN THE SECOND AND THIRD YEAR OF EXPERIMENTING

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ABSTRACT

In this work is presented the evolution of agro-chemical indexes as: pH, mobile phosphorus content and humus content, the BA (the changing bases amount from the soil), the Ah (the hydrolytic acidity), the content of mobile aluminum, the degree of saturation in bases (V%) and the index of nitrogen (IN), as a result of the application of different doses of NPK, from experiments with corn, natural lawn and seeded lawn, from Experiments Center from Preajba Gorj, in the second and the third year of experimenting.

THE OPTIMISATION OF THE NUTRIENT DOSES WITH SEVERAL CROPS IN FUNCTION OF THE SOIL SUPPLY

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ABSTRACT

From a surface of about 100 ha, located in Slatina – Coteana zone, District Olt, there have been taken soil samples on 0-20 cm depth and there were made agrochemical analyses. In function of the results of the abnalyses there were calculated the fertilizer doses N, P, K, active ingredients, for the fertilization of the wheat, corn, sunflower, sugar beet, soybean and oil seed rape.

THE EFFECTS OF SULFONYLUREA, AMIDOSULFURON AND TIFENSULFURON ON SACCHAROSE ACTIVITY FROM SOIL

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ABSTRACT

The effects of sulfonylurea herbicides: chlorsulfuron, amidosulfuron and tifensulfuron on saccharose activity from cambic chernozem (West Plain) have been evaluated for seven days.

In natural climate conditions (field conditions) as well as laboratory conditions different increasing herbicide doses have been tested.

Considering field or natural conditions, as a result of herbicide treatments, and particularly chlorsulfuron (20 g/ha), it has been observed that saccharose potential undergoes several changes of inhibitory nature, but without important significance due to very small registered values.

In laboratory conditions, the presence of tifensulfuron herbicide in the soil sample induces the decrease of saccharose activity to 60 and 300 g/ha, respectively, comparing with the control variant.

THE RESEARCH REGARDING THE MAIN PROPERTIES OF THE PSAMOSOILS FROM THE REGION OF POIANA MARE

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ABSTRACT

In Poiana Mare area psamosils occupy a surface of 5000 ha. The main psamosoils meet in area are: molic psamosoils, eutric psamosoils, calcite psamosoils, gleic psamosoils and salinized psamosoils.

Those psamosoils fertility is different function of micro-relief areas and humification degree. Thus, the most fertile are molic psamosoils, meet on large and less depth inter-dunes. The smallest fertility is for eutric psamosoils meet on dunes top, sometimes in places with sand drifts and salinized psamosoils meet in inter dunes with intense processes of soluble salt depositing.

For increase the productive capacity of psamosoils from the studied area, must be taken measures of aeolian deflation combating, of organic and mineral fertilization and irrigation.

RESEARCH CONCERNING THE NITRATE AND NITRITE CONTAMINATION LEVEL IN BEETROOTS, CUCUMBERS, CELERY, RADISH, AND GREEN ONION

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ABSTRACT

Research being carried out at present on the nitrate and nitrite content in beetroot, cucumber, celery, radish, and green onion aim at getting vegetable consumers aware of the negative effects of eating such vegetables if they contain more nitrates and nitrites than admitted. To do that, we sampled vegetables from two markets and a supermarket in Timisoara. Analyses **carried out on the vegetables purchased from the Badea Cârța**n Market pointed out a nitrate content between 285 ppm (radish) and 1427 ppm (beetroot), while nitrite content was between 0,4 ppm (green onion) and 8,6 ppm (radish). The values measured in the vegetables purchased from the Iosefin Market are close to the **values measured in the Badea Cârțan Market, and they range** between 342 ppm and 1472 ppm, while nitrite values range between 0,2 ppm and 4,7 ppm. Analyses carried out on the vegetables purchased from the Real Supermarket show values close to the values measured in the vegetables purchased from the two markets, except for the nitrate content in beetroots – 1852 ppm.

RESEARCHES REGARDING THE REABILITATION AND THE RETECHNOLOGIZING OF IRRIGATIONS SYSTEMS FROM ARAD' S PLAIN

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ABSTRACT

The irrigations tooked an important place between measures what contributed by prosperity of agriculture. The climate is corrected through the application of the irrigation, removing the negative effects of drought. The researches are inframed the works for rehabilitation and retechnologizing: the improvements of hydrants, the using of bornes for irrigation, optimization of irrigations plot for increasing the number of the installation in simultaneous functions, and application of bivalents.

STUDIES ABOUT THE REVALUATION OF IRRIGATIONS DEVELOPMENT IN ARAD' S PLAIN

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ABSTRACT

In present, the experts in this domain are preoccupied with studies and researches about the efficiency of the irrigations systems on ground of correlations between hydrotechnical exploiting of systems and agrotechnical exploiting of areas which are arranged for irrigations. The irrigations systems are placed on the bests soils. The climatical conditions in most of the years are unfavorable for the achievement of high and constant productions. The studies has showed the opportunity for the application of irrigations.

THE RESEARCHES REGARDING THE DIFFERENTS OF PRODUCTION AT AGRICULTURAL CROPS IN UNIRRIGATED AND IRRIGATED SYSTEM FROM ARAD' S PLAIN

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ABSTRACT

In general the irrigation systems are localized on the high fruitfulness soils. In Arad county were maked researches for a long time, and from was resulted a series of conclusions about the productions growth on irrigated systems of agriculture in comparison with unirrigated agriculture. The highest growths are obtained in the dry years.

RESEARCHES REGARDING THE INCREASING OF SPRINKLER IRRIGATION INSTALLATIONS WITH SIMULTANEOUS FUNCTION IN ARAD' S PLAIN

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ABSTRACT

The change of crops structure in agriculture in present, are imposed the optimized methods for exploiting the irrigations plot.

Also is necessary what the whole area of irrigations plot must watered in optimal time, and must adapted for new conditions. This means the modification of pump stations and the reglement of exploiting.

ADVANCED OXIDATION PROCESSES (AOP)

COJOCARU ILEANA, DINCĂ DANIELA

ABSTRACT

Advanced oxidation processes (AOP) is a class of new and effective methods used to accelerate the process of oxidation and degradation for refractory compounds.

Advanced oxidation processes (AOP) is a class of new and efficient methods used to accelerate the process of oxidation and also for degradation of the refractory compounds.

At the AOP sites are physical and chemical processes through which are generated " in situ" powerful oxidizing species, especially hydroxyl radicals (HO.), which makes conditions favorable for full mineralization organic compounds to form CO2, H2O and inorganic salts.

SOME ASPECTS CONCERNING THE RECOMMENDATIONS FOR MINERAL FERTILIZATON TO WINTER WHEAT CROP IN THE SC AGROTEHNIC SRL PĂULEŞTI EXPERIMENTAL PLOT

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ABSTRACT

This paper is dealing with some aspects regarding the mineral fertilization in optimal economical rates (OER) for winter wheat crop. Therefore, the paper presents data necessary to establish the recommendations for N, P and K fertilization. The optimat economical N, P, K rates are differentiated as related to the available soil macroronutrient contents and the expected yields. Also, the fertilization recommendations were estabilish in relation with the mineral nutrition status of **winter wheat and the soil conditions from SC Agrotehnic Plăuleşti experimental plot. The tested** plant was Serina and Renan cultivars, grown on Chromic luvisols. This study was financed by the Ministry of Education, Research and Youth, National Management Programme Center, project 51-040 /14.09.2007 GRIFOX.

FOLIAR FERTILIZATION AN EFFICIENT METHOD FOR REDUCTION OF NUTRIENTS LOSSES IN THE ENVIRONMENT

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ABSTRACT

Today the excessive use of chemical fertilizers is one of the most frequent causes of environmental pollution. The reduction of nutrient losses in soil and water may be achieved by using an alternative fertilization system, that including the foliar fertilizers application.

In this context, the foliar fertilizers with mineral nutrients and organic substances, applied on plant leaves in order to prevent or to correct the nutrient disorders in plant, may by a possibility for reduction of chemical pollution risk in the environment, especially, due to incresing the degees of productive nutrient use from soil reserves and applied fertilisers.

This paper presents experiment results obtained into the greenhouse applying two new ranges of foliar fertilizers with maize and sunflower crops. Their application, on vermic chernozems, ensured important yield increases of dry matter and had a positive effect on N, P and K uptakes in plant dry matter.

This paper was financed by the Ministry of Education, Research and Youth, National Management Programme Center, project PENSOL, nr. 52-149 /1.10.2008.

RESEARCHES ON THE MULCH ROLE FOR WATER KEEPING INTO THE SOIL

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ABSTRACT

Water is the engine of plant growth and developing. More water into the soil means more nutrients available and better yield. If the soil has not enough nutrients, the sap that enter into the plant do not ensure the nutrient amount. With the classic system where the basis tillage is plowing into the arable layer there are created larger pores and the water stays at the root uptake. This is the mechanism that keeps water into the plowed soil. The not plowed and bare soil forms a compact shallow layer that has finer capillarity than below, of 5-7 cm. This layer is formed by rainfall during the cool seasons. In the late spring, when the atmosphere water vapor deficit increases, this layer extracts the water from below because it has finer capillarity. By actual experiment we have measured the rhythm those three systems (tillage, covered and not tillage bare) lose the water for the three soil textures. The results have shown that the covered soil keeps the water best, followed by the tilled soil. The not tilled and bare soil loses a double amount of water in comparison with the previous systems and during the hot days loses the available water one week earlier.

THE ECOLOGICAL BUILDUP OF THE STERILE DUMPS FROM DISTRICT MEHEDINTI

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ABSTRACT

After coal extraction and deposition of the gangue there are formed dumps that replace the initial soils within the Husnicioara quarry perimeter. The initial soils were: reddish preluvosoil, typical preluvosoil, vertic luvosoil, albic luvosoil; they were replaced by the psamic entiantrosoil that has not favoraable features for plant growth. Its texture is sandy-loamy or sandy in comparison with the initial one that was clayey, the reaction is weak or moderate alkaline, in comparison with formerly weak acid, the humus content has decreased to 0.5% from 1.5-2.2% and the phosphorus and potash contents have severelly decreased.This soil belongs to the Vth class of fertility, in comparison with the former ones which belonged to the IInd or IIIrd class. Their ecological recovery can be made using suitable crops as annual and perenial pulses and by using large quantities of organic and chemical fertilizers. The goal ist o enrich the new soil in organic matter.

THE HEAVILY MODIFIED WATER BODIES DESIGNATION FOR JIU RIVER

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ABSTRACT

Hydro morphological alterations and surface water quality decrease, has been done by industry and population grow from last century. In this context ecological status for surface water have suffered, in an awareness way. The target of Framework Water Directive 2000/60/EEC is to achieve the good ecological status and good ecological potential for every water body categories: natural water bodies, artificial and heavily modified water bodies.

SOIL DATA USED AS INPUT IN THE NUTRIENT MANAGEMENT PLAN AT A FARM LEVEL

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ABSTRACT

At European level, people and policy makers start to feel very strongly about environment issues. The agricultural activities are the main nitrogen supply in soil, through application of the mineral and organic fertilizers doses. In the last decades, worldwide there was an increasing tendency of for using nitrogen based fertilizers, being well known that it represents an essential nutrient for conservation and/or amelioration the soil fertility state and for agricultural production, which has to satisfy the needs of increasing population. The presence of the high nitrogen concentrations, exceeding the admissible maxim limits may have a negative impact of the environment through the possible losses in the ground and surface waters and/or atmosphere.

In order to optimize the crop production in order to avoid the environmental contamination with nitrates, a nutrient management plan at the farm/village level was developed. The software is a useful tool for the farmer and/or local stakeholders, as well as for local authorities. In this paper the input data for soil are presented.

STUDY REGARDING THE IRRIGATION TECHNICS IN PROTECTED SPACES FOR VEGETABLE CULTURES IN CONDITIONS OF ARAD' S COUNTY

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ABSTRACT

The equipment diversification and the irrigation installations permit those adjusment to all vegetable culture systems. These cultures, are considered being intensive, it lends oneself for irrigation, especially in protected spaces, where the environment conditions are under human control. In actual practice all of the irrigation technics, the traditional ones, and the modern ones, which are used in different posibilties. The protected spaces, especially the hothouses requires two or even three irrigation technics.

STUDY REGARDING THE IRRIGATION TECHNICS USED AT STRAWBERRY CULTURE IN CONDITIONS OF LOVRIN - GOTTLOB – TIMIŞ

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ABSTRACT

The strawberry culture knows an extension these days thanks to the quality of fruits and the market' s request. In the area of Gottlob- **Lovrin, Timiş** county, the vegetation conditions are favourable, but the droughty periods requires soil humidity through irrigation.

Simultaneously with the strawberry culture extension, also the irrigation technics knows some changes. Strawberry producers choose a reasonable variant, concerning investments capacities.

RESEARCHES CONCERNING THE NUTRIENTS LOST ON SLOPE AGRICULTURAL LAND AS A RESULT OF SOIL EROSION

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ABSTRACT

This paper deals with the researches made in the frame of C.C.D.C.E.S. PERIENI concerning of the nutrients lost through erosion at winter wheat, corn, soybean, been and bromus sp.

The soil, considered like a natural unique resource, can be quickly destroyed, its fertility being able to remake by suitable measures, in a long period of time, but the soil' s ecological restoration can last centuries or even millenniums.

The main elements that have an important contribution in crop nutrition are: humus, nitrogen, phosphorus and potassium.

These elements are lost by:

Through soil eroded, who contribute at removing of these elements on slope and laying down of them to the base slope, in flood plain or in reservoirs, depended by force of flow, in the same time with solid material carry out;

Through water flowing on the soil surface and, these losses being in direct dependence with soil solubility and element quantity from soil;

Through moving of these elements together with the water piercing downwards the soil profile

It is necessary to remark that to crop plot with brome grass, the great nutrients lost it was recorded when the crop was in first year, when it was insufficiently developed

Make a ratio of nutrients losses recorded at crop plots to nutrients losses computed for acceptable erosion with are 8 to/ha/year, we see that:

- at cereals, the lost of nutrients represent 0.2 – 15% from calculated losses;
- at row crops the lost of nutrients represent 99 – 138% from calculated losses;
- at annual leguminous plants the lost of nutrients represent 71 – 126 % from calculated losses.

CONSIDERATIONS ABOUT SOME MOUNTAIN SOIL PARENT MATERIALS

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ABSTRACT

In Romania the mountain soils are developed on unstratified parent materials such as recent deluviums-eluviums formed from direct weathering of the rocks, and on stratified parent materials, a clayey interglacial layer, covered by postglacial deposits. In the Central Europe soil parent materials are stratified, formed in cold periods by periglacial processes. There were identified and described three layers who differ by the rock fragments litology, texture, mineralogy and heavy metals content (Kleber, 1990, 1992, 1997); additional those layers could incorporate loess, by periglacial processes (Semmel, 1993). There is a very close connection between the parent material litology and granulometry and the soil types. There were identified both monogenetic soils, developed in present day conditions (Humosiosoluri, Criptopodzoluri, Podzoluri,

Prepodzoluri), and poligenetic soils, formed on stratified parent materials (Eutricambosoluri şi Districambosoluri).

PEDOFACIES PROPOSAL IN ROMANIA

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ABSTRACT

Climatic conditions from Romania influence the soil profile by increasing the attention on some regional particularities. On the soil map of the country, scale 1:500.000 (Florea, Conea, Munteanu, 1970-1971) there were delimited at small scale (in medallion) the following climatic facieses (soil provinces): transilvan, charpato-panonic, danubiano-getic, danubiano-pontic, charpato-moldavian and mountain province.
The proposed pedofacies notion differ from facies notion (bioclimatic) because is defined both by soil thermal and hydric regime particularities and duration of the period with temperatures „ biological active" , determined by climatic, latitudinal and altitudinal diferences, and by geological differences due to the mineral substratum (origin, mineralogy and granulometry of the parent material) and to the hystorical-geographycal evolution of the teritory.

RESEARCHES ON THE ESTABLISHING THE YIELDING CAPACITY OF THE PRELUVOSOILS FROM THE HILLY ZONE OF OLTENIA BY SOIL EVALUATION WORK

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ABSTRACT

Due to the diverse relief, clime and vegetation conditions, within the hilly zone of Oltenia there were formed different preluvosoils.

After the researches that have been carried out on the field and the results of the laboratory analyses, within the studied zone there were identified typical preluvosoils; molic preluvosoils; vertic preluvosoils; redish and stagnic preluvosoils.

By soil evaluation work, in natural conditions there resulted that all preluvosoils have an average yielding capacity. The molic preluvosoil has a higher fertility and the stagnic preluvosoil has a lower fertility. By reclamation works the yielding capacity of the preluvosoil can increase evidently.

COMPARASION OF SIMULATION MODELS THAT ESTIMATE EROSION AND SOIL PHYSICAL PROPERTIES RELATED TO SOIL WATER DYNAMICS - BIBLIOGRAPHICAL STUDY-

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ABSTRACT

Data modeling is an important issue in indicators estimation. The accuracy of the result will mainly depend on the accuracy of the input data. In general the data input is represent by soil

maps. Soil maps are available at different scales and using different classification systems and legends in all EU Member States and Accession Countries.
The model should be able to simulate scenario' s of soil erosion under changing climatic conditions, estimate soil physical properties related to soil water dynamics (soil water characteristic curve, saturated and unsaturated hydraulic conductivity, field capacity, minimum soil water content for watering etc.) on the base of soil texture and bulk density.
The purpose of this paper is to synthesize and compare different simulation models used in indicator assessing in Europe: a simulation model spatially distributed predicting the dynamics of agro-physical soil state (SIDASS) in comparation with another simulation models like PESERA and USLE. The first model was developed to predict losses due to mechanical and hydraulic processes and it also enables users to simulate prevention strategies if the required basic datasets are available. The PESERA project has developed and is currently calibrating a process-based, spatially distributed model to quantify soil erosion by water and assess its risk across Europe the second one is a simple empirical model, based on regression analyses of rates of soil loss from erosion plots. Another example of an expert-based approach is GLASOD – Global Assessment of Soil Degradation. The GLASOD map identifies areas with a subjectively similar severity of erosion risk, irrespective of the conditions that would produce this erosion.

THE INFLUENCE OF THE SOIL WORKS AND MINERAL FERTILIZATION ON THE WEEDS LEVEL OF THE AGRICULTURE CROP FROM D.S. CRAIOVA, TÂMBUREŞTI CENTRE

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ABSTRACT

The tillages, fertilization, erbicides etc. have influenced the weed spectrum on sandy soil of **Tâmbureşti, Dolj County, during 2005 and 2007.**

In the wheat crop are the dicotiledonated species which rise in spring, while in the maize crop monocotiledonated and dicotiledonated species which rise in summer and autumn.

The main species are *Veronica hederifolia*, *Stellaria media*, *Convolvulus arvensis*, *Echinochloa crus-galli, Digitaria sanguinalis, Amaranthus retroflexus, Portulaca oleraceea*.

Amaranthus retroflexus weed has resisted to all changes except the lack of nitrogen. Once increasing the mineral fertilizers doses, the density of some species have increased (*Delphinium consolida*, *Centaurea cyanus*, *Vicia villosa*), and ton the most species have diminished (*Polygonum* aviculare, *Convolvulus arvensis*, *Thlaspi arvense*).

INVESTIGATIONS CONCERNING THE CHEMICAL CONTROL OF THE WEEDING LEVEL FROM THE TOBACCO CROP ON THE SANDY SOILS FROM THE LEFT SIDE OF JIU RIVER

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ABSTRACT

For the chemical control of the weeds from the tobacco crop there has been created over 25 herbicides (Diizocab, Dual 500, Mecloran, Balan, Benefex, Treflan, Triflurom, Gallant, Targa, Stomp, Fusilade, Harnex, Afalon etc.).

In this sense an bifactorial experiment was put in the field with herbicides types and number of hoeing (manual and mecanical), in total of 20 experimental plot of land in 4 repetitions.

It has determined the tabacco leafs production (Virginia type), the efficiency at drying, the weeding level, the plants height etc.

The best yield results of production (2014 kg/ha) has been obtain in the herbicidated variant with Stomp (4 l/ha) plus 2 manual hoeing and a mecanical one.

In the unherbicidated and unhoeing variant has been recordet only 263 kg/ha.

ASPECTS REGARDING SOIL DEGRADATION IN DABULENIULUI PLAIN

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ABSTRACT

Land or soil degradation is summary defined as „ decline of its quality caused by inadequate human utilization" . That definition refer to decrease of the land capability by unfavourable changes in the nutrient provision regime, in the content of organic matter, structure, salt and toxic substances content or other land characteristics. In Dabuleniului Plain, soil degradation is determined by the following factors: agricultural activities, excessive pasture, deforestation, overexploatation of the vegetation. Those factors generate morphological changes on the soil profile (by aeolian erosion or unfertile sedimentes colmation) and deterioration of the phisical (destructuration, compactation) and chemical (increase of acidity, poluttion) soil properties.

THE INTERNATIONAL SCIENTIFIC JOURNAL "PROPAGATION OF ORNAMENTAL PLANTS", ISSN 1311-9109, SEJANI

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Propagation of Ornamental Plants was established in 2001 and is under the auspice of International Plant Propagator' s Society. It is a peer-reviewed journal and is issued quarterly (March, June, September, and December). The main goal of the journal is to be an international refereed publication focused on new methods and progress in the field propagation of ornamental plants. The journal publishes results of studies covering all aspects of macropropagation (including rooting cuttings, seed propagation and grafting) and micropropagation of ornamentals – trees, shrubs and flowers. It publishes papers on the genetic, physiological, biochemical, anatomical and other aspects related to ornamental plant propagation. The journal provides researchers and commercial propagators a forum, where they can publish high-quality research results, covering the whole range of ornamentals. The Editorial Board of the journal consists of 40 leading scientists from Europe, North America, Asia and South Africa, covering all areas of plant propagation. The publication types are original articles, reviews, notes, protocols and technologies, announcements for symposia, conferences and book reviews. Until now were published more than 200 papers from all continents.

The journal is covered by Current Contents/Agriculture, Biology and Environmental Sciences and SCIE of Thomson Scientific, and by SCOPUS database of Elsevier. The Impact Factor of the journal is 0.333 for 2007.

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ON THE EVOLUTION OF THE MAIN QUALITY INDICATORS IN TWO WINTER WHEAT CULTIVARS ADAPTED TO WESTERN ROMANIA

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ABSTRACT

Research carried out over the years 2007 and 2008 in two winter wheat cultivars (Alex and Romulus) show that genetic, climate, and technological factors contribute significantly to the changes of winter wheat grain chemical composition. By testing different herbicides (Oltisan M, Mustang, Lintur) and different doses of mineral fertilisers ($N_{45}K_{45}P_{45}$, $N_{90}K_{45}P_{45}$, $N_{120}K_{45}P_{45}$), we could see that protein content in the Alex winter wheat cultivar varied in the agricultural year 2007-2008 between 11,0% in the variant treated with Oltisan M but not fertilised and 13,8% in the variant treated with Oltisan M and fertilised with $N_{120}K_{45}P_{45}$. In the same year, moist gluten content in the Alex winter wheat cultivar varied between 24.0% and 31,2%, and in the Romulus winter wheat cultivar it varied between 24,5% and 31.4%. As far as the protein content is concerned (average of the year 2007), it reached 12,29% in the Alex winter wheat cultivar and 12,57% in the Romulus winter wheat cultivar; moist gluten content represented 28,20% in the Alex winter wheat cultivar and 27,74% in the Romulus winter wheat cultivar. The agricultural year 2007 was a droughty one because of the lack of rainfalls, but favourable to protein accumulation in the grains. In the agricultural year 2007-2008, raw protein values in the Alex winter wheat cultivar varied between 10,9% (not treated, not fertilised) and 13,1 % (treated with Oltisan M and fertilised with $N_{120}K_{45}P_{45}$), while in the Romulus winter wheat cultivar it ranged between 10,9% (not treated, not fertilised) and 13,6 % (treated with Mustang and fertilised with $N_{120}K_{45}P_{45}$). From the point of view of raw protein content, we could see that the average of the year 2008 reached 12,02% in the Alex winter wheat cultivar and 12,04% in the Romulus winter wheat cultivar. Moist gluten content also had low variations: 27,76% in the Alex winter wheat cultivar and 27,17% in the Romulus winter wheat cultivar.

ANALYSIS OF THE SITUATION OF SOIL EROSION IN A HYDROGRAPHIC SUB-BASIN

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ABSTRACT

The paper is an analysis of the erosion process of the soil, a hydrographic sub-bassin and the final purpose of this is making the plans presenting a prognosos of the soil losses by erosion.It has been determined the erosion of two cases: potential erosion and effective erosion.

The plannes that have been executed, offer the possibility of analysing the multiple factors interfiering in starting and developing the erosion processes.The research method was based on mapping the erosion of the soil.

The distribution in degrees of danger was made according to the methodology established by ICPA, depending on the estimated soil losses (t/hectare*year). The estimation and the recording of erosion were made based on the regulations established by ICPA, according to thickness of the layer lost by erosion. The potential erosion of the whole sub-basin was calculated using the universal equation of surface erosion, based on the data gathered on the field and on the maps containing the delimitation of erosion units.

State indicators for surface erosion and risk indicators were used in order to read the obtained data, indicators grouped into the following categories: state or present status of degradation, impact on productivity and risk. The map of the surface erosion degree and the map of the degrees of surface erosion danger were made according to these results.

THE EFFECT OF NON-CONVENTIONAL TILLAGE UPON THE EDAPHIC COMPONENT OF THE AGRICULTURAL ECOSYSTEM

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ABSTRACT

Soil is a basic agrobiotype component whose qualitative features influence the intensity of the processes occuring within the agricultural ecosystem (change, transfer, storage, etc.).

The preservation and multiplication of the favourable features is a fundamental condition for the sustainable use of soil resources, as well as the development of human society.

Together with other basic elements of sustainable agriculture (crop rotation, leguminouse growing, organic matter application, etc.), non-conventional (alternative) soil tillage has positive influence upon the features of the former (Marin, 2007; Moraru, 2008; Rusu, 2008).

Our research was performed in an experimental station located on the reddish preluvosoil of South-southeastern Romania.

The experiments carried out between 2005 and 2008 show that cisseling is the technological variant with better effects upon the edaphic component of the agroecosystem.

THE PRODUCTION CAPACITY OF THE AGRICULTURAL FIELDS LOCATED ON THE EAST SIDE OF TIMIS COUNTY

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ABSTRACT

Fertility is a fundamental trait of the agricultural fields that has developed over time simultaneously with the physical conditions, with the soil formation and evolution and also with the growing anthropic intervention. An optimal fertility implies the best physical, chemical and biological soil properties, the abundance or at least the adequate existence of the water and of the nutritive substances necessary for the life of plants.

The totality of the conditions necessary for an optimal fertility is seldom met. In the majority of cases one or more factors are being found either faulty or in excess. In order to verify the situation the restrictive and degradation factors are being studied; their type, intensity, association.

RESEARCH REGARDING THE INFLUENCE OF IRRIGATION ON SOILS PROPERTIES LOCATED IN SOUTH PART OF ROMANIA

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ABSTRACT

Irrigation is one of the most important components of the agricultural technologic systems with a strong impact on chemical, physical and mineralogical properties soils. The irrigation water quality is a very important factor for evaluating the effects of irrigation on chemical and physical status. The composition and concentration in different chemical compounds of irrigation water contributes to major modification of the chemical soil properties (nutrients retaining and mobilization in soil) that may indirect negative effects on the physical soil state, especially upon soil structural water stability (Elisabeta Dumitru, A. Canarache, 1991).

HUMIDITY EXCES FROM BANAT RECORDED BETWEEN 1970 – 2000 PERIOD

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ABSTRACT

For Banat, the exces of humidity are determined by rains generated by the activity of the ocean cyclons wich develop at the suburbie of the azoric anticyclon and mediteranean cyclons with a normal or retrograde evolution. Station and pluviometrical posts have been chosen from county Timis and Caras Severin wich have recorded anual extreme value more obvious in the period of 1970 – 2000.

REGULARITIES FOR DISTRIBUTION OF PLUTONIUM ISOTOPES AROUND NPP "KOZLODUY" AND "RODOPA" MOUNTAIN

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ABSTRACT

The paper deals with the study and practical adoption of precise radiochemical procedures for quantitative determination of $^{239+240}$ Pu and ^{238} Pu which is of highest significance. The determination of alpha radionuclide in environmental objects with very low activity includes inaccuracies and ambiguities. We applied a scheme of work that simultaneously proves the precision and reliability of the methods for their use in routine practice. We used develop methods in our laboratory. We noticed the soils around NPP *"Kozloduy"* and *"Rodopa"* mountain present raise contents of plutonium isotopes. The paper deals the regularities for distribution of plutonium isotopes and their isotopes relation ^{238} Pu / $^{239+240}$ Pu in the hand of regions.

COST ACTION 869 - MITIGATION OPTIONS FOR NUTRIENTS REDUCTION IN SURFACE WATER AND GROUND WATERS

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ABSTRACT

The eutrophication of surface waters and the contamination of ground waters as a result of elevated nutrient inputs have a serious impact on ecosystem health in many countries. The EU water Framework Directive (WFD) requires an improvement to the quality of surface and ground waters; this may call for a drastic reduction in nutrient loss from agricultural and with the related

implications for the long – term economic and environmental sustainability of agricultural systems. The main objective of this COST Action is to undertaken as scientific evaluation of the suitability and cost – effectives of different options for reducing nutrient loss to surface and ground waters on the river basin scale, including their limitation in terms of applicability under different climatic, ecological and geographical conditions. Topics to be studied are:

- localization of critical source area of nutrient loss and transport routes in both surface and ground water catchments;
- identification of area where mitigation action are most likely to be effective at minimizing nutrient loss;
- temporal dinamycs of nutrient losses;
- the influence of nutrient on ecological processes in surface water and the role on ground water in controlling nutrient fluxes;

evaluation of existing or finished project on mitigation.

RESEARCHES CONCERNING BIOLOGICAL WEED CONTROL BY THE ECOLOGICAL TECHNOLOGIES

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ABSTRACT

In this paper are presented results of the research regarding biological weed control by performable technologies: adsorbtion on active charcoal of germination inhibitors of the weed seeds and using germination stimulators for its starting in the early cold season, killing the weeds by cold or by specific mechanical practices in the early growing season. This research had been realized both in the greenhouse and experimental plots in the field. This alternative system can be used for the weed biological control in the vegetable growing, medicinal plants, strawberry and wheat crops.

SANDY SOIL TILLAGE FOR CROPPING ZEA MAYS EVERTA PERLA 625 POP CORN CROP

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Agricultural Highschool **Dăbuleni**

ABSTRACT

The paper presents the tillage and soil management operations for the preparation of the sands soils in order to alleviate the soil erosion, reminisce of several pesticides for a healthy crop complying with the UE norms. The popcorn crop is seen as a cash loco crop.

POP CORN CROP ZEA MAYS EVERTA PERLAT 625 AS A BENEFIT SOURCE

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ABSTRACT

The paper presents the crop technology of the pop corn crop on the sands soil from the western part of Oltenia, its importance as a food crop, determination on expansion degree at different moistures and temperatures for the wide consumption capitalization.

PHASES OF VINE' S INCREASE AND DEVELOPMENT IN VIEW OF THE ELABORATION THE VITICULTURE FENOCALENDAR. METHOD EXPERIMENTAL

MARIAN NICOLAE*, ELENA NICOLAE*, ADRIAN DULUGEAC*
Biotera University, Bucharest

ABSTRACT

The researchs insided **in the Viticol Research Center of Drăgăşani, since the 1977**-1998 folowed up a sequencetial knowing of daily bioritm of the dried substance accumulationon the trunk which depends on thermal radiation (observations, remarks, determinantions, analyses: the ussualy temperature, the active temperature and the operative temperature) for the main fenophases, stades and the fenologichal microstades on a side and the elaboration techological viticol optimized fenocalendar(FTVO).

THE ROMANIAN EXPERIENCE IN THE IMPLEMENTATION OF EUROPEAN REGULATIONS REGARDING THE MANURE MANAGEMENT

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ABSTRACT

Most of the villages in Romania depend for their water supply on public and private shallow wells, the latter situated near the homesteads. Many villages lack sewage systems and waste water treatment facilities. While it is foreseen that on the long term villages will gradually be equipped with piped water and with sewage systems or individual waste water treatment facilities, most of them will continue to rely on shallow wells for their drinking water for years to come.
Due to the high concentration of animals within the borders of the village centres and poor practices for stabulation and manure storage, relatively large and unprotected quantities of manure are present within the village boundaries and pose a potential threat to groundwater and surface water quality, being a source of nitrate and other nutrients, and bacteria. This source of pollution adds to the nitrates and faecal bacteria coming from the widely used open pit latrines and to the organic and inorganic pollution by household waste water that is allowed to flow freely to surface waters or to infiltrate directly into the soil, thereby contaminating the water wells. Compost heaps of solid organic household waste form another potential source of pollution of ground and surface waters. Uncontrolled waste disposal sites or (former) animal complexes, situated in the vicinity of the village centres can also contribute to the pollution of the groundwater.
The European Community has taken measures concerning nitrogen pollution in waters for over twenty years. According to the Nitrate Directive (91/676/EEG), the Romanian soils and groundwater bodies need to be protected against nitrate pollution originating from agriculture. To design action plans for monitoring and protecting the soils and groundwater bodies, the Romanian territory have been subdivided in zones with equal potential vulnerability (Nitrate Vulnerable Zones or NVZ' s). Based on the assessed vulnerability, fertilisation norms have been introduced, and codes of good agricultural practice have been implemented, such as regulations related to nutrient balance, manure storage and spreading of manure (max. 170 kg $N_{organic}$/ha/yr).
This paper aims to present the progress made in the implementation of the Nitrate Directive in Romania before and after joining the European Union and the difficulties faced during this complex process.

CONSERVATION AGRICULTURE – THE MULTI-ADVANTAGE TECHNOLOGY

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ABSTRACT

For a long time agriculture was associated with plow. Probably the most profound negative effect of tillage worldwide has been and remains the loss of soil due to soil erosion by wind and water. But in the last years the agronomists recognized the problems associated with excessive tillage and attempted to develop systems that protected the soil resources. One of these systems is Conservation Agriculture which is generally characterized by reduced tillage (with zero tillage as a goal), retention of adequate amounts of crop residues on the soil surface (at least 30%) and introduction of more diversified and economically viable crops rotations. Since 1990 using long term trials CIMMYT has showed the advantages of Conservation Agriculture (CA) and together with their partners has helped the adoption of this save resources system. The benefits of conservation agriculture include better water infiltration and retention of moisture, reduced erosion, higher yields, increased soil organic matter, reduced CO_2 emissions, favorable conditions for the development of antagonists and predators and foster new ecological stability, saving in labor and machinery. Zero tillage shows great potential for use in biological control and integrated pest and diseases management. Innovative farmers who are looking for alternative production systems in order to save money and improve their productivity and their soils, are probably the ones who will adopt CA first. They will also be the ones to promote CA in their communities. We review some of the CA advantages and how CA practices can impact for long term the crop, soil, water conservation and farm economies.

STUDIES ON THE ENVIRONMENTAL HAZARDS IN DRINKING WATER EVALUATION FROM CARAS SEVERIN DISTRICT BY *ALLIUM SATIVUM* L.

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MIHAELA CORNEANU, GALLIA BUTNARU, A. LAZUREANU
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ABSTRACT

To evaluate the pollution and genotoxicity of drinking water in four villages from Caras Severin District (Gradinari, Comoraste, Brosteni, Ciudanovita).*Allium* test was used as bioassay.Meristematic tissues of plants generally show patherns of cytotoxic response similar with thase of embryogenic tissues of vertebrates.

Plants bioassays are most sensitive in detecting the environmental hazards in water and can serve as the first alert for their presence.

The drinking water was harvested directly from the fountains of the population from considered area.

As biological material were used four landraces of *Allium sativum* L.: Cenad (Tm),Faget (Tm),Piscul Nou (Dj),Sebis (Ar).

There were registred the differences in chromosomal aberrations percent in anaphase and telophase between different water type in comparison with control (distillated water) as well as between the four *Allium sativum* L. landraces.

RESEARCH CONCERNING THE CROP CONVERSION COEFFICIENTS OF THE CLASS A PAN EVAPORATION INTO WATER CONSUMPTION AT THE BEAN CROP

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ABSTRACT

The research has been carried out at the bean crop in irrigated regime and rain fed conditions on the reddish preluvosoil from the Research and Development Agricultural Station „ SIMNIC" . There were determined the bean crop water requirements through field water balance theory' s methods, the evaporation from Class A Pan evaporimeters, and the crop' s converting coefficients based on their definition - the ratio of water consumption/requirement of the crop to the Pan evaporation. The obtained coefficients are to be used in irrigation scheduling. Their average monthly values for the bean crop were: May – 0, 45; June – 0, 62; July – 0, 72; August – 0, 39.

RESEARCH CONCERNING THE POTENTIAL EVAPOTRANSPIRATION ESTIMATE USING THE THORNTHWAITE EQUATION AND THE BEAN CROP CORRECTION COEFFICIENTS

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ABSTRACT

The research has been carried out in irrigated and rainfed conditions on the reddish preluvosoil from the Research and Development Agricultural Station „ SIMNIC" at the bean crop.

There were estimated through the Thornthwaite method the monthly and daily reference evapotranspiration, and determined the monthly correction factors (K_C) into water consumption.

The average monthly values of the correction factors for the research period were: May - 0, 65; June - 0, 75; July - 0, 93; August – 0, 50.

The correction factors (k_c) estimated through the Thornthwaite method are to be used in the design methodology of the irrigation systems.

THE EFFECT OF STRUCTURE AND CROP ROTATION UNDER THE EROSION ON THE SLOPE ARABLE LEND

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ABSTRACT

This paper deals with the researches made in the frame of C.C.D.C.E.S. PERIENI concerning of the soil lost through erosion on different crop structure and crop rotation

In the middle of Europe, at 45° north latitude, there is some of the most important natural risk for human life, who can be remedied by improvements land measure. The natural risk named from modern genomic are: geomorphologic, hydrological and climatic. Erosion phenomena' s through their manifest mode, very different amplitude in time and space concordant with the natural conditions certify he fact that these make part of natural risk. Specifically cure for natural risk, like kind of land improvement works can be: geomorphologic natural risk – works and measure of erosion control, dike works; hydrological natural risk - works and measure of erosion control, dike works; high flood attenuated works and reservoirs; climatic natural risk – irrigation works; works and measure of erosion control.

Land improvement works, through measure and control works, bring the contribution through cure to all range of natural risk: the geomorphologic natural risk through attenuate sheet and gully erosion; the hydrologic natural risk through decrease the high flood level of rivers; the climatic natural risk through attenuate the runoff and implicit through retention and better reclaim of rainfall.

Like measure for prevent and control of soil erosion it was studied, in the frame of C.C.D.C.E.S. Perieni, and are presented the effect of structure and crop rotation under erosion.

An adequate agricultural practice on slope land is conditioned from crop system structure and crops rotation. The establishing of sort of crops on slope land must be made in depended from tow criteria: soil protection and crop level.

The erosion effectiveness of crop systems, on slope land, is conditioned by range of slope value.

A proper cultivation structure mixed with erosion crop system reduced erosion and sediment effluence with 20%;

Through land improvement measure are better capitalize water from rainfall, the runoff are reduced with 11 – 30%.

SOME MICROMORPHOLOGICAL AND MINERALOGICAL CHARACTERISTICS OF THE CHERNOZEM FROM CARACAL

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ABSTRACT

The physical and chemical characteristics of soils favor the adsorption of some pollutants arising from different chemical fertilizers applied to soil, due to the quality and quantity of clay and organic matter.

This paper emphasized some micromorphological and mineralogical characteristics of the Chernozem from Caracal, either at microscopic or macroscopic level. The results showed a clay content of 21% in the upper horizon (0-28cm) and 37,6% in the lower horizon (28-56cm), of maximum development of the plant roots. The organic matter is high either in the top soil (3,28%) or deeper (3,04%) in the soil (28-56cm). This represents a high quantity of plasmic material, organized, at microscopic level in intertextic (in 0-28cm) and intertextic-porphyropeptic (in 28-56cm) elementary fabric. Despite of the fact that clay mineralogical composition is dominated by illite, it can be observed an increase trend of the illite/smectite ratio in the surface horizon, showed by the in-schelsepic plasmic fabric and the clayey-humic coatings, which appears sporadically on the pores of the deeper horizon (28-56cm). The micromorphology and mineralogy of the studied soil induced its specific physical and chemical characteristics. This paper was financed by the Ministry of Education, Research and Youth by the National Management Program Center in the Project " PENSOL" , no. 52-149/ 01.10.2008.

THE INFLUENCE OF SEVERAL NITROGEN DOSES ON CONSTANT PHOSPHORUS BACKGROUND OVER THE THE CORN YIELD IN IRRIGATION CONDITION AND DIFFERENT TILLAGE

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ABSTRACT

The paper presents the results obtained with the grain corn crop in irrigation condition and different tillage and under the influence of several nitrogen doses on constant phosphorus background.

The grain corn crop gives constant and high yields when irrigated during the growing period yet when fertilized. Such way, the yields were as follows:

- with the basis tillage by chisel at 22-25 cm depth there were recorded yields of 5,538 – 11,127 kg/ha in function of the fertilization level;
- with the normal plow at 22-25 cm there were obtained yields of 4,510 – 10,243 kg/ha;
- with the shallow tillage by chisel at 8-10 cm has given close yields to plow of 4,620-10,457 kg/ha.

ASPECTS ON THE CAUSES OF THE PH VARIATIONS ON A REDDISH PRELUVOSOIL UNDER THE INFLUENCE OF CHEMICAL FERTILIZERS

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ABSTRACT

During four years, under a wheat and corn crops, in rotation there were applied nitrogen fertilizers – urea, ammonium nitrate and nitrocalcar (with the same nitrogen dose), phosphorus fertilizers – simple superphosphate and potassium fertilizers – KCl. At the end of the experiment there was noticed a decrease of the soil pH by 2-9%. It is due to the soil and clime conditions and the fertilizers. There is given a comprehensive explanation of the phenomena.

INFLUENCE OF SOIL USAGE AND SOIL TILLAGE SYSTEM ON SOIL PROPERTIES

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ABSTRACT

The purpose of this paper is to evaluate the soil properties of arable and grassland usage follow then the changes of classic soil tillage systems versus three minimum soil tillage variants in the pedoclimatic conditions from Cluj-Napoca.

The soil features are in relatively balance estate with the environment, but, the agricultural working of the fields influences the evolution pattern, soil fertility or soil degradation. The present paper presents the evolution of haplic luvisols vertic in its 40 years (1960-2000) use as arable soil (with conventional working system), in comparison with its profile in hay field use, within the same ecologically homogenous terrain. The changes observed on the arable field, compared with those observed in hay field, are: morphological differentiation of soil profile, profound texture differentiation (the texture differentiation index increase from 1.12 to 1.2), structural hydro stability decrease from 69.7-85% to 58.6-63.3% on 0-30 cm depth, decrease of humus reserve from 151 t/ha to 134 t/ha (0-50 cm), increase of soil compaction and increase of pseudo-gleization phenomena in A/Bw horizon.

The researches follow then the changes of arable soil properties by a 5 years application (2001-2005) of 4 working systems of soil (conventional, paraplow, chisel plow and rotary harrow). The appliance of minimum tillage systems determine an increasing of the humus content and an increasing of the hydro stabile aggregates content with 4.7-13.6% on 0-30 cm depth towards the classical system. Minimum tillage, with or without straw, resulted in enhanced soil moisture conservation and moisture availability during crop growth. Availability of soil moisture during the crop growth resulted in better plant water status.

VARIABILITY OF SOME SOIL PROPERTIES RELATED TO SOIL CONSERVATION FOR A SWELL-SHRINK SOIL FROM SOUTHERN ROMANIA

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ABSTRACT

The spatial variability of the eco-systems changes with modification of one or more pedo-genetic factors. In soil survey, the homogeneity of soil mapping units is essential for high-quality delimitation. This study has the objective of showing the spatial micro-variability of some soil properties like particle-size distribution fractions, i.e. the fine sand content and clay content, as well as the humus content, for a swell-shrink soil of southern Romania and to find the soil geo-statistical characteristics. For this study a 3-m square-shaped soil profile was performed to a 2-m depth. Measurements were taken on transects in a systematic manner in four directions represented by the square sizes. So, soil samples were collected from each soil horizon from the four transects. Six vertical sampling sections per square side were carried out. Each sampling section was spaced 50 cm apart along each square side. The depths were the followings: 0-10; 20-30; 35-45; 80-90; 95-105; 115-125; 135-145; 165-175; 185-195 cm. Semi-variograms and autocorrelation coefficients were calculated for each depth and showed. From the genetic view point this vertisol still seems to be active. The depth of each soil horizon and the other soil properties studied are variable along transects, while the coefficient of variation (CV) presents values that are lower than 15% for both the fine sand content and clay content. However, the humus content shows superior CV values. In the semivariograms the range was found to be approximately 100 – 150 cm for the particle size distribution fractions for some depths, and the semivariance was as a white noise for others. In order to show the spatial variation of the soil properties at various depths, the kriging method has been used, Surfer Program. Based on both statistical and geostatistical approach of each soil depth, the paper discusses the specific features of the vertisol studied related to the conservation of soil resources in the Getical Plateau and central part of the Danube Plain in southern Romania.

THE INTEGRATED MONITORING OF JIU RIVER-THE PRINCIPLES AND WAYS TO MADE

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ABSTRACT

The monitoring activity is an important target of integrated waters management. Water quality assessment became today an important tool of temporally and spatial evaluation, regarding tendencies of pollutants concentrations and for a chemical substances water budget.

All this things are important for accidentally pollution prevent in rivers, for local communities and for water ecosystems.

THE INFLUENCE OF SURFACE MINING FROM HUSNICIOARA ON THE ENVIRONMENT

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ABSTRACT

The paper presents the pedological and agrochemical features of the sterile dump Husnicioara, District Mehedinti that has a surface of 190 ha. There are presented the polluting effects of the sterile dump Husnicioara on the environment.

NEW RESULTS REGARDING THE NO-TILLAGE SYSTEM APPLIED TO WINTER BARLEY CULTIVATED IN THE FLOOD PLAIN OF THE DANUBE RIVER

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ABSTRACT

During the ages, the superior plants from the spontaneous flora (savage form) of wheat, barley, maize, etc. grew on **land that had never been ploughed**. Man invented various tools to labour the land before and after sowing, for two main reasons: to fight the weeds which are big water and nutrients consumers and to be able to incorporate the organic and mineral fertilizers. Plant cultivation **without ploughing** the land is and idea that belongs to the Americans and the English and dates back in the 1930s. In England, many farmers use the no-tillage system and apply it in the following way: they treat meadows with Gramoxone and then in autumn they sow wheat or barley in unploughed land, using special seeders for this purpose, of course. In Romania, the first experiments with winter wheat cultivated in unploughed land, after maize, were made at the Prodagra Agricultural Company, Arad County, in the years 1999-2001, by Andrei Ion and **Şarpe Nicolae (2004), the 3**-year average yield recorded being 4320 kg /ha in the no-tillage system. The experiments with winter barley cultivated in the no-tillage were continued by Nicolae **Şarpe (2004) at the Agrofam**-Holding Frete**ti, Ialomia County, in the specific conditions of the** Flood Plain of the Danube River, the yield recorded being 4830 kg/ha in the conventional system and respectively 4840 kg/ha in the no-tillage system, in which the crop was sowed by a Gaspardo Gigante 900 sowing machine.

THE REMANENT EFFECT OF THE MERLIN DUO AND GARDORPRIM PLUS GOLD 500 SC HERBICIDES APPLIED TO SUNFLOWER CROPS

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ABSTRACT

The remanent effect of herbicides was studied by many foreign researchers: Hurle 1980, Hime and coll. 1991, Wuerzer 1985. In Romania, the largest number of experiments regarding the remanent effect of herbicides based on atrazin and simazin upon various crops have been made by dr. **arpe and his collaborators. During the past 10 years, studies have b**een also made regarding the remanent effect of dicamba and 2,4-D herbicides upon various crops, namely maize,

sunflower, sugar beet and flax for linseed and linen. The experiments regarding the remanent effect of Merlin Duo and Gardoprim Plus Gold 500 SC are the first ones of this type and unique in Romania - being carried out in the Flood Plain of the Danube river. In the years 2007-2008, experiments were performed at the Agrofam-Holding Agricultural Company from Fetesti, Ialomita County, situated in an area with alluvionary-type soil specific to the aforementioned Flood Plain, the aim being to study the remanent effect of the herbicides Merlin Duo, which contains 37,5 g/litre isoxaflutol + 375 g/litre terbuthylazin, Gardoprim Plus Gold 500 SC, which contains 312,5 g/litre S – metalochlor + 187,5 g /litre terbuthylazin. The Merlin Duo herbicide was applied in doses of 3 and 6 liters per hectare, and the Gardoprim Plus Gold 500 SC was applied in doses of 5 and 10 litres per hectare. Both herbicides were applied in July, after the wheat was harvested. After apllication, the herbicides were incorporated by disking 15-18 cm deep into the ground. In the spring of 2008, before sunflower was sowed, the land was laboured 10 cm deep by the disk and the combinator. Based on the observations made every month during the vegetation stage and on the yield obtained, the authors have reached the conclusion that the Merlin Duo and Gardoprim Plus Gold 500 SC did not present any remanent effects on the alluvial soil from the Flood Plain of the Danube river.

NITRATES VULNERABLE ZONES IN JIU RIVER BASIN

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Directia Apelor Jiu Craiova

ABSTRACT

The goal of Nitrates Directive, adopted by the European Union in 1991, purpose to reduce water pollution caused by nitrogen from agricultural sources and to prevent such pollution in the future.
The Nitrates Directive impose to member states to identify waters which are or could become polluted by nitrates and to designate as Nitrate Vulnerable Zones (NVZs) all land draining to those waters and contributing to the pollution.
In the Nitrate Vulnerable Zones, farmers must implement an action programme of measures which include restricting the timing and application of fertilizers and manure, and keeping accurate records.

PHSICAL PROPERTIES OF SOME PSAMOSOLS FROM DABULENIULUI PLAIN

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ABSTRACT

Aeolian sands ocupies large areas in Dabuleniului Plain, starting with the alluvial plains and up to the field, and form a cover with various thickness, major near the Danube, on the lower teraces and on the western part of the plain (20-25 m) and decreasing to North and East, while the distance to the source (Danube and Jiu meadows) is increasing and the influence of the prevalent winds diminished. Eutric and molic Psamosols are developed on the left part of the Jiu River, in areas occupied by sands and dunes (between localities Caciulatesti, Sadova, Piscu Sadovei) and are associated with preluvosols and mobile sands. Molic Psamosols often apear in depresionary areas (interdune), while eutric Psamosols occupy the dunes and are associated with eutric Regosols and mobile sands. The texture is coarse sandy silt or coarser, with a big content of aeolian coarse sand (44.2-71.9 %), which influences the values of the soil physical properties (bulk density, total porosity, permeability, penetration resistance).

SECȚIUNEA 3: DISCIPLINE FUNDAMENTALE ŞI PROTECȚIA PLANTELOR ŞI A MEDIULUI

Genetică şi Ameliorarea plantelor, Botanică, Fiziologie vegetală, Biochimie, Fitopatologie, Entomologie, Microbiologie, Silvicultură, Ecologia şi protecția mediului

WORKING GROUP 3: FUNDAMENTALLY DISCIPLINES AND ENVIRONMENT AND PLANT MANAGEMENT

Genetics and Plant Breeding, Botany, Physiology, Biochemistry, Phytopatology, Entomology, Microbiology, Forestry Sciences, Ecology and Environment Protection

NEW ALIEN PLANTS SPECIES IN ROMANIA

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ABSTRACT

As a result of field studies done in the last years on alien plants species in Romania, we discovered new species for our flora. *Senecio inaequidens*, a perennial Asteraceae from South Africa, have been **recorded in 2004, on railways from Bucureşti Triaj.** *Bromus madritensis* and *Bromus willdenowii* are annual Poaceae from Southern Europe. The first has been recorded in **ruderal places from Constanța Harbour (2004) and railways from Bucureşti Triaj, while the** second **have been recorded only in ruderal places from Constanța Harbour (2004).**

REGARDING ON GRASSLANDS BETWEEN SĀRĀȚELULUI VALLEY AND SLĀNICULUI VALLEY, BUZĀU COUNTY

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ABSTRACT

The main aim of our researches was the inventory of plants diversity of grasslands between **Sārāțelului Valley and Slānicului Valley, Buzāu County, the identification of habitats and plant** species of community and national interest, as well as the main threats for these. The researches were done in frame of CEEX NARDUS project. In searched area we identified two habitats of community interest: Pannonic salt-steppes and salt-marshes (1530*) and Ponto-Sarmatic steppes (62C0*). The first habitat occupies limited surfaces near mud volcanoes from Pâclele Mari and Pâclele Mici, as well as to SW of Beciu village. Instead, the second habitat occupies wide surfaces in this area, dominated by vegetal associations from *Stipion lessingianae* alliance. We have to **mention these surfaces are mainly outside of the SCI „Vulcanii Noroioşi de la Pâclele Mari şi** Pâclele Mici" . The researched grasslands shelter three plant species of community interest: *Crambe tataria*, *Echium russicum* and *Iris aphylla* subsp. *hungarica*. The last two have not been included in standard list of the mentioned SCI, even they are present in this area and have been reported previously by Ciocârlan (1968) and Mititelu et al. (1980). Among species of national

interest mentioned in OUG 57/2007 we identified in researched area only *Nitraria schoberi*. We also ideHDFHntified in these grasslands some orchids not reported previously from this area: *Epipactis helleborine*, *Gymnadenia conopsea*, *Listera ovata*, *Orchis coriophora*, *Orchis ustulata* and *Ophrys scolopax*. Among threats with high negative impact we can mention the overgrazing and the presence of invasive plant *Elaeagnus angustifolia*. Taking into account the high plants diversity of these grasslands and the number of rare elements, we propose to extend the protected area from Pâclele Mari and Mici to al**l area between Sărățelului Valley and Slănicului Valley.**

REASEARCH REGARDING THE STUDY AND EVALUATION OF SEVERAL VARIETIES OF HOT PEPPER

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ABSTRACT

Hot pepper (Capsicum annuum L. spp. annuum, conv. microcarpum Filov) has a widespread use, both as spice in food industry and as counterirritant in treating rheumatism. Latest research in the pharmaceutical industry indicates that capsaicin activates the metabolism and increases body immunity.

We have studied 8 varieties of hot pepper of different origins by correlating several plant and fruit morphological characters and the different capacity of production.

V1 – the control is the De Cayenne variety from ZORZI Italy. The plant has a 50-60 cm length, the average fruit weigh is 3.4 g. The potential production is 1.05 kg/mp.

V2 – from Isalnita, Dolj has a 50-60 cm length, dark green at technical maturity and red at physiological maturity fruits and an average fruit weigh of 11.1 g. The potential production is 2.12 kg/mp.

V3 – from Almaj, Dolj has a 50-60 cm length, light green at technical maturity and red at physiological maturity fruits and an average fruit weigh of 8.8 g. The potential production is 2.11 kg/mp.

V4 – from Corabia, Olt has a 40-50 cm length, yellow at technical maturity and red at physiological maturity fruits and an average fruit weigh of 9.0 g. The potential production is 2.04 kg/mp.

V5 – Seven Brothers, the bush is compact, spread from the base, with cluster fructification. The fruits are small, very spicy, erectly set on the plant, dark green at technical maturity and red at physiological maturity. The average fruit weigh is 2.8 g. The potential production is 1.44 kg/mp.

V6 – SCDL 1 is the result of a hybrid population selection. The plant is spread and 45-55 cm in length. The fruits are small, very spicy, erectly set on the plant, light green at technical maturity and orange at physiological maturity. The average fruit weigh is 2.9 g. The potential production is 1.51 kg/mp.

V7 – SCDL 2 is the result of a hybrid population selection. The plant is spread and 45-55 cm in length. The fruits are small, very spicy, erectly set on the plant, yellow at technical maturity and orange at physiological maturity. The average fruit weigh is 3.1 g. The potential production is 1.2 kg/mp.

V7 – from Italy. The plant is 45-55 cm in length, the fruits are small, bell shaped, spicy, erectly set on the plant, dark green at technical maturity and dark red at physiological maturity. The average fruit weigh is 9.9 g. The potential production is 1.25 kg/mp.

IMPORTANT GENOMIC FEATURES WITH FEW INBRED CORN LINES

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ABSTRACT

The phenotypical variability of inbred lines can be interpreted as basis factor in the achieving of a high heterosis with the hybrids that are those inbred lines included in. The inbred lines are characterized by the presence of less developed plants, shorter, with a lower yielding capacity, reduced growing rithm, lower adapting capacity as a result of inbreeding process. By inbreeding is not always produced the degeneration yet the segregation and expression of the negative or unfavorable genes. In such conditions the selection become more difficult. Our research has identified the way these characters can be avoided.

RESEARCH PAPER REGARDING HUNGARIAN OAK AND TURKEY OAK GROWTH AND EVOLUTION WITHIN BRUSHES LOCATED IN THE WESTERN PART OF THE GETIC PLATEAU

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ABSTRACT

The ecosystems with Hungarian oak and Turkey oak formed stable structures along time, but they have been seriously influenced since 1989 until 1994 by the long drought which was followed by massive drying.

The intensity of the drying phenomenon has manifested differently for the two species, being more intense for the Hungarian oak brush with different ages.

The drying effect manifested while regeneration works were being applied in different stages to the exploitable brushes. Due to the extraction of the dried trees from this brush, a disturbance of the normal course of works and, implicitly, of the regenerations, took place.

The territory chosen for the research is located in Oltenia and it comprises the Motru Hills, the Jiu Hills, the Gilort and Amaradia Hills, the northern area of the B**ălăcița Plateau, the north**-eastern area part of the Segarcea Plain, the north-western part of the Leu-Rotunda Field, geomorphologic units that can be found in the Jiu area.

The research aimed at determining the growth of the Hungarian oak and Turkey oak brush under various heat and light conditions, in order to determine brushes that have reached exploitation age to break open.

Some conclusions arise from this research and they are related to the manner in which annual and stage height growth for the Hungarian oak and Turkey oak brush take place during a vegetation season, the differences in growth between the seedling of the same species, some resulted from acorn and some resulted from sprouts, the influencing factors for Hungarian oak and Turkey oak differentiate growth, diameter growth and root growth, technical measurement essential for assuring regeneration of the two species.

RESEARCH REGARDING HUNGARIAN OAK AND TURKEY OAK RESISTANCE TO SHADE

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ABSTRACT

During the long draught between 1988 and 1993, period followed by Hungarian oak and Turkey oak brush massive drying, we could observe the reaction of the two species and also that they had different ways of adapting to and facing the harsh conditions.
Within the populated areas, the preservation of the Hungarian oak and Turkey oak natural capacity for regeneration also manifested through the resistance to shade of seedling installed at the base of the mountain.
The evolution of the two species is not the same, the Hungarian oak installing naturally and enduring at the base of the mountain for a longer period of time, while the Turkey oak preserves its ability to fructify normally even under drought conditions.

The research was located in Jiu river area, enclosing from high hills at the base of the mountain through forest steppe, within all Hungarian and Turkey oak forest types.

The research aimed at determining the ecological factors crucial for the Hungarian and Turkey oak seedlings installation and maintenance within brushes at the base of the mountain, but also determining the physiological processes and their manifestation in seedlings. Some of the research most important findings are stated below:

- Hungarian and Turkey oak seedling easily install in brushes under 0.8 consistency and maintain at the base of the mountain for a period of 3-4 years;
- Hungarian oak seedlings form a secondary level within the pure Hungarian oak brushes, made up by the samples that can endure shade, having the appear of a bush, as a result of its adaptation to harsh vegetation conditions, determined by low rainfall, high temperatures and also heavy soils, which maintains for a long time by self cutting back.
- The installing of the pre-existent seedlings level having the aspect of a bush takes place for the Hungarian oak brushes aged over 40, able to fructify, which, due to several reasons, have a consistency reduced to less than 0.8.

THE AGRONOMIC PERFORMANCES DETERMINATION TO SOME SUNFLOWER (HELIANTHUS ANNUUS L.) HYBRIDS

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ABSTRACT

The sunflower is a distinctive, flowering plant, the seeds of which contain valuable edible oil that contains more Vitamin E than any other vegetable oil. Most sunflower oil is used in food products.

Therefore, this study was initiated to evaluate the agronomic performances of some commercially available oilseed sunflower hybrids, and to determine the genotypic variability among the genotypes under Oltenia ecological conditions. A field study was conducted on the Banu-Maracine Research Station during the 2004 and 2007 years. In this study, 5 sunflower Romanian hybrids, in the presence of a control hybrid (namely Favorit) were used. The results showed that the genotypes differed significantly in all the characteristics investigated. Similarly, ecological conditions had a significant influence on the agronomic parameters of the genotypes.

The present paper suggests that higher seed yields may be achieved through the use of hybrid genotypes under the region' s conditions. Based on these 4 years' data, it can be concluded that Performer and Saturn sunflower genotypes with their higher seed and oil yield could be successfully grown under Oltenia region.

THE GENETIC YIELDING POTENTIAL TO SOME SUNFLOWER HYBRIDS CULTIVATED IN OLTENIA REGION

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ABSTRACT

In order to establish the most productive genotypes that can be cultivated successfully in the Oltenia region, it was investigated the behavior of 5 foreign hybrids, together with a Romanian control, under the aspect of variability of the genetic yielding potential and some fructification traits.

The Flavia foreign sunflower hybrid have demonstrated an excellent adaptability to plantation and environmental conditions of the experimental area, and thus it is recommended to be expended into production in association with Romanians hybrids, in order to achieve a genetic diversity which should suppose great and constant yield of seed and oil per area unit

The best results have been obtained by the Barolo sunflower hybrid too, these being able to be extended in culture and, eventually, introduced in the programme of improving the sunflower as valuable producers. The achievement of a genetic diversity by cultivating more hybrids with different reactions at the conditions of environment, with different precocity, constitutes the simplest and the most secure way of reduction of the fluctuation of the production of the sunflower.

THE STUDY OF PHYSIOLOGICAL AND BIOCHEMICAL PROCESSES WHICH HAPPEN IN NARCISSUS PSEUDONARCISSUS PLANTS ALONG THE GROWTH AND DEVELOPMENT

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ABSTRACT

The researches about the characteristics of physiological and biochemical processes which happen in Narcissus pseudonarcissus plants they was effectuated within greenhouses from RAADPFL Craiova, using current technology for Narcissus crop in greenhouses.

The intensity of photosynthesis process of plants it was affected by development phase of plant, so also by leaves age.

From data synthetized it cans see that it has recorded increases of content in chlorophyllian pigments from leaves until final flowering period, when it has effectuated the last determination.

The proportion between the two chlorophylles (a and b) it presented very little differences between determined values in the two plants development phase.

The intensity of transpiration process it is mainly affected by three factors: leaf maturing degree, atmospheric humidity and surrounding environment temperature.

The total dry substances from Narcissus leaves it increase from the vegetative phase to the total flowering phase with approximately two percents, concomitantly modifying also the value of proportion between dry substance and soluble glucids.

PHYSIOLOGICAL AND BIOCHEMICAL MODIFICATIONS PRODUCED BY ALTERNARIA HELIANTHI FUNGI ON SUNFLOWER PLANTS

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ABSTRACT

Within the framework of experiments we follow the reaction of FLOROM 350 sunflower simple hybrid to the infestation of Alternaria helianhi phatogen fungi, pointed out in all European

countries and which produce important damages especially in the years of precipitation rich summery control system. The examination method it consists of the comparative determination of physiological processes activities and biochemical parameters to infested and healthy plants, grown in identical conditions.
Analyzing comparatively the photosynthesis process on healthy plants and on infected plants by Alternaria helianhi phatogen fungi, it has been ascertained that one significant decrease of process on the infested plants, this one coming to represent 63% from the value of the photosynthesis intensity of healthy plants.

As a result of respiration process study on the infected plants, it follows that this one is strongly increased, the biggest value recording in blooming moment.

The total quantity of assimilator pigments from leaves it decreased values on infected plants by fungi, in the same time modifying also the rapport between green and yellow pigments, also the rapport between a and b chlorophyll. The content of calcium and magnesium elements us an increasing of their quantity on the infected leaves level, because the intensifying of the catabolic processes under the mycelium fungi influence.

EFFECT OF OSMOTIC STRESS ON LEAF AREA AND CLOROPHYLL CONTENT OF SOME BEAN (Phaseolus vulgaris L.) LOCAL LANDRACES FROM BANAT AREA

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ABSTRACT

In our experiment we study the salt stress tolerance of 6 bean (Phaseolus vulgaris L.) local land races. The osmotic stress was induced by using salt solution: 106,70 kPa, 320,11 kPa, 512,18 kPa. We measured the followed physiological index: leaf area and chlorophyll content.

The increase of NaCl concentrations produced a decrease of chlorophyll a and b concentrations. Stress condition led to growth reduction as shown by fresh weight, dry weight and leaf area (LA).

The experimental results showed value between 5,474 mg/g f.w. and 7,738 mg/g f.w. for chlorophyll content and 512,18 kPa when osmotic stress was induced by using of 512,18 kPa salt solution.

EVALUATION OF GENOTIP X ENVIRONMENT INTERACTION ON SOME YIELD COMPONENTS IN WINTER WHEAT

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ABSTRACT

Plant breeders invariably encounter genotype x environment interaction (GEI) when testing different cultivars across a number of environments. An ideal wheat variety should have a high mean yield combined with a low degree of fluctuation under different environments. The objective of this study was to evaluate the stability of some yield components for 21 winter wheat cultivars through different statistical models to analyze and partitioning of the genotype-by-environment interaction.

Fundulea 4, Boema, Alex, and Turda 95 cultivars presented low genotype x environment interaction associated with values of spike grain number superior to the experience mean. In the same time Turda 2000, Dropia, Dor, and Greti cultivars attained values of grain number/spike inferior to

the experience mean associated with a high stability. Values of the thousand grain weight superior to the experience mean associated with a high stability were observed for **Arieşan, Lovrin 34, Turda** 2000, GKOthalom.

GENETIC IMPROVEMENT OF SOYBEAN RESISTANCE TO BIOTIC STRESS THROUGH MUTATIONS

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ABSTRACT

Soybeans are susceptible to many species of fungi and bacteria in the seed and seedling stage. Root rots and seedling blights of soybeans are generally worse when soybeans are planted under cool, wet conditions. The species of fungi responsible for disease in a soybean field depends on several factors: species complex present, temperature and moisture conditions and the genetics of the soybean variety

Under the consideration of creation of mutant soybeans initial materials tolerant to *Fusarium infections*, we have studied in the field condition the reaction to this infections of 6 soybean genotypes: Kizelniska, KOO3, Ki237xKOO3, Glia, Mida and Alina, the dry seeds of which were **treated with γ radi**ation on RXM- **γ**-20 installation with ^{60}Co radiation source. Seeds were treated with 10 Gy, 30 Gy and 50 Gy doses. The dose debit consisted 0, 67 Gy/s.

Mutational analysis of important crop characters (tolerance to abiotic stresses, resistance to diseases and insects, quality and nutritional characters, etc.) demonstrated the modification of the **response reaction of the soybean genotypes under the γ radiation treatment to** *Fusarium* diseases **attack. In general under the influence of all used doses of γ** radiation treatment all genotypes manifested higher resistance to *Fusarium* root rots by 9, 52 % and to seedling blights by 5, 75 %. Simultaneously, the specific reaction in the function of genotype has been elucidated. Varieties Glia and Mida manifested higher sus**ceptibility to γ radiation treatment. So, under γ radiation** treatment (30 Gy and 50 Gy) the intensity of rots root and seedling blights development of Glia variety decreased by 25,5 % and 18,5 %, respectively and by 22,5% and 16,5 %, respectively, at Mida variety.

THE RELATIVE SPECIFICITY AND SENSITIVITY OF THE METODS USED FOR DETECTION *CLAVIBACTER MICHIGANENSIS* SSP. SEPEDONICUS ON POTATO TUBERS

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ABSTRACT

Clavibacter michiganensis ssp. *sepedonicus* is the causal agent of ring rot in potato, a disease listed as a quarantine pest by EPPO. Starting with 2003 several surveys were made to establish the presence/absence of this quarantine organism in Romania. A monitoring program was elaborated in accordance with the EU legislation (93/85) and concerned both the national potatoes production and the imported potatoes. As a result of these surveys an outbreak of ring rot on seed potatoes was detected for the first time in Romania, in Brasov County, in 2004.

The tests used for detection of the quarantine bacteria *Clavibacter michiganensis* ssp. *sepedonicus* are those recommended by the Ministry Order no.387/2007. The aims of the study were optimize and to establish the relative specificity and sensitivity of the screening tests (IF) and confirmation tests (PCR- Polimeraze Chain Reaction). Sensitivities of the methods are below 10^4

cells/ mL - 10^1 cells/ mL, and regarding their specificity and easiness of use there are some differences.

REAL-TIME PCR FOR DETECTION OF *CLAVIBACTER MICHIGANENSIS* SSP. *SEPEDONICUS* AND *RALSTONIA SOLANACEARUM* ON POTATO TUBERS

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ABSTRACT

Clavibacter michiganensis ssp. *sepedonicus* and Ralstonia solanacearum are two quarantine organisms difficult to detect in symptomless tubers. The only reliable control for these diseases caused by these bacteria is avoidance and clean seed potato. The aim of the study was to establish that Real-Time PCR test has a high sensitivity, higher than the routine immunofluorescence test, is a fast method that permits results in a few hours and it has the advantage to be a close system that limits the possibility of contamination. The protocols need to be optimized for routine use.

F1 TOMATO HYBRIDS FROM SCDL ISALNITA DOLJ

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ABSTRACT

Between 1965 and 1980 several amelioration processes were implemented at SCDL Isalnita in order to obtain greenhouse, polytunnel and field growing F1 tomato hybrids that would satisfy productivity, quality and natural tolerance to nematodes and TMV demands.

Wild species of *Lycopersicon*, world-wide and native varieties and hybrids that were easily accessible and highly variable were used in the amelioration processes.

Classic amelioration methods such as interspecific and intraspecific hybridisation, genealogical selection, backcross hybridisation and self-fertilization were used.

The experiments took place in greenhouses, polytunnels and in the field, following specific guidelines.

The germoplasm collection was diversified, thus obtaining a valuable initial amelioration material. The new genitor lines were used to obtain 700 hybrid combinations that were later studied in " F1 Hybrids Field" . By rigorous selection of the biological material, 36 new F1 hybrids were recommend to be studied in C.C.C., at C.S.I.O.S. the following F1 hybrids were homologated: Oltbrid (1975), Craiobrid (1976), Isabrid (1977), Isalnita 50 (IH-50) (1984), Ioana (IH-29) (1988), Doljbrid (Rada) (2002). The Cris 1 hybrid is in its second year of trial at I.S.T.I.S. the new biotypes were characterized by: natural tolerance to nematodes, TMV, verticilliosis, precocity, productivity and superior fruit quality.

RESEARCHES IN VEGETAL BIOTECHNOLOGY: THE USE OF MAGNETIC FLUIDS

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ABSTRACT

The first paper regarding the magnetic fluids use in biotechnology was performed at Craiova University, presented at the *Sixth International Conference on Magnetic Fluids* (Paris, 1992), and print in the book volume of this Conference (Butnaru Gallea, Corneanu Mihaela, 1992 - *Somatic embryogenesis and plant regeneration in tissue culture in medium with magnetic liquids*, 6-th ICMF, Paris, Abstracts Book: 478-479). From this begin, specialists from Romania and other countries, elaborated, presented and printing their research results in this new scientific domain. In Romania, the researches were developed at Craiova, Timisoara, Iasi, Pitesti, Bucuresti, Cluj-Napoca, Oradea or Constanta. The collective from Craiova University, used the magnetic fluids prepared at Polytechnic University from Timisoara (Vekas Ladislau, Bica Doina, Minea Romulus and Gabor Lazar), or at Polytechnic University from Iasi (Cotae Constantin and Calugaru Gheorghe). The researches results were presented at prestigious international manifestations and printed in their volumes: *Seventh International Conference on Magnetic Fluids* (ICMF) from Bhavnagar, India (1995); *Recent Advances in Plant Biotechnology*, Nitra, Slovak Republic (1995); *Propagation of Decorative Plant – II*, Sofia, Bulgaria (1996); *Eight ICMF*, Timisoara, Romania (1998); *Propagation of Ornamental Plants - III*, Sofia (1998); *Plant Biotechnology as a Tool for the Exploitation of Mountain Lands*, Torino, Italia (1998); *Inginerie Genetica si Biotehnologii*, Chisinau, Republica Moldova (1998); *Peroxidases' 99* Columbus, Ohio, USA (1999); *Propagation of Ornamental Plants – IV*, Sofia (2000); *Peroxidases 2002* (Murcia, Espana (2002); *5-th POP*, Sofia (2007); the *ESNA Annual Meeting* (1992-2008), as well as at different scientific manifestation from Romania. Our researches established as the magnetic fluids effect are depending on genotype, the carrier liquid, the ratio between Fe^{2+} / Fe^{3+}, the orientation or not of the magnetite particles in a magnetic field, a/o. Supplementation of the culture media with a particular magnetic fluid, accelerate the organogenesis processes, supplied the classic phytohormone, confer a resistance at different stress factors, induced the rejuvenilization of the vitrocultures, a/o. The scientific priorities of our collective in this new domain of vegetal biotechnology, were pointed out by different specialists in different publications: E.B. Herman (*Agricell Reports*, 1995, 1998 and 2007), Y.P.S. Bajaj (*High-Tech and Micropropagation*, Springer-Vlg., 1997); Diwakar Aggarwall (Doctoral Thesis, 2003); P. Giusti et al. (*Scientia Horticulturae*, 2002); J.A. Teixeira Da Silva (*Propagation of Ornamental Plant*, 1993; *Biotechnological Advances*, 2003; *Plant Cell, Tissue and Organ Culture*, 2004); M. Vekheva et al. (*Plant Cell, Tissue and Organ Culture*, 2005), a/o.

STUDIES ON THE FLOWER AND LEAVES VARIABILITY IN ROBINIA PSEUDOACACIA GENOTYPES OF SOUTH OLTENIA

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ABSTRACT

Recently, the interest for Robinia pseudoacacia has increased, for the afforestation of abandoned cultivated lands based on an E.U. regulation, as well as for the melliferous qualities – black locust honey being a superior quality one, very appreciated by the consumers. However, in Central (e.g. Hungary) and Eastern (e.g. Romania, Bulgaria) Europe several high-yielding varieties (e.g. var. oltenica) of the species with high quality wood have been selected and cultivated. Studies on Robinia pseudoacacia genotypes make easier the selection of the valuable clones for quality

wood production, in order to establish plantations on sandy and/or degraded soils in South Romania.

Were analysed 13 descendants of R. pseudoacacia var. oltenica, 2 descendants of **selected plus trees, in comparison with common black locust, belonging to orchard Argineşti, Mehedinți and mother descendents cultivated in Didactical and Experimental Station (DES), belonging to the University, Timişoara. There were analized the biom**etrical features of the leaves and flowers, as well as the meiosis process. There are significant differences between the analysed genotypes regarding rectitude, growth rhythm, leaflet and flower morphology, meiosis and embryo viability. In oltenica descendants, were noticed different flower morphology, alteration of meiosis, as well as embryo abortion in different stages of development, which resulted in a low seed production. Analysis of variance revealed a very significant influence of the genotype on all analysed characters. *R. pseudoacacia* var. *oltenica*, a clone identified on sandy soils from South Romania, presents significant differences in comparison with common black locust. It has a good rectitude, a high growth rhythm, different shape leaflets, a modified flower morphology and a low seed production.

These researches were financially supported by the Ministry of Education and Research, Bucharest, Romania, by the CNCSIS grant 74 GR/2007-2008, code 1180.

SURVEY REGARDING ON THE LIMITATION OF NUTRITIVE AREA AT THE *MURRAYA PANICULATA* SPECIES CROPPING

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ABSTRACT

Murraya paniculata originates from Asia and is part of the Rutaceae family. It is one of the indoor plants that decorate, both with rich dark-green leafage, the white jasmine-like scent flowers, but also with red-orange mature fruit.

The hereby survey is an attempt to present the aspects regarding the limitation of nutritive area at the *Murraya paniculata* species, by using various sized flower pots.

STUDIES CONCERNING THE NUMBER OF GRAINS IN THE MAIN SPIKE FOR DROPIA' S SOMACLONES AND GAMETOCLONES

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ABSTRACT

Tissue culture is an important source of somaclonal variation thus for, starting from two types of explants represented by anthers and immature embryos gametoclones and somaclones were obtained for the wheat cultivar Dropia. The biological material used for these studies was represented of 18 somaclones and 7 gametoclones. The control was represented by the cultivar itself.

The somaclones and gametoclones of the cultivar Dropia were studied in two comparative cultures as for the randomized blocks by three repetitions.

Comparing the results obtained for the cultivar Dropia somaclones and gametoclones on observed that the average of the number of grains in the main spike is superior for the somaclones comparing with the gametoclones. The control presented inferior values comparing with both gametoclones and somaclones, for this character.

THE IMPLICATTIONS AGENTS OF DAMAGES ABOUT THE YIELD OF LOSS TO THE DROPIA WHEAT KIND

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**S.C. Romed Impex S.R.L. Calarasi

ABSTRACT

The results investigatory obtained to the culture wheat emphazed the adhibition two treatments with the fungicide on the strength of of propiconazol 75g/ l + carbendazim 300 g/ l, in the dose of 1 l / ha achieved best check of foliar infections, difference of yield obtained, comparative with the untreaty witness, be of 1375 kg/ ha, distinctly significantly from statistical viewpoint. Miss of productions to the corny kind Dropia encoded to 41, 2% to untreaty comparative with the adhibition two treatments for complaints foliare. Among these, 10% owing to pathogenetic agents Erysiphe graminis charm. Sp. Tritici, Fusarium sp., Puccinia recondita, Septoria sp., 6, 2 % owing to the attack produced of Cephus pygmaeus and Trachelus tabidus, 1% the attack produced of Eurygaster integriceps and Aelia accuminata, and difference of quantitative loss the yield is produced of the drought.

METHOD BY PROGNOSIS AND WARNING ASSISTING BY COMPUTER

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ABSTRACT

The but of this article is a view of extensions for plants protection, which have an informational programme like basis and the primary hardware configuration (the station for data measurement and transmission, sensors, detectors, primary bases).

The system must be looked like a tool which help you to supervise and optimize correctly the application of the treatements against some diseases. The system is not a decision factor and it mustn' t looked like that. A computer programme can' t take a decision, but who use this soft can consult or not these recommendations

THE COMPARATIVE STUDY BETWEEN TRITICUM AESTIVUM AND TRITICUM DURUM REGARDING YIELD AND ITS COMPONENTS IN ARDS SIMNIC AREA CONDITIONS

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ABSTRACT

During 2006-2008 to ARDS Simnic area have been tested in experimental conditions, fourteen winter wheat varieties and eleven durum wheat varieties. There were established yield and productivity components: number of kernels per spike, kernels weight per spike, 1000 kernels weight and test weight.

As a three years average, comparatively with Dropia yield (witness variety) and the average of all tested varieties, ten of eleven durum varieties recorded yield decreases, statistical provided.

Among kernels weight per spike values for both species haven' t been recorded significant differences neither individual level nor as average (d=0,06 g). The same situation was recorded for 1000 kernels weight and test weight values (d=0,80 g).

THE RESEARCH REGARDING TRITICUM DURUM DROUGHT RESISTANCE IN SIMNIC AREA FIELD CONDITIONS

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ABSTRACT

During 2006-2008 to ARDS Simnic field conditions were tested in a trail fourteen winter wheat varieties and eleven durum wheat varieties. In 2007 year was recorded the driest period for the last fifty years in Simnic area. In this environmental conditions, Triticum durum yield ranged between 330 kg/ha (Rodur variety) and 1380 kg/ha (Hezera 13 variety). When drought intensity was 0, 64, Triticum durum varieties have showed a drought index which have ranged between 945 kg/ha (Auradur) and 3430 kg/ha (Rodur) and also a sensitive drought index over 0,500 for most of varieties.

In normal fertilizing conditions, the difference between winter wheat and durum wheat drought index was very significant (d=-2,09^{ooo}) and the difference between sterile ears procentage of two species was distinct significant (d=-12, 64%).

The recorded data emphasise that the average of winter wheat yields was higher than the average of durum wheat yields with 300%, mean that Triticum durum is more drought sensitive in Simnic area extreme conditions.

RESEARCH REGARDING THE INFLUENCE OF DIFFERENT FERTILIZATION ON THE CHEMICAL CHARACTERISTICS OF SPECIES TRIFOLIUM REPENS ON A PERMANENT MEADOW AT POIANA BRAŞOV

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ABSTRACT

This paper will present the influence of different management practices of a permanent grasslands in Poiana Brasov, on some chemical characteristics, such as digestibilitation, contained in nitrogen, phosphorus, potassium, calcium and magnesium, at species Trifolium repens. Experimental field is composed of five parcels, each representing a distinct variant management nutrients in the soil: V1 – witness, V2 - 20 t / ha stable manure, V3 - 1.84 t / ha CaO + 20 t / ha stable manure, V4 - $N_{50}P_{50}K_{50}$ + 1.84 t / ha CaO + 20 t / ha stable manure, V5 - 1.84 t / ha CaO + slippers 1 sheep/m^2, 3 nights. Data from our laboratory analysis indicates that in variant V2 species Trifolium repens reached maximum regarding the content of nitrogen, potassium, calcium and digestibilitation. Variant V3 ensure the highest content of magnesium, and the variant V4 meets the highest content of phosphorus.

BACTERIOLOGICAL AND ENZYMOLOGICAL STUDY OF THE SEDIMENTS FROM THE MIDDLE COURSE OF THE JIU RIVER

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ABSTRACT

The present work has bacteriological and enzymological data referred to the sediments from the Jiu River. Based on this data, we can estimate the river' s qualities. Sediment samples were taken from the Jiu River (middle course) in the summer and winter of 2007. Drawing points were established according to the river course (from upstream to downstream) and possible chemical, physical or biological pollution sources. There were seven drawing points: confluence with the Sadu River, Targu-Jiu upstream, Tragu-Jiu downstream, Rovinari upstream, Rovinari downstream, Craiova upstream (Isalnita), Craiova downstream (Podari). Enzymological methods had in view to establish the following enzymatic activities: actual dehydrogenase activity, potential dehydrogenase activity, catalase activity, urease activity and the microbial iron reducing Fe^{3+} activity from the studied sediment. The bacteriological study had in view to establish three microorganism ecophysiological groups: ammnifying bacteria, nitrifying bacteria and iron-reducing bacteria. The established indicators had seasonal variations, according to the drawing points. Based on our data, we established that along the middle course of the Jiu River, there is a biological pollution in the drawing point Targu-Jiu upstream. We also have a chemical pollution in the following drawing point: Rovinari downstream and Isalnita.

SEARCH ABOUT THE BEHAVIOR SOME VALUE ELITES FROM NORTH OF OLTENIA

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ABSTRACT

During 2005 - 2008 period observation have been carried in the walnut populations from the Northern area of Oltenia. This area of Oltenia contains 3 counties: Valcea, Gorj and Mehedinți; there walnut trees are wide spread (over 240 thousands plants). The walnut populations are from genetic point of view natural hybrids, growing on their own roots. The growth vigor of the elits walnut trees is large or very large in all the populations studied. The value elites were analyzed: the size of fruits (31.8 mm – 47.3 mm), the fruit weight (10.9 g – 13.7 g), the kernel weight (5 g - 6.6 g), the kernel percentage 44%– 47%), etc.

The elites from the localities studied have terminal bearing and different degrees of resistance at Xanthomonas campestris pv. juglandis (bacteriosis). The general characteristic of the elites walnut tree from this area is: have easy cracking fruits and easy removal kernel.

OBSERVATIONS ON THE EFFICACY OF SOME RATICIDES IN BROWN RAT (*RATTUS NORVEGICUS*) CONTROL AT S.C. TONICO GENERAL COM S.R.L. – NEGRAŞI FARM, DÂMBOVIȚA COUNTY

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University of Târgovişte

ABSTRACT

Three rodenticides were tested to control the populations of Rattus norvegicus at S.C. Tonico General Com S.R.L. – **Negraşi farm, Dâmbovița county** - RATITELL, STORM and COLBROM, applied as they are or in combination with different alimentary baits. In the 2 cases, when products were mixed, only the mixture with vanillin sugar, wheat bran and cinnamon were eaten but death rates were reported only for STORM.

The COLBROM product has a high efficacy, 87 dead individuals being counted after 8 days only. No death rate was reported 10 days after, which means all rats populations had been eradicated.

THE MAIN DAMAGES PRODUCED BY RODENTS

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ABSRACT

A lot of damages produced in both different agricultural sectors and alimentary products industry, bakeries, supermarkets, households made rodents one of the most harmful pests of man. The wide spread of rodents, their varied feeding regime allow them an easy adaptation to the most different sources of fodders and aliments.

Rodents are in many cases carriers of pathogenic germs, being in permanent contact with domestic animals from farms or with wild animals from fields or forests, and the main vectors in disease transmission to man and animals. Rats and mice carry and transmit over 80 human and wild or domestic animal diseases beeing a real reservoir of infection and vectors.

EVALUATION OF SOME WHEAT LINES CONCERNING THE PRESENCE OF GPC-B1 GENE, USING DNA MARKERS

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ABSTRACT

Grain Protein Content (GPC) of wheat is an important factor for nutritional value and represents one of the major factors with strong influence on bread and pasta quality. The high grain protein content gene (Gpc-B1) transferred from Triticum turgidum ssp. dicoccoides into durum wheat and into hexaploid backgrounds is a valuable resource for increasing GPC.

Some wheat segregant lines, ascending of Triticum dicoccoides, were evaluated considering three replications in order to assess the presence of Gpc-B1 gene.

As a result of repeated evaluation of the studied wheat lines, it has been found the presence of genotypes showing the specific DNA fingerprint which indicates the presence of HGPC (High Grain Protein Content) gene as well as the existence of several genotypes without amplification. Nevertheless, most of the studied genotypes demonstrated the absence of Gpc-B1gene.

THE BEHAVIOUR OF SOME CORN CULTIVARS IN SIB AND INBREEDING POLLINATION

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ABSTRACT

Landraces are the most suitable genotypes for marginal area or specific agro-eco-systems. In order to preserve the landraces of corn, an allogamous specie, two methods were applied. In the experimental conditions the inbreeding (I) and the sister and brother (SIB) methods were used. The cob fertility of two types of descendants was analyzed. The pollination method emphasized the genotype particular reaction. In comparison with the inbreeding 50% of the SIB descendants revealed a higher amount and weight of grains. The cultivar Balsa 24/2 gave best results regarding high kernel weight/cob (I=132g; SIB= 126g).

MINIMUM CONDITIONS NECESSARY TO CARRY OUT PEST CONTROL CUSTOMS MATCH ECONOMY

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ABSTRACT

The paper aims to avoid being known pest risk that the products affected or sprayed with toxic chemicals can become poisonous, both human and animals, causing temporary or deadly illnesses. By controlling the plant toxic substances can be localized in certain vegetative organs.

METHODOLOGY RULES ON QUALITY CONTROL AND PHYTOSANITARY THE FIRST IMPORT OF SEEDS AND PLANTING STOCK

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ABSTRACT

This paper aims to organize and regulate internal methodological standards with those of the European Union. The goal sought an international balance in the general purpose of avoiding the risks of introducing extensions in the Member States, pest plants and plant products, both in terms of exports and imports.

ASPECTS CONCERNING THE SPREADING OF SYCAMORE MAPLE IN ROMANIA

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ABSTRACT

Sycamore maple represent one of the noble species and it is often disseminated in stands found in hilly and mountain regions. He has un important forestry and economical role because

their extremely valuable wood. The specie is widespread all over the country, from the mountain to the field lands.

Analysis of the Sycamore maple spread shows us that this specie is found mostly on the soil belongs to the cambisols class followed by the soils belongs to the luvisols class. Other classes of soils are poorly represented.

Distribution of Sycamore maple on the altitudinal plant belt put in evidence the presence of the specie from subalpine forest field to the plain lands. Mostly the Sycamore maple appears in mountain of mixed stands.

AUXOLOGICAL RESEARCH CONCERNING *ROBINIA PSEUDOACACIA* VAR. *OLTENICA*

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ABSTRACT

Robinia pseudoacacia is native to North America. In our country it was introduce on the sands of Oltenia where the specie found a new home. A variety of black locust was identified by engineer E. Barlanescu in 1966 and was called Robinia pseudoacaccia var Oltenica. This variety is remarkable for their height growth and the stands productivity compare with common black locust.

In order to assist the growth of the specie, an average tree was analyzed.

In this regard a lot of measurement was made on cross section for each two meters on the tree trunk and the longitudinal profile of the tree was built. Based on measurements made there have been calculated the volume of the tree for different ages, the annual average growth, the period average growth and percent growth.

The researches put in evidence a very sustainable rate of growth for the first 15 years, especially the first five ones.

AGROMETEOROLOGY AND GROUNDNUT PRODUCTION

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ABSTRACT

The present research is more like a documentary paper linked to the influence of climatic conditions on groundnut production formation. It is known the fact that groundnuts are tropical plants and requires a long period of heat and also enough humidity, both in the soil and atmospherically.

Rainfall is the most significant climatic factor affecting groundnut production, as 70% of the crop area is under semi-arid tropics characterized by low and erratic rainfall. Low rainfall and prolonged dry spells during the crop growth period were reported to be main reasons for low average yields in most of the regions. Persistent droughts and insufficient rainfall represent one of the greatest constraints on groundnut crop.

Groundnut production is significantly determined by rainfall during July to September.

In Romania groundnut yields were reported to be vulnerable from year to year because of large inter–annual variation in rainfall. Further experience made to Tamburesti Research Station established that the variation in groundnut yield arises to a large extent from the variation in the total rainfall during the growing season. It was observed that seasonal rainfall up to 50 cm is required to sustain a successful groundnut crop in this region.

AMINOACIDS CONTENT TO SOME GROUNDNUTS GENOTYPES

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ABSTRACT

Present paper present the amino acids content to eight groundnut genotypes cultivated on the sandy soils from southern Oltenia.

The experimented genotypes presented different values. Some genotypes registered increased values of the amino acids (essential and non-essential) and others registered decreased values, comparative with the experience control, average of the varieties.

The amino acids content varied with genotype. The most increased values of the total amino acids registered Black Brazilian variety (26.219 g/100g d.m.) and the report between essential and non-essential amino acids presented higher values to Jumbo-Virginia variety (44.84%), comparative with the experience control (41.76%).

Among the essential amino acids , lysine and metionine presents great importance, these amino acids registering increased values to all experimented genotypes comparative with the experience control.

MECHANICAL MEANS OF RODENTS CONTROL

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ABSTRACT

Mechanical means are used in the maternity areas of dairy farms, in alimentary products industry, in kitchens, restaurants, hospitals, zoological gardens and other areas where toxic baits cannot be used. The advantages of this kind of control means are the following: it is allowed an evaluation of removed rodent number, it disappears the decomposition problem of the rodent bodies in inaccesible places, it is not dangerous both for man and other animals, it is not possible that other animals feed from the poisoned bodies. Mechanical means are also used to capture some individuals and to establish the present rodent species,the sex-age ratio for to assess the prognosis and to organise the control.

OBSERVATIONS ON THE EFFICACY OF SOME INSECTICIDES IN THE WHEAT BUGS - EURYGASTER SPP. CONTROL

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ABSTRACT

One of the dangerous pests of wheat is Eurygaster spp. It attacks all the aerial organs of wheat, producing important damages, and wheat bug control has a special importance for wheat production, both from qualitative and from quantitative point of view. In this respect, 9 insecticide products, from different chemical groups, were tested. The best efficacies, of over 90%, had the following insecticides: Sumi-Alpha 2.5 EC, Ordatox 25 CE and Fastac 10 EC.

AIRBORNE POACEAE POLLEN IN URBAN ENVIRONMENT FOR 2000-2004

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ABSTRACT

Poaceae pollens are known as very potent aeroallergens. The aim of this study was to present and to compare the characteristics of airborne Poaceae pollen in urban environment in Timisoara, România. Measurements were performed with the volumetric method. Analysis of the pollen concentrations and the pollen distribution was performed on the basis of the data collected in Timisoara in the seasons of 2000–2004. Pollen seasons were defined as the periods in which 90% of the total catch occurred during year. The majority of Poaceae species have constant periods of pollen release. The airpollen season is long and lasts from the beginning of May until the middle of September. The highest pollen count was noted in 2001. The maximum pollen concentrations were recorded in May for all investigated years. The urban ecosystem hosts a rich reservoir of strongly allergogenic plants. The present study show the high level of the biologic air **pollution in Timişoara area with airborne pollens of Poaceae.**

THE ANALYSIS OF DAILY CONCENTRATIONS OF AIRBORNE POLLEN IN THE WEST AND SOUTHWEST OF ROMANIA

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ABSTRACT

This analysis is meant to determine the way in which pollen grains are disseminated in the atmosphere of Western and South-Western Romania in the year 2004, by using the volumetric method of collecting, identifying and quantifying data. The monitoring period started on 16 February and ended on 10 October 2004 (238 days). 23 pollen types were identified. The early spring – spring period was dominated by the pollen coming from anemophilic trees. In the late summer – autumn period the airplankton was dominated by the airpollen coming from herbaceous plants. For the investigated area the maximal quantity of airpollen occurred in April. The daily concentration of airpollen for each pollinic type is expressed in number of pollen grains in m3 of air (PG/ m3). Other parameters taken into account were: the total daily concentration of airborne pollen, the total monthly variation, and the total annual variation. The highest daily concentrations were those of Ambrosia (August and September), Artemisia (August), and Poaceae (May, June, and July). The main airborne polluter was the pollen of Ambrosia artemisiifolia.

STUDY OF VARIABILITY IN SOME LANDRACES OF LONG PEPPER (CAPSICUM ANNUUM VAR.LONGUM), COLLECTED FROM WEST ROMANIA

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ABSTRACT

The aim of this study was the evaluation of local long pepper germplasm concerning some identification morphological traits and yield capacity. 8 cultivars were collected from counties Arad, Timis and Bihor, cultivar Kapia from Kurtovo beeing used as a control. Main evaluated traits were

the fruit lenght and diameter, average fruit weight and number of fruits per plant. This study highlights the fact that a small number of cultivars presented bigger fruits in comparison to the control, exception beeing the cultivar Begheiu Mic, having bigger fruits than Kapia from Kurtovo, and that some of the cultivars presented higher number of fruits per plant. Detected variability recommends the use of local long pepper germplasm in breeding processes of this variety, some of the populations can be directly exposed to selection, and some can be used as parental lines in breeding programs.

ANALYSIS OF THE METHODS FOR THE ENVIRONMENTAL PRINCIPLES INTEGRATION WITHIN THE MANAGEMENT OF FARMS SITUATED IN NORTH-EASTERN PART OF ROMANIA

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ABSTRACT

Our studies focused on analyzing the integration practices of environmental principles for the management of several farms situated in the region North-East of Romania.

This analysis was made on the basis of the data collected on 114 agricultural units from North-East region of Romania.

Statistical data were obtained through structural agricultural surveys, which have been provided last year.

DETERMINING THE EFFECT OF TREATMENT WITH CHEMICAL MUTAGEN AGENTS ON SOYBEAN, IN CULTURE *IN VITRO*

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ABSTRACT

In vitro mutation induction on soybean, using chemical mutagen agents leads to genetic variability, which can be used on the improvement species.

DETERMINING THE BEST DOSE OF CHEMICAL MUTAGEN AGENTS DEPENDING ON THE CONCENTRATION OF MUTAGEN SOLUTION IN THE PROCESS OF SOYBEAN AMELIORATION

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ABSTRACT

In order to compare and appreciate the sensitivity of mutagen agents DL50 lethal dose must be used.

PETROLEUM HYDROCARBONS BIODEGRADATION BY A NATURAL ABSORBANT PRODUCT AND A SOIL MICROBIAL POPULATION TO ENHANCE THEIR BIOAVAILABILITY

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ABSTRACT

The release of hydrocarbons into the environment, whether accidental or due to human activities, is a main cause of water and soil pollution. Many bioremediation technologies have been developed to remove these contaminants, as some biological treatments are cheaper than chemical and physical treatments and sometimes result in complete mineralization. Several petroleum aliphatic and polycyclic aromatic hydrocarbons can act as source of carbon and energy for the growth of soil microorganisms. One main factor that influences the extent of their biodegradation is their bioavailability and this is a priority research objective in the bioremediation field.

One of the major environmental problems is soil contamination caused by spills of petroleum hydrocarbon compounds. Hydrocarbons are a frequent cause of environmental pollution, which is why the oil and petrochemical industries have a great responsibility for resolving environmental protection problems.

Bioremediation methods use microorganisms that occur naturally in the environment and degrade (mineralize) contaminants to carbon dioxide and water. Biological processes have been used successfully to remediate soils contaminated with petroleum hydrocarbons and their derivative. Several petroleum hydrocarbons can act as a source of carbon and energy for the growth of soil microorganisms. Bioremediation is not a new concept and is being increasingly used as a relatively economical environmental remediation technology.

Although hydrocarbons could be biodegradable, the main limiting factor to their effective and complete degradation is their bioavailability to soil microorganisms, due to limited solubility in aqueous media, especially for high molecular weight compounds.

In this paper are presented the preliminary results concerning the bioremediation of contaminated soils using a natural hydrocarbon absorbent product to enhance the biodegradation of petroleum hydrocarbons.

RESEARCH WITH TRITICALE CULTIVARS ON THE LUVIC SOIL FROM TARGOVISTE PLAIN

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ABSTRACT

For five years (2002-2006), in the conditions of the luvic soil from Targoviste Plain, eight Triticale cultivars were experimented (Plai, Titan, Gorun, Silver, Stil, |ebea, Tril, Haiduc). The experimental data show that Triticale crop gave good yields of 56.0-83.4 q grains/ha in three years and more than 10 q grains/ha in the most favourable years 2004 and 2006. As a consequence it is to propose the extension of Triticale crop in this region, especially Titan and Plai cultivars, characterized by resistance to low temperatures, drought and lodging, and high productivity.

THE EVALUATION OF BIOACTIVE COMPOUNDS IN BREWING WORT IN CONNECTION WITH PROCESS PARAMETER

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ABSTRACT

The tastes of varying beer typ are derivated from a judicios choise of row materials. Hops (*Humulus lupulus L*.), in particular, account, in adition for the bitter taste, for a delicate hoppy flavor in beer. Perhaps the most important class of hop compunds are the hops bitter acids, which are distinguished as alpha acids. The rate of isomerization of alpha acids to iso-alpha acids (the bittering compounds in beer) was characterized over a representative pH, wort concentration, time boiling and temperature range during the boiling portion of the brewing process. Because of the complex wort matrix and interfering interactions occurring during real wort boiling (i.e., trub **formation and α**-acids/iso-**α**-**acids complexation), this investigation on α**-acid isomerization was performed in wort solution as a function of time (60**−120 min), pH variation (5.1**-5.8) and wort original gravity (10-14^{o}Plato). Precise understanding of isomerization kinetics allows improved accuracy in hopping rate calculation to achieve target concentrations of bitter compounds in wort, despite varying pH as the kettle approaches boiling, or as wort encounters a lag time prior to entering a heat exchanger for cooling. Also, understanding of isomerization is essential if novel regimes are to be explored for potential bioactive compounds (Xanthohumol) in final products. The experiments demonstrate that the rate of isomerization depending of beer matrix, the performers of wort kettle and the variety of hops.

THE EVALUATION OF QUALITY PARAMETERS OF ROMANIAN HOPS VARIETIES

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ABSTRACT

The hops varieties are classified according to their use in the brewing industry: bitter and aroma. The evaluation of quality parameters of 2008' Romanian hop harvest was made according with LICSA procedures and Analityca EBC, the international standards for brewing industry. The study were conducted to analize two bitter hops varieties: Magnum and Brewers Gold and two aroma hops: Perle and Aroma, from Saschis and Seleus farms from Sighisoara region. The group **called bitter acids has a high content of α**-acids (8-**13 % w/w), its content in β**-acids is in the range of 4-6,5 % w/w , and cohumulone ratio in the interval of 19-24 % rel., according with Analityca EBC **7.7. The aroma hops has low content of α**-acids (5-**7 % w/w), β acids content in the range of 3,8**-5,2 % w/w and cohumulone ratio is in the interval of 21-32 % rel, acoording with Analityca EBC 7.7. The analysis of hop resins were done acording with Analityca EBC 7.5 to determine the total **resins (% w/w), soft resins (% w/w), LCV (%w/w), β** – fraction (% w/w) and hard resins(% w/w).

PARASITOID BIOCOENOSES AND THEIR SIGNIFICANCE INTO KEEPING OF NATURAL EQUILIBRIUM

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ABSTRACT

Starting from the analysis of the trophic networks realized by some species of parasitoid insects limiting, on natural way, the populations of Brevycorine brassicae L., Uroleucon cichorii Koch., Pieris brassicae L. Pieris rapae L., Plutella xylostella L. and Delia radicum, we discovered that they are true **parasitic biocoenoses** (as they were named by Jourdheuil P., 1960). Or better said of **parasitoid biocoenoses**.

Parasitoid biocoenoses are formed of producers, phytophagous consumers and primary, secondary and even tertiary and quaternary parasitoids, representing all forms of zoophagous consumers. The trophic pyramids of the parasitoid biocoenoses are not like any of those of predatory parasitic type , but they have specific characteristics.

The parasitoid biocoenoses have all the characteristics of this organization level: integrity, dynamic equilibrium, self-regulation, programs, historical evolution, heterogeneity etc. They have a very important role in the keeping of natural equilibrium.

THE COMPARATIVE STUDY REGARDING YIELD AND MAIN YIELD COMPONENTS OF AUTOCHTHONOUS AND FOREIGN CORN HYBRIDS IN ARDS SIMNIC AREA FIELD CONDITIONS

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*****SCA Şimnic**

ABSTRACT

During three years (2005-2007) to ARDS Simnic area were tested 13 corn inbred lines (7 romanian lines and 6 foreign lines) and also 8 hybrids (5 romanian hybrids and 3 foreign hybrids) resulted from these lines.

These inbred lines were: RF408, RF406, RF403, RS235,RS151, RS64,RS13, K5361, K8112, K9340, K7448, K4432 and K7619.

The tested hyb**rids were: F376 (RF408xRF406), Olt (RF408xRF403), HSŞ1 (RS235xRS151), HSŞ2 (RS64xRS235), HSŞ3 (RS64xRS13), Laureat (K5361xK8112),** Mikado(K9340xK7448) and Luce (K4432xK7619).

The comparation, during three years in different cropping systems (irrigated and rainfed), among five romanian hybrids yields and its components beside three foreign hybrids lead to a superiority of foreign hybrids.These foreign hybrids exceeded romanian hybrids yield with a distinct significant difference (11,5%) due to a higher vegetative vigour, expressed as foliar surface.

In experimental conditions, it was observed that autochthonous inbred lines recorded a good prolificity of 100,1 corn cobs per 100 plants, beside to romanian hybrids prolificity which decreased, recording 99,8 corn cobs per 100 plants. A similar situation it was recorded to foreign inbred lines which also showed good prolificity of 105,6 corn cobs per 100 plants and that of foreign hybrids which decreased to 101,5 corn cobs per 100 plants.

For hybrids situation, especially for autochthonous hybrids, it was observed a decrease of corn cobs average number per plant beside to parental forms.

OBSERVATIONS OVER SOME PHYTOCOENOSES OF THE ASSOCIATION SALICETUM ALBAE ISSLER 1926 em. SOÓ 1957, FROM THE PERIMETER OF THE SURDUC LAKE

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ABSTRACT

The association Salicetum albae ISSLER 1926 em. SOÓ 1957 is to be found in the country especially in the everglade of the Danube, but it can also be found in other river meadows. In Banat it' s not a common association (MORARIU & DANCIU, 1970, VICOL, 1972, DIHORU et al, 1973, COSTE, 1975, COSTE et al., 1999). The phytocoenoses which are analyzed, were found in the perimeter of the Surduc lake, where they are placed as groups. The premises of the study is the great conservative value which is held by this phytocoenoses. Besides the landscape value, they contribute to the soils protection against the erosion and they also are a shelter for many species of aquatic birds. Frequently, at the shelter of the willows are quartered aquatic phytocoenoses.

THE BIODIVERSITY OF THE FLORA OF SOME ACCUMULATION LAKES IN TIMIS COUNTY

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ABSTRACT

In this paper are presented the results obtained due to the study over the flora biodiversity from four accumulation lakes in the Timi**ş** county (**Surduc, Pişchia, Liebling, Sânandrei**). In this respect were identified 285 species from 62 botanical families. The floristic analyze was realized on categories of bioforms, geological elements and considering the ecologic behavior of the species. There were also took into consideration some aspects concerning the conservation of some species.

THE IMPROVEMENT OF AERIAL TREATMENTS TECHNOLOGIES WITH THE ULTRA LOW VOLUME (ULV) AGAINST DEFOLIATOR INSECTS

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ABSTRACT

The accumulation of a new knowledges about the biology and ecology of harmful insects, the enlargement of range of pesticides and equipments of aerial aplication, as well a current deficiencies considering polygons and routes of flights signalize, require the periodic improvement to the methods and the technologies of spraying.

The papers presents result of the experiments efectuated for the optimization works of flag the polygons and routes of flights with help to the system of guide through GPS. Also, is presented the way of dispersion to the drops of insecticides in trees crown realize with new equipements of spraying with the ultra low volume (ULV) which rigged teams the aircrafts guide through GPS.

The results obtained shows a series of practical aspects of aerial treatments witch can be use to improved the technical and economical efficiency.

THE RESEARCH ASSISTED BY COMPUTER. APPROXIMATIONS AND INTERPOLATIONS USING THE SOFTWARE MATLAB IN VIEW OF SIMULATION IN PROCESS PHASES OF VINE' S INCREASE AND DEVELOPMENT

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ABSTRACT

MATLAB is a programming language likewise a developping system which integrates the calculus, the visualisation and the programming in a easy to use medium. The problems and their solution are concured in a approachable mathemathical language. Starting from the experimental data, the accumulation of the drysubstance like a function of actif temperature (∑**°C) and time (t),** the software gets a function which brings the increase of vine SU(∑**°C,t), through interpolations** with a very little step; so, this evolution can be determined empiric.

For mathematical thoroughness in the approximation of function - accumulation of dry matter (SU) depending on the temperature have used a variety of functions: exponential, logaritmic, polynomial depending on the type curve nonliniare sometimes fragmenting the diagram on parts. Simultaneos we can choose the function that proximate the best the experimental data by using dedicated software and we can get the values y=f (x) by interpolation $y_i=f(x_i)$, the interpolation step being very small, 10^{-6}. We can make such calculations of the value of dry matter (SU) not by experimental way, but by using the applied sciences on computer. Where experimental data collection are a disparate values we can complete, however small it would be intervening Variation Δx , can lear**n at any time variația** ΔSU.

ACIDOPHILOUS *PICEA* FORESTS OF THE MONTANE TO ALPINE LEVELS IN THE CĂPĂȚÂNII MOUNTAINS (ROMANIAN CARPATHIANS) AND THE ANTHROPIC IMPACT ON THE FOREST VEGETATION

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ABSTRACT

The Căpatanii Mountains are part of the Parang Mountains, the researched area lying between: to the East, the Oltet rivulet, to the West the Olt river, to the South the subCarpathian area of Oltenia, to the North the Latoritei Mountains, the Valley of Lotru and the Depression of Loviste. In the South part, at the borderline with the subCarpathian area, there is a stretch of **mesosoic limestone which composes wild gorges (Olteț, Galbena, Costesti, Cheia, Bistrița). In the** South-East, we can notice a limestone peak, i.e. Buila-Vaturarita, which reminds us of Piatra Craiului. The Southern orientation of the slopes and the presence of the limestone layer allow for the growth of a great diversity of plants.

The wooden vegetation is represented by forests, water meadows and boscages situated in the upper basin of thet, the largest area being occupied by the forests. In this paper, we present

one plant association, within *VACCINIO PICEETEA* Br.-Bl. 1939 Class: *Hieracio rotundati-Piceetum* **Pawł.** *et* Br.-Bl. 1939 (syn.: *Luzulo sylvaticae-Piceetum* Wraber 1953).

The Carpathians' spruce fir forests represent the wooden vegetation found on the upper mountain level, vegetating on slopes with different exposure and inclinations, on grounds with *districambusoils* **(acid brown soils). They are an widly spread association in the Căpățânii** Mountains, under the form of a range between 1100-1870 meters altitude.

The spruce fir forests have a great value from the economic point of view, because they represent an important source of high quality wood. The spruce fir wood has various usages in the furniture industry, cellulose and paper, manufacture of musical instruments, constructions. From the food industry point of view, the *Vaccinium myrtillus* fruits and the eatable mushrooms which grow in these forests, are of a great importance.

The decline in the diversity of forests and the restriction of afforestation have become reality in the last years, yet the world' s need for wooden resources is expected to double. Man brought about changes in the structure of the wooden phytocoenoses through his direct or indirect actions: unreasonable clearings, the opening of dense networks of forestry roads, the usage of certain hard equipments for collecting the wood, the intensive grazing.

THE COROLOGY, ECOLOGY AND PHYTOSOCIOLOGY OF THE *TELEKIO SPECIOSAE-PETASITETUM HYBRIDI* (MORARIU 1967 N.N) RESMERIȚĂ ET RAȚIU PLANT COMMUNITIES IN THE UPPER BASIN OF THE LUNCAVĂȚ RIVER

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ABSTRACT

The examined area, process which started in 1997, is situated along the superior course of **Luncavăț and covers a surface of about 450 km**^{2}. From a geo-morphological point of view, the **upper basin of the Luncavăț River presents several** relief levels, clearly separated: the mountainous **area with Căpățânii Mountains from the Meridional Carpathians and the sub**-Carpathian depression Horezu, belonging to the sub-Carpathian area of Oltenia.

The general aspect of vegetation in the upper basi**n of the Luncavăț** River represents an image of the very different stationary conditions, to which one can add the influence of the anthropo-zoogenous factors. Herbous vegetation is represented by the meadow vegetation, aquatic and paludous vegetation, ruderal vegetation and saxicole vegetation.

In this paper, we present one plant community, within *Adenostylion alliariae* Br.-Bl. 1925 alliance, because the human impact in this type of habitat are very increased and their generally conservation value is important: *Telekio speciosae- Petasitetum hybridi* (Morariu 1967 n.n.) **Resmeriță et Rațiu.**

This plant community grows mostly along the brooks and the springs in the mountainous regions. The phytocoenosis association grows on flat lands or slight slopes, on high-humidity lands, more or less shady. Such species of phytocoenosis grow in the upper Luncavat basin at Polovra**genilor V., Rameşti V., Luncavăț V. and Urş**ani V., at heights ranging between 700 m and 900 m, especially on aluvial soil. The plant community have been analyzed and characterized from the chorological, ecological point of views. They were also examined according to their floristic composition and physiognomy, syndynamics and economics. We paid much attention to the determination of the *Bray-Curtis* qualitative index and the achievement of dendrograms, using the *Group-Average method (UPGMA)* from the program SYN-TAX 2000 (for the associations with minimum 10 relevees).

THE INITIATION OF IN VITRO CULTURES OF SEA BUCKTHORN (*HIPPOPHAË RHAMNOIDES* SSP. *CARPATHICA*)

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ABSTRACT

Sea buckthorn is one of the most valuable species of fruit bearing shrubs of the spontaneous and also of the cultivated flora, due to its content of biologically active substances from leaves, fruit and shoots. Sea buckthorn fruit are most appreciated as natural polyvitamins as they comprise high amounts of the most important vitamins (A, B_1, B_6, C, E, F, K, P). The plant is used in the treatment of skin and eye diseases, chronic hepatitis, rashes, neuralgia, alcoholism, gout, rheumatism, cirrhosis, atherosclerosis, anaemia etc.

The *in vitro* cultivation of this species aims either the long-lasting multiplication and preservation of possible valuable genotypes, or the isolation of some new genotypes.

Active or dormant buds were harvested from sea buckthorn shrubs from S.C. FRUCTEX **S.A. Bacău, and then used to initiate the** *in vitro* cultures. The biological material was disinfested in several stages, using citric and ascorbic acid, tetracycline solution, mercury chloride solution 1‰ and subsequently rinsed with sterile distilled water. The nutritive medium formuli were variants of MS medium (Murashige-Skoog, 1962) and WPM (Woody Plant Medium, 1981), supplemented with varied amounts of auxins and cytokinins.

The reaction of the inoculated explants varied with the type and concentration of growth regulators within the nutritive variants, and within the explants. The main morphogenetic reaction was axillary caulogenesis, that varied with the nutritive medium. The most favourable variants to induce multiple shooting were WPM supplemented with varied amounts of BAP and IBA, and a variant of basic MS medium comprising BAP and NAA.

Callus formation at the the shoot base was evinced on a variant of supplemented with small amounts of NAA.

EFFECTS PRODUCED BY SIMULATED SOIL WATER STRESS IN HORTICULTURAL PLANTS

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ABSTRACT

Soil water stress has adverse effects on the water relations and productivity of plants, there are few quantitative descriptions of these important effects, permiting comparations between species, or an understading of which physiological attributes are particularly sensitive to stress, this is particularly true for many species.

The present paper describes experiments in which the short-term responses of three species (Calendula officinalis, Crisanthemum leucantemum and Echinacea purpurea) to different known levels of simulated soil water stress are contrasted and compared in a controlled environment. Plant responses are evaluated in terms of changes in leaf water potential, transpiration and photosynthesis. From these primary data important attributes including stomatal and mesophyll resistances to CO_2 fixation, and plant hydraulic resistance to water flow have been computed. One critical factor is the increase in mesophyll resistance approximately parallels that in stomatal resistance, as stress increases and plays an important role in reducing photosynthesis.

THE INFLUENCE OF THE SALINOUS MINERALS WITH N, P, K CONCERNING THE PHYSIOLOGICAL PROCESSES IN CORYLUS AVELLANA PLANTS

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ABSTRACT

The work refers to the influence of the salinous minerals with N,P,K administrated separrately and in mixture concerning the growth in height of the stem, concerning the content in protides and lipides of the seeds and also about the photosynthesis and the respiration of the leaves by the Corylus avellana plants cultivated in ,,Lunca Jiului,, dendrologycal Park .
One has established that towards the end of the period of vegetation the plants of all variants are nearing the control height (without salinous minerals) while the foliar surface is much bigger that to the control.
In comparison with the control, content in protides it is bigger to the variants that contain N and the content in lipides is bigger to the variants that contain P.
The photosynthesis has grown intensively by the variants with NPK, and the respiration does not represent to great differences in comparison to the control plants.

RATIONAL USE OF AGRI-ENVIRONMENT ASSESSED BY NUCLEAR AND ATOMIC METHODS

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ABSTRACT

It is wellknown that the development of agriculture introduces environmental pressures and impacts on the ecosystems. In terms of soil degradation, the main pressures caused by agriculture are compaction, diffuse contamination with pesticides and herbicides, acidification and erosion. The problems of water pollution by agriculture, both of ground – and surface water are amplified by water availability. Atmospheric emissions of NH_3 and greenhouse gases (as N_2O and CH_4) causing eutrophication and acidification have decreased in the last decade due to decreased use of fertilizers.

The environmental monitoring implies a lot of tools and methods, which identified and investigate the existing problems, particularly those of local and regional concern, and their relation with common environmental standards.

The employment of nuclear and atomic methods in the agri-environment factors assessment is treated in this study.

INSTRUMENTAL PHOTON NEUTRON ACTIVATION ANALYSIS FOR DETERMINATION OF TRACE HEAVY METALS

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ABSTRACT

The major part of trace elements enters living organism via the food chain. Then the accurate determination of trace heavy metal concentrations is an important task in applicative

sciences and their use in the benefit of human life. For example, Photon Neutron Activation Analysis (PNAA) offers a reliable possibility of providing a rapid multielemental analysis of various samples in ppm range, supposing as well the preservation of the samples. The accuracy of the analytical method was proved by analysis of a number of environmental materials.

ENVIRONMENTAL DEGRADATION AND AGRICULTURE

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ABSTRACT

The environmental risks associated with the agriculture imply such effects as natural resource depletion, habitat exploitation, poor fuel use, etc., and result in a non-sustainable food production. As Alexander Müller, - the FAO Assistant Director-General said, " Agriculture has to be at the centre stage if we want to preserve an ecological balance on which current and future generations can depend" . Degradation of agroecosystem services leads to severe consequences as desertification and species disappearance. At the same time, climate change is expected to accelerate many pressures on the environment, as long-established production systems become destabilized by water depletion, salinity, aridity and rising temperatures. Moreover, many water sources are being polluted by excessive use of fertilizers and pesticides.

In order to reduce the environmental damages and ecosystems stresses caused by agriculture activities and expansion, major political and technical corrections based on certain and regularly accomplished assessments should be done. An example of such management plan of measures for providing a better perspective for agriculture's ability in order to provide sufficient food, goods and services that are vital for sustaining human life is presented and further discussed.

THE BEHAVIOUR OF A WINTER WHEAT SET TO PYRENOPHORA TRITICI REPENTIS f.c. DRECHSLERA TRITICI REPENTIS ATTACK IN DIFFERENT FERTILIZING TREATMENTS TO ARDS SIMNIC AREA

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ABSTRACT

The pathogen that causes tan spot on wheat is Pyrenophora tritici repentis(Died.) (anamorph) Drechslera (Helminthosporium) tritici repentis(Died.) Shoemaker. In recent years tan spot has become a potentially destructive disease of wheat in Romania and neighboring countries. The present paper contains winter wheat yields and attack degrees data in order to Pyrenophora tritici repentis f.c. Drechslera (Helminthosporium) tritici repentis (PTR) attack in different fertilizing treatments in ARDS Simnic area. The PTR attack was observed only to five cultivars for both fertilizing treatments. Thus, in fertilizing deficiency conditions at T1 on the 28th of April 2008 the attack degree recorded values among 1,31% by Iasi to 6,92% by Mandolin. Exotic cultivar had 4,32% attack degree value. At T2 on the 10th of May, the attack degree recorded values among 4,91% by Iasi to 20% by Exotic. Mandolin cultivar had 17,66% attack degree value. At T3 on the 20th of May 2008 the attack degree recorded values among 10% by Iasi to 25% by Exotic. Mandolin cultivar had 22,33% attack degree value.

At 40 kg/ha N and 40 kg/ha P_2O_5 rates applied in autumn and 60 kg/ha N rate applied in spring, the pathogen attack degrees were almost at the same level or less due the plants capacity to combat better the pathogen. At T1 on the 28th of April 2008 the attack degrees values were

among 1,64% by Orqual to 6,16% by Mandolin. Exotic cultivar recorded 4,04 %attack degree value. At T2 on the 10th of May, the attack degree recorded values among 4,56% by Esential to 14,69% by Exotic. Mandolin cultivar recorded 13% attack degree value. At T3 on on the 20th of May 2008 the attack degree recorded values among 9,57% by Esential to 20% by Exotic. Mandolin cultivar had 15% attack degree value. It was observed that in fertilizing deficiency treatment the attack degree had higher values, but the yield loss had a lower value due of the lack of nitrogen fertilizer applied in spring, which favor the yield losses effect.

THE SPECIFICALLY ECOLOGICAL FACTOR' S INFLUENCE OF THE OLTENIA AREA ON SOME WHEAT ISOGENE LINES GENOTYPES

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ABSTRACT

The wheat represents one of the base crops of this geographical area of Romania. Unfortunately, this area doesn' talways offer the most favorable conditions for this crop, the major cause being the water deficit.

That is why, when it is considered to introduce for cropping new cultivars, it must be effectuated a careful testing of those ones, in order to establish the biologic potential but also the character' s stability. There are no exception from this rule for a series of wheat lines, where was infused Rht type genes, genes whose action must be studied in order to establish their influence in those climatic conditions.

OBSERVATIONS CONCERNING THE HARMFUL SPECIES FROM THE CEREAL CROPS FROM THE HUŞI -VASLUI ZONE, THE VASLUI COUNTY, IN THE PERIOD 2005-2007

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ABSTRACT

The cereals represent the group of plants with greatest importance for humankind. This assures the basic food for peoples and the animals, as well as the main raw materials for flesh, milk and eggs production, foods that provides the necessary products for life.

The increase of cereals production is possible through the technologies that presupposes the use of the varieties with big capacity of production, the fertilization of the soils, according to their necessities, complete mecanisation of the works and through measures of prevention and struggle the weeds and specific pests.

Regardind the pests from the cereal crops, these can produce annual damage of 13.8 against 11.6% produced by the pathogenic agents and against 9.5% due to the weeds **(Cramer,1967 cit. Rădulescu 1974).**

In the present work are presented the species from the cereal crops in the period 2005-**2007, from the Huşi**-Vaslui zone, the Vaslui county.

The species most frecvently encountered in this period were: the cereals beetles (Anisoplia spp.); the cereals bugs (*Eurygaster* spp.); wheat stem sawfly (*Cephus pygmaeus*); the red worm of the straw (*Haplodiplosis marginata*); wheat thrips (*Haplothrips tritici*); the oat beetle (*Lema melanopa*); the green louse of cereals (Schizaphis graminum); the ground beetle (Zabrus *tenebrionides* Goeze); *Diptera pests* (*Oscinella frit*, *Mayethiola destructor*, *Phorbia* spp.)

INFLUENCE OF GENOTYPE ON MICROPROPAGATION OF TWO INTERGENERIC HYBRIDS *FRAGARIA X POTENTILLA*

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ABSTRACT

In this work we present the results of studies on the influence of genotype on micropropagation of two varieties of ornamental strawberry. In order to develop a protocol for high efficiency *in vitro* propagation of Serenata and Pink Panda varieties was investigated on MS and LF medium, with different combinations of growth regulators. *In vitro* performance of explants indicated a positive correlation between shoot proliferation and genotype in Serenata variety. The mean number of shoots formed per explant was higher when Serenata hybrids were subcultured on MS or LF medium, irrespective of the combination of growth regulators, compared with Pink Panda, characterized by a very low response to *in vitro* culture. In Serenata genotype, the highest rate of proliferation was achieved on medium supplemented with 1.0 mg/l BAP, 2.0 mg/l GA_3 and 0.5 mg/l Kin.

CHOROLOGICAL DATA FOR SEVERAL TAXONS IN THE SCILLOIDAE SUBFAMILY (1)

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ABSTRACT

This paper presents the results obtained until now regarding the chorology of several taxons of the Scilloideae Subfamily.

The purpose of this paper is to present as accurate an image as possible on the chorology and ecology of the Scilloideae Subfamily species, for better rationalizing the species' use, thus combining scientific research with practical requirements.

For the realization of the analyzed species' chorology, all herbariums in the country and the specialized literature were consulted, in order to obtain a very accurate view of these species' spreading in Romania. The respective data have been inserted in the present paper.

The paper is part of an extensive study on the morphology, anatomy, taxonomy and chorology of the species belonging to this subfamily.

CHOROLOGICAL DATA FOR SEVERAL TAXONS IN THE SCILLOIDAE SUBFAMILY (2)

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ABSTRACT

Recent results regarding the research conducted on these plants, especially anatomical, cytotaxonic, ecological, area-related and biochemical research, together with the morphological ones, have influenced in great part the plants' taxonomy. In order to clasify the taxonomic position in taxons, implicitly taxons in the Scilloidae subfamily, it' s also necessary to know their chorology. Completing the chorology for taxons with an unclear taxonomical position is more than necessary in order to correctly know and name them. During the past 10-15 years the division of the Liliaceae family into 9-15 is more and more frequently mentioned. The *Scilloideae* subfamily comprises the following genera: *Scilla*, *Hyacinthus*, *Hyacinthella*, *Muscari* and *Ornithogalum*. The

essential characteristics that set apart the species of this subfamily from the rest of Liliaceae subfamilies are: they present a bulb in the soil, septate nectaries, the fruit is a loculicid capsule and the raffidas are also present, and have an Allium-type embrionary sac.

FEW ASPECTS ON THE USING OF THE LOCO CORN GERMPLASM IN BREEDING CORN HYBRIDS

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ABSTRACT

The phenotypical variability of inbred lines can be interpreted as basis factor in the achieving of a high heterosis with the hybrids that are those inbred lines included in. The inbred lines are characterized by the presence of less developed plants, shorter, with a lower yielding capacity, reduced growing rithm, lower adapting capacity as a result of inbreeding process. By inbreeding is not always produced the degeneration yet the segregation and expression of the negative or unfavorable genes. In such conditions the selection becomes more difficult. Our research has identified the way these characters can be avoided.

RESEARCHES ON THE BREEDING METHODS USED IN ORDER TO OBTAIN CORN INBRED LINES

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ABSTRACT

The present paper explains the selection methods used for obtaining the inbred lines that will, further give the corn hybrids. Of the three used methods, the most suitable is the one that extracts the lines from two synthetic, divergent populations that undergo two recurrent, reciprocal selection cycles (SRR)2 during 8 years.

BLACK PINE OF BANAT *PINUS NIGRA* VAR. *BANATICA* (BORB.) NOVAK *IN SITU* CONSERVATION

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ABSTRACT

Biodiversity is a different concept comparing with diversity, even if both regards in general the variability. The methods and the aims followed are different, biodiversity regarding the living earth (biota) as a whole, the final aim of its investigations consist in the species natural conservation as it is in their natural habitat (**Enescu V., 1997, Bavaru, A., Godeanu, S., Butnaru, G., Bogdan, A., 2007).**

Forest ecosystems have a fundamental role in life maintaining on Terra, and their biodiversity is very ample by the multitude of plants and animals species, that are living in the habitats represented by woods. This fact make as in future the humankind will accord a greater attention to the biodiversity conservation (**Savatti M., Savatti M. jr., 2005**).

The importance of the vegetal genetic resources and forests consists in their exceptional genetic diversity. As higher genetic diversity exists and as well known and conserved it is the breeding success chances are greater **(Borlea.Gh.F,Radu.S, Hernea C, 2005).**

Trees breeding suppose hereditary dowry enrichment, hereditary characters and qualities modification by elimination of the invaluable ones and clamping of those practically expedient **(Săraс I 2005)**.

RESEARCHES REGARDING THE NATURAL FOREST STABILITY FROM THE CARPATHIANS AND SUBCARPATHIANS OF VALCEA AND FROM THE NORTHEASTERN AREA OF THE OLTET PIEDMONT

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ABSTRACT

Researches are located in natural forest ecosystems situated on the eastern slopes of the Capatana mountains and in the southwestern part of Valcea Subcarpathians and in the north east of the Oltet Piedmont.

In this territory, there are still natural forests areas made up of beech or mixtures of this with the sessile oak, characterized by a high stability.

After our undertaken researches, there have been identified 3 basic development phases (terminal phase, degrading phase and regeneration phase) and an intermediate phase (regeneration terminal phase).

According to the adopted determination solutions ,natural forest stability studied in the development phase is the following:

- high stability: regeneration phase (stable-labile domain);
- intermediate stability: terminal phase and regeneration terminal phase(labile-stable domain);
- low stability: degradation phase(labile domain).

The average stability of forest ecosystems from the studied territory is situated in the labile-stable domain.

RADIAL GROWTH OF THE TREES IN THE NATURAL FOREST IN COMPARISON WITH THE AGE AND THE POSITIONAL CLASS OF THE TREES.

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ABSTRACT

Researches are located in natural forest ecosystems situated on the eastern slopes of Capatana mountains and in the north east of the Oltet Piedmont on the territory of Valcea district.

In this territory , as part of some natural beech forests and some mixtures of this with the sessile oak ,there have been delimitated biogroups made of 5-7 trees which interconnect each other in processes of growth and development.

There are various relations between the individuals that make up such a biogroup, of domination, competition, favour etc.

The rational growth of the trees is influenced by the age and position of these as part of the biogroups thus delimitated, so that:

- bark increment is increased in the first years of life, it decreases and it remains minimum for a long time ,after which it intensifies and it maintains for a maximum period of time;
- the moment of reaching the maximum bark increment depends on the position of each individual as part of the biogroup .The better the social class occupied by this is, the younger the age of the maximum growth is;

- the closer the trees on the social scale are ,the more similar their growth course is, what proves the achievement of some " local solidarity" against the action of the disturbing factors;

- on the contrary, as the trees are farther on the social scale, the responses of these to the action of the local disturbing factors are altered in time what suggests that the trees from the dominated content enjoys some kind of protection from life community to the action of the destructive factor.

RESEARCH REGARDING FERTILIZATION INFLUENCE UPON GRAPES YIELD IN CASE OF CABERNET SAUVIGNON, FETEASCA REGALA AND MUSCAT OTTONEL VARIETIES IN RECAS VITICULTURAL CENTER CONDITIONS

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ABSTRACT

Vine fertilization represents a technological sequence which must be very well known, clarified and which despite all reserches made can be still improved.

The aim of this research is to emphasize mineral and organical fertilization influence upon grapes yield in case of Cabernet Sauvignon, Feteasca Regala and Muscat Ottonel varieties. Research was made during 2006 and 2007 in Recas viticultural centre conditions. Experiments having a stationary character it was giving big attention to the experimental field which by soil features, positioning, corresponds to vine needs as concerns environmental factors.

In viticulture in order to obtain high yields fertilizers use is compulsory especially that vine occupies fields with a reduced fertility. The approvment of a rational fertilising system which will lead to an equilibrium between growth and fructification, between quantity and quality without any side effects upon health and vines longevity, requires an adequate documentation, and ecological factors influence is to be monitorized. Experimental plots were: V_1- control, V_2- organic fertilizers and V_3-mineral fertilization(N150P100K100) applied on south exposition and plane ground for each variety. Plots are arranged using random blocks method. Each plot has 30 vines in three repetitions.

In 2007 the highest yield/hectar was obtained in case of Feteasca Regala variety, followed by Muscat Ottonel and Cabernet Sauvignon varieties. In 2006 the share was identical as concerns yield' s size. Yields in the two years of experimentation registered the highest values on plane ground. Yield /hectare is superior to the control in both experimental years, in case of the studied varieties. The highest yields were registered in case of V_3.

EPILITHIC DIATOM FLORA IN THE MIDDLE OF CERNA RIVER

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ABSTRACT

This paper shows the results of species diversity research of epilithic diatom flora in the **middle water course of Cerna River, between two dams (Cerna dam upstream and Prisăcina dam** downstream).

These results complete other results, already published (Péterfi and Sinitean, 2007, Péterfi, Kiss and Sinitean, 2007) and obtained after examination of more samples, collected from ten stations, in different seasons.

COMPOZITION OF THE EPILITHIC DIATOM COMMUNITIES DOWNSTREAM CERNA RIVER

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ABSTRACT

This paper presents the results of the epilithic diatom communities research in Cerna River, in Herculane area, as well as in Bela Reca tributary.

Beside their composition, the diatom communities are characterized from the ecological and floristic affinities point of view.

Comparative with similar studies in upper Cerna River (Péterfi, Voicinco and Sinitean, 2007), we find an increasing tendency of species diversity from the upper site towards the lowest one.

STUDIES CONCERNING THE STABILITY OF SOME YIELD ELEMENTS AND THE IDENTIFICATION OF SOME POSSIBLE CORRELATIONS BETWEEN THOSE ON SOME ROMANIAN AND FOREIGN CORN HYBRIDS IN THE SPECIFICALY ECOLOGICAL CONDITONS OF THE OLTEINA' S SOUTH AREA

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ABSTRACT

The Oltenia geographical area is remarked as having a climate mostly droughty, this environment factor being limitative for the corn crops. Because of the fact that, every year is certified a high number of foreign corn hybrids, preliminary it is necessary a rigorous testing, in order to appreciate objectively as possible the biologic potential. Also, by testing in droughty conditions, it can be identified those characters and features genetically conditioned that led to a higher yield stability, even in drought climate.

THE ORGANIC AGRICULTURE, INTEGRATED PART OF THE SUSTAINABLE AGRICULTURE

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ABSTRACT

In the profound transformation context of the post Revolution period, but after the EU acceding, the Romanian agriculture needs major investments. An extra opportunity for this economic branch recovery is the organic agriculture, branch that show off exactly that major characteristics which represent the biggest disadvantage of the Romanian agriculture, referring here on the lack of capital or insufficient capital, low mechanical equipments level or in counterpoint numerous human resources. It can not be considered that, with organic agriculture can be solved the biggest problems of the Romanian agriculture, but this domain has a huge potential that can capitalize exactly that traditional part of the agriculture, which normally should be reformed.

RESEARCHES CONCERNING THE WATER CONTENT IN NITRATES AND NITRITES IN SOME VEGETABLE ECOSYSTEMS FROM OLTENIA

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ABSTRACT

Soil and water contamination determines the trophic pollution respectively an insidious pollution of the vegetable products which consumed repeatedly brings new doses of noxa in time and determines directly actual and future people health.

The researches made until now allow estimating the content in nitrates and nitrites of the water which ensure the irrigation source of some vegetable ecosystems from the south-west of Romania. Samples of water both from intra- and extra-territory of six counties with tradition in vegetables crop: Izbiceni, Motatei, Teasc, Tamburesti, Isalnita and Banu Maracine were taken for the study. The monitories counties are placed on different types of soil (mol sol, luvisol and psamosol) where the conventional vegetable technologies predominate.

In Isalnita, Motatei, Izbiceni and Teasc it was established a supplementary charge of water with nitrates. So, NO_3 content, expressed in mg/l water, was of 237.5, 235.0, 217.5 and respectively 135.0 outrunning the maximum admitted limit (50 mg NO_3/l). As concerning the nitrites content, in all monitories counties values which outrun the maximum admitted limit were not registered.

REASERCHES CONCERNING THE UTILISATION OF GREEN MANURE AND OF HUSKS OF GRAPES COMPOST IN ORGANIC ONION CROP

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ABSTRACT

In the demarche of organic vegetables technology, one priority measure referees on conversion of the conventional technologic system on the organic one, having as base structures and models of ecological cultivars, formed from viable adequate sequences for different geographical areas, with the purpose of obtaining vegetable products with high added value. In this **way, at S.D. Banu Mărăcine University of Craiova, on a land aft**er 3 years of conversion, it was studied an experimental model for the ecological process, by fertilization the onion crop with green fertilizer (soy bean and fodder radish) as fertilizers bases of the soil and husks of grapes compost, 15 t/ha (V_2**) şi 25 t**/ha (V_3). The onion yield has situated between 34,7 t/ha (V_1-**the control) şi 37,9** t/ha (V_2). The increased organic fertilizer dose have not determined the nitrates accumulation in the onion bulbs.

THE SPECTRUM OF THE BENEFICIAL ENTOMOFAUNA FROM THE VITICULTURAL ECOSYSTEM S.D. BANU MĂRĂCINE CRAIOVA

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***U.S.A.M.V. a Banatului Timisoara

ABSTRACT

The viticultral biocoenosys it is simpler than the natural biocoenosys (meadow, forest, etc.) and present a reduce stability and complexity.

The profound intervention of the human in the viticultural ecosystems has led to powerful disequilibrium, especially the pesticides applying it is one of the main factors which affect the biodiversity, the pesticides being synthesis chemical substances, toxic or very toxic, from outside of the agricultural ecosystems.

In order to counterbalance these negative effects, we have to know the beneficial entomofauna (parasites and predators), we have also to protect and eventually to help through our actions it presevation and development.

The beneficial entomofauna (parasites and predators) has been represented by 14 species systematically framed in four orders.

The most numerous order has been Coleoptera with 7 species, followed by Hymenoptera with 4 species and Neuroptera with 2 species, and from the Diptera order has been idenified a single species.

THE PROPAGATION OF 5 GYMNOSPERM SPECIES AT THE BOTANICAL GARDEN „AL. BUIA" CRAIOVA

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ABSTRACT

The Gymnosperme are trees and shrubs, rarely herbaceous plants, with acicular leaves, scaled or squamiform with male and female flowers (unisexuate) constitute in cones which form seeds through the ovule fecondation by the anemophile polen (transported by wind), and the seeds are free because the conifers doesn' t form real fruits.

Because it form forests on large area, the gymnosperme have a great ecological importance (influence the climate, humidity, the air quality) are used for different ornamental forms as well for the wood quality used in construction, furniture and musical instruments.

Also they are used in the pharmaceutical industry and from the resine can be obtained: ink, terebentine, spirits, cellulose and others. The Gymnosperme has been the base for the superior coal reserve.

STUDY OF NODULATION CAPACITY AND EFFICACY OF SOME NATIVE AND SELECTED *BRADYRHIZOBIUM LUPINII* STRAINS

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ABSTRACT

In any cultural systems for Lupinus sp. such as principal culture, intercropping, crop rotation, allied crops through utilization of performing symbiotic strains, the improvement of total nitrogen content in soil is assured. The present paper shows results about efficacy and nodulation capacity for four Bradyrhizobium lupini selected strains compared with native strains of edaphic microflora. The efficacy of the strains was tested by inoculating Lupinus angustifolius L. seeds with the bacterial culture. After a 6 week growing period, dry weight, total nitrogen content, number and volume of the nodules were determined. The strain LP78 is the most efficient genotype, determining the highest total nitrogen content in the plants and the greatest number and also volume of nodules per plant.

CHARACTERIZATION OF *BRADYRHIZOBIUM LUPINII* GENOTYPES REGARDING TOLERANCE TO HERBICIDES AND COMPETITIVE CAPACITY

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ABSTRACT

The rhizosphere is a highly dynamic system with a vast number of fungi, bacteria and actinomycetes interacting simultaneously. The Rhizobia are nitrogen fixing soil bacteria with a great importance in sustainable agriculture, offering the possibility to replace the mineral fertilizers. The objective of our research was to characterize 4 genotypes of Bradyrhizobium lupinii (designated LP53, LP73, LP78 and LP83), from Lupinus albus L. plants cultivated on cambic chernozem in 2007. We tested the in vitro herbicide (acetochlor and trifluralin) tolerance and the resistance at antibiotics synthesized by edaphic actinomycetes. The results indicate proper tolerance of the bacterial strains at the acetochlor and trifluralin herbicides, a negative effect appearing only at a high concentration. The strain with the most significant competitive capacity was LP83.

THE INFLUENCE OF FERTILIZATION UPON SPECIFIC LEAF AREA (SLA), LEAF AREA INDEX (LAI), LEAF AREA RATIO (LAR) AND DRY MATTER CONTENT IN SOME MAYZE (ZEA MAYS L.) HYBRYDS CULTIVATED IN BANAT AREA

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ABSTRACT

In this paper we study the influence of different type of culture technology in changes of some physiological index in mayze (Zea mays L.) hybrids cultivated in Banat area. We cultivated the principal 20 hybrids used in this region in the following cultivated technology: conventional technology (with application of N,P,K fertilization), organic technology and ecologic technology. Nitrogen is considered as one of the most important inputs needed for increasing productivity of field crops. Balanced amount of N application at proper time according to the need of the maize decreases N losses, increases yield and quality.

We determinate followed parameters: specific leaf Area (SLA), leaf area index (LAI), leaf area ratio (LAR) and dry matter content. The experience showed that the application classic fertilization increase all physiological index. The best results regarding SLA and LAR was obtained in PR36D79 with 67,01 cm^2/g, regarding LAI the best results was obtained in LG-3330 with 10072,887 (leaf area per plant x No. of plants m^2). The dry matter content showed different value between 6% and 22,50% function with the organ which was analyzed.

OBSERVATIONS REGARDING THE COLEOPTERS FAUNA FROM A NATURAL PASTURE BELONGING IN THE EASTERN ROMANIA

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ABSTRACT

The researches were done in the pastures invaded bt Lepidium draba L. – the result of irrational grazing of livestock respectively cows and sheep

During the research period (2007, 2008), observations were made upon the structure, abundance and dynamics of the coleopters. Were collected in season 2007 at number of 307 samples of coleopteras belonging to the following 46 species. In 2008, were collected of 446 samples of coleopteras belonging to the following 38 species. We also present the value of ecological parmeters (abundance, constance, dominance and ecological importance). The dominant species what in concerns the number of samples collected were: Baris chlorizans Germ. (140 samples); Dermestes laniarius Illig. (92 samples); Harpalus aeneus F. (64 samples); Ophonus azureus F. (48 samples); Pseudophonus rufipes Mull. (45 samples).

PEST AND BENEFICIAL INSECTS OF MEDICINAL PLANTS IN BULGARIA AND ROMANIA

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ABSTRACT

Medicinal Plants (MeP) plants play a vital role in the maintenance of human health throughout the world. **The sustainable use of MeP in the Balkans is threatened due to over**-exploitation, destructive harvesting, habitat loss and alteration and decrease in genetic diversity. In the framework of bilateral project between Bulgara and Romania we are developing pest management strategy for cultivated and wild life commercially important MeP.

The specific objectives of this study are: (1) To develop an inventory list of pest insects on MeP in Bulgaria and Romania; (2) To identify the pest management problems and needs of producers and exporters of medicinal plants as well as needs of pharmacy business of new cultivated plants species; (3) To assess the species composition and economic impact of insect pests on top-ten most produced and used MAP in the targeted countries; (4) To study of species composition of beneficial insects of key pest of targeted plants; (5) To develop a digital database of insect pests on Medicinal plants in Bulgaria and Romania and (6) To analyze the data obtained and produce recommendations to authorities

The expected results are: (1) Assessment of available level of knowledge on pest insects on MP in Bulgaria and Romania; (2) List on pests on MeP on the base of literature data published in English, Bulgarian and Romanian; (3) Identifying plants what need a development a technology for cultivation and pest management; (4) Identifying the key pests what need a development of an environmental friendly pest management strategy; (5) Better understanding of the actual economical importance of pests on the targeted plants; (6) Identifying of the key pests of targeted plants what will allow the development of specific pest control strategies in MeP in future cultivation of these plants and (6) Contacts between business, farmers and academia will be established what would be base for future innovative collaborative projects.

In the paper we discuss the present state of art concerning the level of knowledge of pest management of MeP in both countries.

INVASIVE SCALE INSECTS OF ORNAMENTAL PLANTS IN BULGARIA AND CHINA

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ABSTRACT

In the framework of bilateral scientific and technological cooperation between China and Bulgaria, signed by the Ministry of Science and Technology of the People' s Republic of Chinaand the Ministry of Education and Science of the Republic of Bulgaria a two year project will be done. There has been increased interest in recent years in utilization of native and non-native ornamental plants in urban area, because of the beauty and diversity they lend to the landscape. The addition of new ornamental plants to the urban landscape often results in the introduction of new pest and disease problems. In attempting to deal with insects, one of the major pests that feed on ornamentals are scale insects. The objective of this project are as follows: 1) to develop a preliminary list of scale insect species of ornamental plants in Bulgaria and China based on literature source; 2) study of species composition and distribution of scale insects on ornamental plants in Bulgaria and China; 3) assessment on pest status for dominant species in both country; 4) evaluation the possibility of invasion for dominant scale insects via ornamental plants trade

between China and Bulgaria. The realization of this project will revise the information concerning scale insect species of ornamental plants in Bulgaria and China. New data are expected to be added to the scale insect fauna of ornamental plants in Bulgaria and China. An annotated check list of scale insects of ornamental plants will be made for Bulgaria and China. This information will be useful for both Chinese and Bulgarian Plant Protection and Quarantine services. Predict which scale insect species are the most likely candidates for future invasions into the urban area in China and Bulgaria.

RESEARCH ON THE MORPHOLOGY AND BIOLOGY OF THE STIGMINA CARPOPHILA FUNGUS

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ABSTRACT

Stigmina carpophila is a plant pathogen that causes mycotic spots on leaves and fruit of the drupes; the attack has various intensity on peach, apricot, sour cherry, cherry and plum trees. In Romania, it is highly spread in overgrown orchards, and it causes great losses in favourable years. Together with the symptoms of this fungus, it is important to study its morphology and biology. The biological material consisted of leaves, offshoots, fruit, flowers and buds from the drupe varieties. The pathogen was isolated on a frequently used culture medium, i.e. potato-glucose-agar (CGA).

The observation performed (biometric data resulted from the dimensioning of 100 conidia from the populations obtained on the CGA culture medium), the biggest conidia were seen in peach-trees, and the smallest in the apricot-trees.

Conidium germination started at a temperature of 2oC (1-3%), the best temperature was recorded between 16 and 24 oC (25-80%), and it decreased to 5% at 30oC. Progressive spore growth was recorded starting from 2oC, the highest colony growth was reached at 20oC, decreasing to 30oC.

RESEARCH ON THE *STIGMINA CARPOPHILA* ATTACK UPON DRUPACEOUS TREES IN NATURAL INFECTIONS AND FUNGICIDE INFECTION UPON FUNGUS MYCELIA AND CONIDIA UNDER LABORATORY CONDITIONS

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ABSTRACT

The attack of some diseases is represented by: frequency (F%), intensity (I%) and attack degree (A.D.%). In order to obtain exact information on the lot health, the attack/tree relationship was recorded for every third tree row by determining the attack on two levels of the respective tree and calculating the average; measurements were made on the diagonal of the lot.

The paper presents the attack degree of the mycotic leaf spotting in the drupaceous trees resulting from their study on the untreated variants of the fungicide-treated lots (2005, 2006 and 2008). The average values were treated per species, based on the results obtained from various varieties of the following species: cherry, sour cherry, plum, peach and apricot tree. Regarding the leaf spotting symptoms in the drupaceous trees, the year 2008 recorded the most favourable weather conditions of the experimental years in the Bucharest area. The laboratory experiments focused on the action of six fungicides upon the Stigmina carpophila fungus grown on a CGA culture medium.

THE ELABORATION OF AN INTEGRATED PROTECTIVE SYSTEM OF THE RAPE CROP, AGAINST THE ATTACK OF THE DISEASES AND THE PESTS

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ABSTRACT

The research had as a purpose the elaboration a protective system of the rape by using chemical and biological products to prevent the attack of the diseases and pests.

In the paper presented the results of the studies, conducted in the years 2007-2008, the use both of the chemical and biological products. The products obtained from bacteria and fungi antagonistic, active against some pests and fungi rape, this can reduce or eliminate chemical pesticides in the treatment plant, thus becoming an integrated component of the culture.

From the category of organic products are bacteria *Bacillus thuringiensis*, which is active against larvae species of insects harmful to crops rape and fungus *Trichoderma viride*, effective in inhibiting the growth and development of the main pathogens present in soil or seed.

On the base of the obtained data, a sketch of the integrated pest management crop of rape has been elaborated.

By including the biological methods in the protection technology it would ensure the reduction of the toxic residues from the crop and as well as the protection of the environment.

RESEARCH ON THE *STIGMINA CARPOPHILA* ATTACK UPON DRUPACEOUS TREES IN NATURAL INFECTIONS AND FUNGICIDE INFECTION UPON FUNGUS MYCELIA AND CONIDIA UNDER LABORATORY CONDITIONS

C. R. ZALĂ, I. VĂCĂROIU STELICA CRISTEA
U.S.A.M.V. Bucuresti, Faculty of Agriculture

ABSTRACT

The paper presents the attack degree of the mycotic leaf spotting in the drupaceous trees resulting from their study on the untreated variants of the fungicide-treated lots (2005, 2006 and 2008). The average values were treated per species, based on the results obtained from various varieties of the following species: cherry, sour cherry, plum, peach and apricot tree. Regarding the leaf spotting symptoms in the drupaceous trees, the year 2008 recorded the most favourable weather conditions of the experimental years in the Bucharest area. The laboratory experiments focused on the action of six fungicides upon the Stigmina carpophila fungus grown on a CGA culture medium.

SECȚIUNEA 4: MANAGEMENT, MECANIZAREA AGRICULTURII ŞI CADASTRU

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EXPERIMENTALLY RESERCHES CONCERNING TO IMPROVE THE MACHINES FOR ADMINISTER SOLID CHEMICALS FERTILIZERS

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ABSTRACT

In this work is presented and analyse the work process ensure by the machines for administer solid chemicals fertilizers. Also are presented technically solutions used for increase their work performances, work and energetically quality index, for the experimentally variant studied.

CONSIDERATIONS ON THE SEEDBED MACHINERY DEVICES

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ABSTRACT

The paper presents few considerations on the machinery devices for preparing the seedbed. There are presented the constructive and functional parameters that interconnect and by their values the task of the machinery is set.

THE OPTIMIZATION OF THE BASIS PARAMETER OF THE MACHINERY UNITY USING THE LAGRANGE MULTIPLICATOR METHOD

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ABSTRACT

The energy saving methods includes the correlation of the tillage capacity with the size of the working plots that in actual conditions of Romanian agriculture are distributed on a wide range. One of the efficient optimizing methods is a mathematical model that is the link between the goal and restriction function. The solving of the mathematical model for certain data show us the optimal

values needed for the working parameters of the machinery units in function of the size of the working plots.

STUDY ON TECHNOLOGY AND CONSERVATIVE SYSTEMS FOR SOIL PROCESSING THROUGH DISK HARROWS

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ABSTRACT

This work contains a study on technology and conservative systems for soil processing for sowing through disk harrows.

THE POWER ANALYZE OF THE WORK SYSTEM OF THE TRACTOR-AGRICULTURAL MACHINERY FOR THE PROCESSING BY TURNS OF THE GROUND

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ABSTRACT

The research (work) presents a model of energetic analysis of the working system tractor-row tillage machine, taking into account the aggregate parameters, the technological requirement, mode of operation, environmental conditions which affect the working process of the aggregate. There have been elaborated two models: a dynamic one and a energetic one which characterize the mobile aggregate, and a sketch to calculate the energy equation.

THE PROGRAMS WITH EUROPEAN FINANCING – CHANCE TO REINFORCE THE ROMANIAN AGRICULTURE

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ABSTRACT

The Romanian agriculture is confronted with numerous and complex problems; after December ' 89 it was registered a series of drawbacks, because of multiple and varied facts, between which we can describe as be most recognized: the absence of the financial sources, the obsolete technology, deafly professional preparation, the grown old and on the decrease labor, the lack of attractiveness for this sector.

Among the factors which conduced to the diminution of performance in the Romanian agricultural sector and the registration of weakly results from a year to other, we propose to analyze, in this paper, the problems of financing in the agriculture. Also, is followed the accession impact of the financial sources, from the European programs, about the competitively growth in the Romanian agriculture on the whole, as well as the methods of revitalization of this essential components of a great economy. For the adhesion of our country to the European Union were prepared a series of specific stages, between very important is the financing of agriculture.

On the whole, we propose to analyze the main problems which appear in the situation of the elaboration the agricultural projects and into their implementation, because is more than obvious that the manifestation of the professionalism and earnestness in this direction represents one of the secure and objective ways for the straightening of the agricultural Romanian sector and, by default, for the assurance the contribution to the growth of national economic performances.

THE STUDY CONCERNING TOURISTICAL AREAS THAT MAY BE DEVELOPED ON DOLJ COUNTY TERRITORY

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ABSTRACT

The analysis of existent tourism situation in Dolj County territory make a point that is a varied touristical potential from point of view of natural and human resources. Presently, this touristical potential is insufficiently capitalized. The existent accommodation capacities are scanty diversified, the modernizing degree is low, and the level of investments and foreign investors are yet scanty. In correlation with touristical potential complexity and value, also with pretability for different forms of tourism, on county' s territory may be defined four touristical areas: Craiova touristical area; Danube touristical area; Inferior Jiu touristical area; Getic Piedmont touristical area.

PREMISES OF CULTURAL TOURISM DEVELOPMENT IN HOREZU AREA

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ABSTRACT

Horezu area capitalize on natural conditions highly favorable for tourism practice, being advantaged by pollution factors privation and an exceptional touristic potential that allow practice of varied forms of tourism. Diversity, volume and value of existent cultural-religious potential, encourage varied modalities of active passing the free time, repose, recreation and knowledge by practice of some specific forms of tourism. Into the North Oltenia area, are maintained historical monuments with universal value – Hurezi Monastery – UNESCO monument, also an important treasury of religious art. Horezu represents an important national monachal centre and contribute to preservation of Romanian orthodox culture and spirituality, on the south of Charpatians.

There is made one of the most beautiful pottery from Romania, both to perfect forms that the potter execute and to dainty decor of objects obtained on a potter' s wheel.

ASPECTS REGARDING THE ECONOMICAL EFFICIENCY OF THE MAIN AGRICULTURAL PRODUCTS REALIZED AT S.A. AGROIND BEREZENI, VASLUI COUNTY

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ABSTRACT

The study was made on the S.A. " AGROIND" Berezeni, which was founded at 4th of November 1991, on the base of 36/1991 low.

At the present time, the firm holds an agricultural surfaces of 3727,18 hectares and a number of 686 associates.

S.A. " AGROIND" Berezeni had diversified the activity and the production and economical financial results, place it in one on the first places in the Vaslui County and also in Moldovia area.

In the year 2007, the total income obtained from the capitalization of the agricultural products (vegetal and animal) reach 3,985 mil lei, and 1069,2 lei on the agricultural hectare.

From the value of production, in the year 2007, the firm registers a gross profit of 1,34 mil lei, with a rate of gross profit of 50,6 %.

From all the vegetal products, the most efficient proved to be the rape, with a gross profit per hectare of 876 lei and a rate of gross profit of 58,8 %, and in the animal husbandry, the cow milk registers a gross profit of 2250 lei per foraged cow, and a rate of gross profit of 52,9 %.

NOTES ON RURAL TOURISM IN THE BANAT AREA

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ABSTRACT

The Banat area is characterised by a remarkable tourism potential due to both its numerous nature sites and to its cultural attractions. Thus, the Banat Mountains, due to the variety and originality of the natural landscape, to their morphology on the whole, to their climate, flora and fauna features that define the specificity of the natural tourism funds in the area, represent an area with a particularly important potential in the development of some activities in the tourism field.

Its agricultural potential can support important rural tourism practices in the Banat area. Small enterprises whose main activity is tourism, could facilitate the enlisting of more rural households in the economic circuit to which we should add some handicraft activities.

At present, there are small tourism enterprises in the following areas: Brebu-**Gărâna (considered tourism villages), Oravița, Bozovici, Teregova, Domaşnea, Poiana Mărului (in the Țarcu Mountains), the Semenic Tourism Complex, but their tourism potential is still underrate**d because of the low financial resources of the population. Likewise, in the localities on the bordering **line between the Lugoj Hills and the Poiana Ruscă Mountains (Nădrag, Tomeşti, Fârdea, etc.)** tourism still represents an opportunity in the appearance and development of small and medium enterprises acting in the field of tourism.

THE ANALYSIS OF AGRARIAN STRUCTURES FROM SOUTH COMPARTMENT OF JIJIA – BAHLUI DEPRESSION

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ABSTRACT

Agrarian structures are the effect of agrarian relations and include: the structure of ownership, the structure on the land fund on use categories, livestock structure, the structure of production, technological structure (mechanization, chemicals use etc.), structure (form) of land exploitation and types of holdings agriculture, farmers' incomes, the distribution network of materials necessary for farmers, the processing network of agricultural raw materials, the net capitalization of primary agricultural products and foodstuffs, the network's financial credit and insurance network and technical assistance. All these networks together with the farm are meant to be a complex system, which defines the agrarian structure present in a territory. The methodology diagnosis of agrarian structures should be designed to highlight and characterize as closely as possible the development of agriculture at a time.

The main objective of the paper is the identification of the following problem answer:

- Which are the tendencies of agrarian structures in European Union and Romania?

- Which are the characteristics and particularities of agrarian structures in the south compartment of Jijia – Bahlui depression?

GLOBALIZATION AND REGIONALISATION BETWEEN OPPOSITION AND COMPLEMENTARITIE

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ABSTRACT

The globalization and the regionalisation are two effects of the same process, sometimes opposed to one another, other times considered two visions of a phenomenon that are meant to complement each other.

The antithetic discussions gravitate around the political economical centralisation and the decentralisation of the states, between the exercise of the governmental authority and the one pretended by the transnational firms and also between the double quality of a person; that of worker, connected to his job and his home, understanding by the latter most of the times, the place he was born and to which he feels connected through his origin, language, mentality, customs, or that of consumer, quality in which he is interested in buying cheap and good products, regardless of the place where they are produced.

It is uncertain whether the regional regimes represent a step towards a global regime, based upon the principles of the neutrality, or whether they are protectionist mechanisms which will be used against external investors. If the regional regimes are consolidated and a global regime is not developed, the present tendency towards the regionalisation of the services and of the international production will be accentuated.

THE IMPACT OF GLOBALIZATION OVER THE AGRICULTURAL FIELD, ENVIRONMENTAL PROTECTION AND INTELLECTUAL PROPERTY

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ABSTRACT

The conditions in which globalization must be considered an irreversible process regardless of the advantages or disadvantages which create them, there is a series of fields which require immediate measures in order to eliminate the boomerang effect determined by the free market and the continuous modernization of technology. For example, once WTO was founded, a series of problems regarding the agriculture, the environment and the intellectual property have been discussed within the Uruguay Round.

The agricultural field is marked on one hand by the competition between the USA and Europe and on the other hand by the differences between the developed countries and those which have a poor economy regarding the agricultural policy they adopt.

The environmental protection is and will always be a serious problem in the way of trade liberalization because the regime imposed by the commercial negotiators may tip the scale in favour of the commercial interests, thus affecting the promotion of the ecological objectives.

In the field of intellectual property, in spite of the fact that there have been treaties, which have represented a step forward regarding the commercial aspects of the intellectual property rights, their protection continues to be the subject of some strong debates, especially in the developed and in the developing countries.

POSSIBILITIES FOR DURABLE DEVELOPMENT OF THE AGRICULTURE IN THE GALAȚI AGRO- ECONOMICAL ZONE THROUGH THE ATTRACT OF EUROPEAN FUNDS

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ABSTRACT

The durable development is a world concept that points out the connection between environment and economical grow.

In the world Commission report for the environment and rural development from the United Nations presented in 1997, the durable development in defined as " the development that satisfied the present necessity without compromise the future generation capacity to satisfy their own necessity" .

The agro-**economical zone of Galați has 8 localities situated in the Siret and Prut meadow** with an agricultural surface of 51,4 thousand hectares represented 14,7 % from the agricultural **land of Galați County.**

About 60 % of the surface, belong to the private societies and commercial private societies with juridical personality and the difference is in the property of individual household (28,0 %), the family association without juridical personality (8,3 %), and unities with a majority of public capital (4,4 %).

The authors propose to point out the sources and the possibilities of assuring the funds for durable development of agriculture from the agro-**economical zone of Galați, in correlation with The** National Strategic Plan for Rural Development during 2007-2013.

CASE STUDY REGARDING THE WHEAT SUPPLY FOR THE IASI CITY POPULATION

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ABSTRACT

Iasi city is an important economic center of Romania. The main industries are metallurgy, medicine (antibiotic), textiles and alimentary one. The banking sector and the information have been soaring in recent years, many banks and software companies are present in the city.

Iaşi is also an important regional trading center; here there are more malls (others are under construction) and more hypermarkets.

In recent years, outside Iasi grow 225 ha of wheat, achieving a total production of 570 tons, quite insufficient quantity against the annual consumption needs of the population of this city.

After calculation, results that the annual wheat supplied required for the population of Iasi is about 68,000 tons.

Starting from this value, the authors have proposed to recommend several options for the supply of wheat that can be used by wheat processors and consumers from Iasi. The versions most effective are those involving the presence of as few intermediaries.

STRATEGIES REGARDING THE DISTRIBUTION OF CEREALS GRAINS IN IASI COUNTY

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ABSTRACT

Market strategy summarizes the agricultural firm attitude towards the market and its possibilities to influence and adapting to market requirements. It realized the connection between business and environmental realized products on present and future markets and aims the objectives of that period.

Compared with other goods, cereals trade showed some differences arising from their nature. Agricultural production is realized in certain geographical areas and basins, and consumption takes place across the country.

In developed countries, modern farm system ensures the distribution of agricultural and agro alimentary products and through specific channels, forming a distribution system that covers the national territory, the products being transported from one part to another in search for a profitable markets.

In Iasi County, cannot developed general strategies on the distribution of cereals grains, but specific ones, depending on the size of farm (area of held land) and other factors. The market strategies are to increase the surfaces for the farms that are less than 100 ha, and for those with a larger area, will put an emphasis on the quality of the products and increase the market share. It recommends the adoption of strategies based on shorter distribution channels, which will include groups of producers.

CHIVE BULBS CONDITIONING MACHINE. WORKING QUALITATIVE INDEXES

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ABSTRACT

The paper presents the experimental results obtained during the tests performed with onion and chive bulbs conditioning machine, that has been designed and achieved at INMA Bucharest.

BEHAVIOUR STUDY IN DYNAMIC REGIEMEN OF ELECTRONIC ADJUSTING SYSTEMS OF LIQUID FLOW VARYING WITH DISPLACEMENT VELOCITY USED FOR AUTOMATIZE THE WORK PROCESS OF SPRINKLING MACHINERY

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ABSTRACT

Using on a large scale of electronic adjusting systems of liquid flow with displacement velocity, at sprinkling machinery become a necessity in order to ensure the stability of liquid rate – the most important demand impose for the technologically process for diseases combat and pest control. That is the reason for study the behaviour in dynamic regimen of these adjusting systems, for establish the error of liquid rate application, especially from inertia point of view shown by these.

CONSIDERATIONS REGARDING THE POSSIBILITIES OF ECOLOGICAL AGRICULTURAL PRODUCTS MARKETING IMPLEMENTATION (CASE STUDY AT VALEA ASĂULUI ASSOCIATION, VASLUI COUNTY)

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ABSTRACT

Globally, in 2007 the cultivated surfaces in ecological system was 23 million hectare, from which about 5 million hectare in European Union.

In Romania, in 2003, were register 117 ecological farmers, from which 42 in vegetal production, 28 in animal production and 48 farmers. In 2007, the number of ecological farms was 2920.

The technical and organizational frame in which there are produced, processes, imported, exported and capitalized the agro alimentary ecological products in Romania, is legally established by more normative acts, form which the Emergency Ordinance of the Government no. 34/2000 regarding the ecological agro alimentary products, MAPAM Order no. 527/2003 – regarding the system of inspection and certification in ecological agriculture, The Low of agricultural exploitation no. 166/2002, the Order 721/2003 regarding the approval of import and export rules of agro alimentary ecological products, etc.

The case study point out the results obtained through the implementation of ecological agricultural product marke**ting in the Association Valea Asăului, Asău commune, Vaslui County.**

EXPERIMENTAL RESEARCHES ON FLAT SIEVE WORKING PROCESSES

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ABSTRACT

The operation of separation of seeds from the layer on the sieves of seed cleaning and sorting machines takes place due to the phenomenon of material stratification in its components, which are differentiated after their density and also, due to the state of sifting of the seed layer on the separation surface, produced by the motion of sieves.

In order to verify the results, obtained in the theoretical study, experimental tests were performed, where there were determined the time and velocity of displacement of the material on the oscillating sieve surface, the degree of separation of components from the mixture, subjected to sifting process and the sieve productivity, all these as functions of the kinematical parameters of the motion of cleaning system, respectively of the rotative speed of the shaft of driving mechanism, the amplitude and frequency of oscillations.

In order to obtain concluding results, the experimental tests were performed in working conditions, on the cleaning and sorting machine.

All determinations were effected at different inclinations of oscillating sieves and different rotative speed of the driving shaft. In all variants of work, the tests were performed in more repetitions, the results presented in the experimental study being the average of these repetitions.

DECREASING OF VIBRATION LEVEL AT TRACTOR' S AND SELF PROPELLED COMBINES USING SEMI-ACTIVE DEVICES WITH MAGNETO-RHEOLOGICAL FLUID

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ABSTRACT

The decreasing of vibration level at tractor' s andself propelled combines has as aim the increasing of the machine reliability and the total working period. Another important reason in this direction is the improving of the working conditions for the personnel, because reducing the vibration level it is also decreased the level of noxious noise on the human being

Within the framework of the paper there are presented some methods of vibration reduction and noise fighting, using magneto-rheological fluid. Concerning the vibration level reduction there is considered the following devices: semi-active damper with magneto-rheological fluid; semi-active bushing with smart fluid; semi-active device for the vibration insulation of the driver chair; semi-active device for engine vibration insulation, in relation to the machine structure.

MODERN MEANS OF MAKING PLANS FOR FIELD SOIL STUDYING

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ABSTRACT

As a result of the progresses that technology has made the equipment in the field of terrestrial measurements in the last years it has concluded that it is necessary to realize a digital model of the continuous terrain and with a precision of 20 cm, which requires the use of modern means, especially laser scan technique, combined with GPS, video cameras, sensors. To mention that classic fotogrametic models cannot me used alone. For completing the job in good quality conditions, the FLI-MAP method is recommended.

THE STRUCTURE OF AGRICULTURAL PRODUCTION IN ÎN SOUTH – EST DEVELOPING AREA

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ABSTRACT

The paper is based on agricultural production structure in South - West developing area, by taking in consideration the time evolution for every sector (vegetal production sector, zootechinc sector, and services sector). For this matter the writers considered a time period of four years – from 2001 to 2004.

ZOOTECHNIC PRODUCTION IN ALMĂJ COMMUNE, DOLJ COUNTY

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ABSTRACT

In this work paper it is analyzed the animal effective by direction of exploitation direction and the production obtained at the zootechnic level in Almaj Commune – Dolj County. Therefore it is studied the sheep, goats and cattle number evolution for milk production and total production of meat, eggs, milk and honey bee between 2004 -2006.

THE PLACE OF ROMANIA IN THE EUROPEAN AND INTERNATIONAL AGRICULTURE

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ABSTRACT

The purpose of this study is to place Romania in the EU and international agriculture in the period 2001 – 2006.

The study is based on the analysis of some indicators at level of our country, of EU and at international level, the comparison of these indicators in order to localize correctly the place and the power of the Romanian agriculture.

ASPECTS REGARDING FOOD SAFETY AND NUTRITION ON THE GLOBAL SKALE

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ABSTRACT

There are two major determinants of the food safety concept: availability and access to food. Food safety on the individual level is not a guarantee for the family level, thus hunger, malnutrition and unsafe food are means that lead to the same process – limited access to a sufficient food offer.

Even if this concept covers a very large area of interest, food safety is a family problem or at least it regards the individual level.

This paper analyses aspects regarding food safety on the individual and national level, the relationship between nutrition and demographic growth, alimentation and fertility rate, nutrition and health, aspects linked to food crisis, food politics, etc.

TOURISM IMPORTANCE FOR ECONOMY

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ABSTRACT

Tourism acts like a dinamizing element of the global economic system and works upon a specific request of goods and services. Such a requrement triggers a rise in the field of their production , determines a change of the offer, develops touristic structures and indirectly, stimulates the production of the involued branches.The development of tourism leads to a significant production head way and contributes to the rise domestic gross income. At the same time, it significantly leads to the incrise of the added value while demandine a high consumption of activ work, intelligence and creativity.Torism stimulates the other domains production and can stand for an efficoient means of diversifying the structure of a country economy. It can ensure the flourishment of some disadvantaged areas, can stans for an alternative solution for the disindustrialized regions. As for as Romania comes into question, it represents an advantage since our country benefits from attractive touristic resources, both natural and man made. Tourism can became an important instrument of diminishing the inter-regional disequilibriums.

A concret image of the economic effects of tourism can be its contribution to the assurance of an balanced money flow produced by the domestic and international tourism.

Tourism exerts a multiplyingeffect that consists of the incrise of the incomes in the touristic sec tor. At the same time it produces an indirect effect that determines the rise of the touristic services expenses over the branches producing goods.

The tourism companies undoubtely make use of them to mantain their touristic offers at competitive standards. Undoubtely, tourism exerts an off-line effect on the national economy because both the incomes of the those who work in the touristic field and the goins of the tertiary sector are reinvested with the view of acquiring other goods and services neede.

TRANSPORT – A BASIC COMPONENT OF THE TOURISTIC

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ABSTRACT

Transport stands for one of the social and economic activities that ensure the movement of both material goods and people by means of special vehicles and installations known as traffic means with the view of satisfying the material and spiritual needs of society.

The evolution of transport was imposed by the continuously increasing development of the production factors meant to ensure a various range of services within a shorter and shorter period of time. The on-going increase of the material production quantity, the need for goods exchange, the need of transporting goods and people to long distances represented the basic factors to the ascending development of transport means.

Transport represents one of the component of the touristic field. Step by step, a new economic branch appeared and it turned into the transport industry included in the tertiary sector of service s accomplishment. The transport services display a complex content that exerts specific implications on tourism. Tourism can be defined as a distinct services branch, making its presence more and more visible in the social and economic life due to its contribution to the general progress and its role in promoting globalization and sustainable development.

Tourism drops hints on idea of movement in space. Therefore, transport develops a close connection to tourism: first of all, it enables the tourists' contact to places of high attractiveness and the yoking of offer and request; it leads to their transformation from " potentials" into " effectives" . Secondly, it creates access opportunities and enables the valorization of the touristic potential of an area or of a country.

THEORETHICAL RESEARCHES ON THE WORKING PROCESS OF VEGETAL DEBRIS CHOPPING

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ABSTRACT

The chopping of the vegetal debris that remains after the harvesting of the main crop as well as the destroying of the spontaneous vegetation on the cropped and not cropped land is an important segment of the technological process of the field crops.

The paper presents the main theoretical researches on the technological working process for chopping the vegetal debris.

STUDY CONCERNING PROFESSIONAL DOMAINS IN ALMĂJ COMMUNE, DOLJ COUNTY

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ABSTRACT

The paper makes reference to **the profession domains meet at the level of Almăj** Commune, Dolj County. Following the population number by activity domain and the time evolution of it in the 2004-2006 period, we can study the occupational tendency.

PLUMS PRODUCTION STRUCTURE IN NORTH WEST DEVELOPING AREA

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ABSTRACT

The paper work take in consideration the plums production structure in North West **developing area, showing the weight hold at regional level by every countyt: Bistrița – Năsăud, Bihor, Cluj, Maramureş, Satu – Mare, Sălaj (2004**-2006 period). In paper elaboration the author regard the fact that the region hold 17,49 % from total Romanian fruits production and 13,73 % from national plums production (average of the analyzed period).

ASPECTS REGARDING WORK RESOUCES FROM AGRICULTURE, OCUPPIED AND ACTIVE POPULATION IN 2006 YEAR

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ABSTRACT

Work occupies an important place in agricultural processes, representing the production source with an active and determinant character for the capitalization of natural and capital resources. We must mention that the assurance of the national food safety, the refreshment of the Romanian village and the agricultural orientation towards a durable economic sector cannot be designed anymore without an accurate analysis upon human resources in agriculture, on their biological and professional qualities, on their structure according to groups of age, on their economic and professional status.

VEGETABLES OFFER EVOLUTION IN ROMANIA

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ABSTRACT

There are in Romania particularly favourable pedo-climate conditions for developing truck farming, for increasing its share of national wealth, for meeting vital food equirements of the population, or for increasing exports.

MACHINE FOR APPLYING MANURE FERTILIZERS BY MEANS OF VERTICAL SPREADING APPARATUS

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ABSTRACT

Within the current context of protecting human and animal health, achieving and implementing an environmental-friendly, fertilizing technology represents a major objective. Therefore, a machine designed to manure fertilizers applying with constructive solutions at European level has been manufactured.

THE IMPORTANCE OF AGROTOURISM IN THE ECONOMIC RELAUNCH OF THE RURAL AREA

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ABSTRACT

Romania' s entry on the european coordonates imposes a continue economical development. The achievement of this target implies the use of the existing methods and the

capitalization of all opportunities at best parameters. In this way, optimizing the economical results which appeared as a result of the practice of a bio agriculture (the attainment of natural products in enviroments untouched by the destructive effects of pollution) and also the profesionalistic capitalization of the turistic potential, in all its forms, will lead to a certain economical efficiency.

Turistic services extent and diversify according to the socio-economical changes and their favourable area of development. The the appearance of the „ rural tourism" and „ agrotourism" terms enriches the whole notion of „ tourism" by diversifying it' s forms of expression.

THE IMPACT OF OFF-FARM EMPLOYMENT ON THE PROCESS OF COMMERCIALIZATION OF AGRICULTURE IN ROMANIA – IMPACT OF STRUCTURAL AND COHESION FUNDS

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ABSTRACT

This article analyses the impact of off-farm employment on the process of commercialization of agriculture in Romania. The descriptive and correlation analysis reveals the existence of an important relationship between off-farm employment and agricultural sales. High off-farm employment is correlated with low number of households selling agricultural products and with high amount sold per household, suggesting specialization and commercial farming in the regions with off-farm employment. Non-agricultural employment has an indirect impact on agricultural sales as well, through increased labor productivity in agriculture and through easing access to credit. Moreover, commercial farms undertake substantial investments in agriculture, thus furthering commercialization.

Following Romania's accession to the EU in January 2007, the country's economy has continued to expand at a steady rate. Many sectors are performing well and foreign direct investment remains solid. Romania will receive 20bn euros in the form of EU structural and cohesion funds in the first seven years of its EU membership, which will help the country's goal of staying on track for constant economic growth.

Romania and Bulgaria account for 50% of the registered farmland in the EU. The majority of Romania's claims are small land holdings used for subsistence farming, but cooperatives are making headway as the number of agricultural land holdings dropped 5% from 2001. The EU's single market and common agricultural policy will have the greatest immediate impact on Romanian agriculture.

PROFESSIONAL CAREER MANAGEMENT

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ABSTRACT

This paper work has a special importance because career management is related to planning, designing and application of the strategies and plans allowing the organization to satisfy its human resources needs. The concept of professional career must not be associated only to individuals who aim at higher and higher positions; employees` career represents an objective subject to organizations, for each of their employees.

ORGANIZATION AND UTILIZATION OF HUMAN RESOURCES IN AGRICULTURAL EXPLOITATIONS

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ABSTRACT

Human resources within agricultural exploitations are very important because, beside the fact that they launch the other factors of production, they also administrate the agricultural exploitations, making decisions witch will influence significantly the production result.

ESTABLISHING WORK INDEX PARAMETERS OF AGRICULTURAL MACHINES AND REDUCTION OF FUEL CONSUPTION

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ABSTRACT

The experimental studies have underliend the benaviour of the soil at challenges in horizontal and vertical plane, as a result of the rolling system of the agricultural machines on the soil. The intensity of the treading of the soil is influenced by the internal and the factors external the internal ones being characterized by the resistance at the penetration of the soil. At the same time iincreasing Diesel fuel price, used as fuel for the functioning of the agricultural machines engines, obliges to take an action to reduce the quantities of consummated fuel respective the reduction of the price of the agricultural works. One of the method of using the correct revolution regime of the engine and using the full power of it, in the zone in that the fuel consumption is minimum or almost minimum.

HYDRAULIC DEVICE FOR AUTOMATIC ADJUSTING OF AGRICULTURAL MACHINES POSITION WORK

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ABSTRACT

Action adjourning mechanisms which equipped agricultural tractors is ma de from a hydrostatic system. Some hydraulic system are endowed with the possibly to achieve automatic adjusting of force and position.

Other had manual sue of equalizer and function of the command achieve for work position of adjourning system. With a view to modifying the mechanism and ensure a fixed position given the tractor or soil of agricultural machines. It has been achieved a simple distributor system which is mounted between the equalizer with axial piston and the double effect cylinder of adjourning mechanism.

STUDYES ABOUT AGRICULTURAL SYSTEMS AND SOIL CONSERVATION WITH REGARD TO AGRI- ENVIROMENTAL MEASURES

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ABSTRACT

In Romania, the agricultural production systems are passing through profound and dramatic changes providing distinct features and dimensions of the sustainability issue. Although, the degree of soil quality deterioration is significant, an interesting evironmental opportunity emerged due to the sharp drop in fertilizers and pesticides consumption in agriculture. The benefit from the EU co-financing the implementation of agri-evironmental measures, provides a chance to agriculture and its integration in the environmental aspects.

RESEARCH REGARDING THE ESTABLISHMENT OF THE PRESERVATIVE TECHNOLOGIES FOR SOIL WORKS MECHANIZATION AT WHEAT CROP, FOR THE SOILS' SPECIFIC CONDITIONS IN THE NE AREA OF ROMANIA

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ABSTRACT

In the paper are presented the results obtained by the research team for establishing the optimal solutions of preservative technologies for settling up wheat crop on specific soils in the N-E area of Romania. Research tracked, for different variants of agricultural units the evolution of soils' physical features, the determination of exploitation indexes of the units and crop yields. In connection with the obtained results the authors recommend optimal variants for settling up wheat crop, for soils' conditions from N-E of Romania.

THE AUTOMATIZATION OF RESULTS CONTROL AND THE IMPROVEMENT OF MAKING DECISIONS USING THE PALISADE APPLICATION

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ABSTRACT

As we know very good at this moment, an very important problem for any domain is the automatization of the activities. This paper proposed a study about the usage of the Palisade program pack in the process of substantiation and adoption of decisions.

In the actual society of knowledge, the impact of the new informational technologies was extended even in an important domain of human activity: the adoption of decisions.

The necessity of objecting at the selection process of the most favorable decision lead to the extension of the usage of information technology also in the conceptual phase. The decision tools suite (DTS) and the expert systems have the answer for the computer science workers at the needs of the deciders, used especially in the case of the decisions adopted in conditions of risk or uncertainty.

The PALISADE package of programmers is a support system of decisions, which overlaps the processor tables, increasing the possibility of usage, especially for simulation problems, calculating the risk, building decision trees etc.

MODERN TOOLS AND COMPLEX SYSTEMS FOR FOOD PREAPARATION IN INDUSTRIAL FARMING

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ABSTRACT

In this paper is proposed a on the way the fodder kitchens are constructed and used, ,in order to ameliorate the process of feading fodder to animals from zootechnical farms. These complex fittings, who containing feed mills, mixers or proportioning devices, have the role of mixing and homogenization of the raw material used in obtaining certain fodder recipes.

The electronic equipments and process computers have a vital importance for these fodder kitchens , all this allowing the automatisation of the activities, in order to keep the production going inspite the presence of a human operator. Another advantage implied by the use of computers in fodder production is the fact that the correct obtaining process of several fodder recipes used by farms can be monitorised.

THE DETERMINATION OF ENERGETIC AND QUALITATIVE INDICES OF SOIL WORKS, FOR THE NEW AGGREGATES CATEGORIES TRACTOR - AGRICULTURAL MACHINE

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ABSTRACT

The paper presents the fields experimentation results with different tractor - agricultural machine aggregates, in agricultural units from different country areas, with different soil types, referring to realization of the soil's, respective tractor's working qualitative and energetic indices.