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VEGETABLE GROWING

The variability analyses of characters at carrot variety Ceahlău

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Keywords: Variability, standard breach, dispersion, correlation, carrot Ceahlău, authenticities, genotype.

ABSTRACT

The experiments were accomplished at VRDS Bacau during a period of 3 years, 2005-2007, and sustained through plants development phase's observations and barometric determination over the main characters of authenticity and varietal typicality. The calculation and analyze of variability proved that the variety has little variability for the characters:

- low variability of characters:
  - root length (cm) (CV = 5,74%);
  - diameter at colet (cm) (CV = 8,071%);
  - seedy plant's height (cm). (CV = 7,25%);
- medium variability:
  - diameter of central cylinder (cm) (CV =10,066%);
  - root's weight (g) (CV = 10,075%);
  - quantity of seeds/plant (g) (CV =13,66%);
  - number of floral cane/plant (CV = 18,45%)

The phenotypic correlation coefficients of the main characters at carrot seedy plants, were:

- the root's weight is positively correlated with the quantity of seeds/plant (r1 = 0,808; r2 = 0,810) and with the number of inflorescences/plant (r1 = 0,771; r2 = 0,812);
- the number of seedy stems is very significant positive correlated with the quantity of seeds/plant (r1 = 0,842; r2 = 0,862)

Researches regarding the influence of protection complexes used to control downy mildew *Peronospora destructor* (Berk.) Casp., on onion bulbs, onion neck rot -*Botrytis allii Munn*. and onion maggot - *Delia antiqua* Meig. affecting mean weight of onion bulbs

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Keywords: protection complex, bulbs, means weight

ABSTRACT

Onion's crops are devastated by numerous diseases and pests that severely diminish bulb yields in climate conditions favourable for their development with direct impact on bulb weight and implicitly on production. The healthy maintenance of entire leaf system influences directly bulb weight with positive responses on onion yields level. In the present paper, it has been studied the influence of protection complexes on mean weight of onion bulbs

The influence of the variety and moment of consumption on the quality of tomatoes resulting from crops grown in unheated green houses

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Keywords: tomatoes for consumption when they are fresh, the quality of the tomato

ABSTRACT

In the period of the months of June and July in the past years, the market of fresh tomatoes meant for consumption was characterized by a supply which has constantly exceeded the demand. In these circumstances, it was necessary to introduce recent hybrids, whose fruit should be characterized as well by the maintenance of the commercial qualities for a longer period of time. This paper is providing a presentation of the dynamics of the biochemical composition of the fruit produced by new tomato hybrids, coming from crops grown in unheated green houses.

Researches regarding the influence of varieties and plants density, relates with the number of fruit per plant, on eggplant seeds production

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Keywords: cropping, *Lucia*, *Contesa*, fructification standards, fruit limitation

ABSTRACT

The experiments were effectuated in the year 2007, on the leguminous sector of vegetable gardening department. They followed the varieties and plant's density influence, relates with the number of fruit on plant, about eggplant's seeds production.

Lucia and *Contesa* varieties were studied, on the following densities:

- 70/20cm with 71.428 pl/ha restricted to 2 fruits on each plant
- 70/30cm with 47.619 pl/ha restricted to 3 fruits on each plant
- 70/40cm with 35.714 pl/ha restricted to 4 fruits on each plant
- 70/45cm with 31.746 pl/ha restricted to 5 fruits on each plant
- 70/35cm with 40.816 pl/ha unrestricted number of fruit on plants (control)

Seeding was achieved on March 17th, springing happens on March 23rd and transplantation was performed on April 8th, 2007. At planting date, the seedlings had 61 days.

Planting on the experimental field was achieved on May 23rd and mature fruits harvest was performed at October 15th, 2007 to *Lucia* variety and September 24th, 2007 to *Contesa* variety.

Plant's seed production was swelling with growth number of fruit on plant. On both varieties, the eldest production of seeds were recorded to 71.428 plants per hectare density and limited to 2 fruits on each plant. The average seeds production was 222,85kg to *Lucia* variety and 164,99kg to *Contesa* variety. Seed production obtained using described procedure is significant bigger than the one presented in the literature.

Researches regarding chemical and biochemical components existed in different tomato hybrids

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Keywords: tomato hybrids, solarium, quality, chemical elements

ABSTRACT

This research was due to characterize some hybrids from the point of view of the quality of crop in solarium culture so to recommend of them to the growers in our country.

Results of that culture present the different accumulation of chemical elements, nitrates during the period of harvest, also the accumulation of phosphorus and potassium and gustative characteristics as glucoses, acidity, vitamin C.

Researches regarding the quality and quantity of some tomato hybrids used in our country in solarium culture

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Keywords: *Lycopersicon esculentum*, solarium, hybrid, quality, quantity

ABSTRACT

To introduce tomato hybrids in solarium culture must determine the potential of them from the point of view of their quality and quantity. The quality of tomato hybrids is obtained from the studies of the dimensions and weight of tomato fruits. The quantity of tomato hybrids is to study the earlier crop and total crop.

Epidemiology and control of the pathogen *Fusarium oxysporum* Schl. f. sp. *radicis lycopersici* (Jarvis and Shoemaker) on tomatoes

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Keywords: *Fusarium* crown rot, epidemiology aspects, variety resistance

ABSTRACT

The purpose of this research was to study the influence of temperature and soil humidity on apparition and evolution of the pathogen *Fusarium oxysporum* f. sp. *radicis– lycopersici* attack on tomatoes, under controlled conditions (phytotron, growing chambres). Optimum temperature und soil humidity for producing infections with *Fusarium oxysporum* f sp. *radicis lycopersici* are 20^0C and 60%. The length of incubation period, under these conditions, is 15 days. The maximum risk for developing the attack of *Fusarium oxysporum* f sp. *radicis lycopersici* appear under following conditions: the presence of infection source, 20^0C temperature and 60- 80% soil humidity. Tomatoes cultivars Raisa F1, Crea 5 F1 and Sinatra F1 are resistant to *Fusarium oxysporum* f sp. *radicis lycopersici.*

Reaction of *Vicia Faba* plants to soil and foliar N application and K nutrition

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Keywords*:* nitrogenous activity, nitrogen nutrition, nodulation, potassium nutrition

ABSTRACT

The effect of different rates and methods of fertilizer nitrogen application and potassium nutrition on the root nodule formation of *Vicia faba* plants and on their nitrogenous activity was studied. It was found that fertilizer N depressed the nodule formation and nitrogenous activity, but inhibitory effect of N was smaller when it was supplied to the leaves instead to the soil. Plants growing at higher K level were in a position allowing on better development of nodules and consequently higher N2 - fixation.

Cytogenetic effects induced by „*in vitro*" cultivation of shoot tips at *Capsicum Anuum* L.

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Keywords: Pepper, Abnormalities, Mitosis, in vitro

ABSTRACT

The aim of the present study is the determination of the influence of "*in vitro*" tissue culture environment over the evolution of cell division at 3 genotypes of pepper (*Capsicum anuum* L.). The study focused toward the type and frequency of chromosomal aberration that can occur during the cultivation of shoot tips on 3 variants of cultivation medium, characterized through the presence of BAP and Kinetin alone or in association with BAP. The control variant is represented by plants germinated "*ex vitro*" in Petri dishes.

The cytogenetic studies were accomplished in meristematic root cells, stained in Carnoy fixing solution for 24 hours at 4^0C then hydrolyzed with HCl and colour with the basic colouring solution Carr. The cells with chromosome aberrations are in smaller number in "*in vitro*" variants, comparatively with control. The aberration spectrum comprises: ana-telophases with bridges, metaphases with lagging chromosomes, expelled chromosomes or ring chromosomes, multipolar ana-telophases, as well as binucleate cells and interphases with micro-nucleuses.

Irrigation influence on water use efficiency in autumn cabbage crop from Crişurilor plain and irrigation scheduling by pan evaporation method

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Keywords: water consumption, yield gain, Domuța climate index, soil water reserve, drought

ABSTRACT

The paper presents the results research carried out during 1990 – 2007 in Oradea and emphazies the positive influence of the irrigation on soil water reserve, microclimate (Domuța climate index), water consumption, and yield and water use efficiency. The crop coefficients needed for irrigation scheduling were established, too.

Irrigation influence on water use efficiency in potato crop from Crişurilor plain

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Keywords: drought, Domuța climate index, yield, soil water reserve, correlations

ABSTRACT

The paper is based on the researches carried out in a long term trial during 1976-2007 in Oradea on preluvosoil. The influence on microclimate conditions (Domuța climate index) daily and total water consumption yield and water use efficiency are presented. The correlations from soil-water-plant system are quantified, too.

The relation between the pot size and some quality index at lettuce nurseling

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Keywords: lettuce, transplant, size, container

ABSTRACT

The study was realized between 2006 –2007 at didactic field of Horticulture Faculty from Bucharest. I used in this experiment the Everest cultivar as biological material. The nurseling was made in different types of pots. The experimental variants were: V1 (Mt) – alveolar pallets (cells) with 2.5 cm diameter; V2 – alveolar pallets (cells) with 3.0 cm diameter; V3 – Jiffy pot, container with 4.0 cm maximum diameter;V4– nutritive cubes with 5 cm length. During the nurselling growth we made notes regarding the growth. For emphasizing the differences between variants we made measures for nurseling height, number of leaves, total mass, radicular volume. Also at the plants obtained from harvest we determined total mass and number of leaves.

The purpose of study was to correlate the container size with some indices of nurseling quality and edible mass of lettuce to evidence the differences between them. We also appreciate how the nurseling quality influenced on edible mass of plant.

Global Certificate - a guarantee for food safety in primary production for horticulture

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Keywords: *GLOBALGAP*, primary production certification

ABSTRACT

The GLOBALGAP standard, previously known like EurepGAP, is a standard elaborated by the Euro-Retailer Produce Working Group in order to respect and to apply the Good Agricultural Practice. Since 2006 the gfa-ro company is a leader on the market for GlobalGap implementation. Since February 2006, when Leoser made the first GLOBALGAP certification in Romania, more than 50 companies were certified. The Romanian Ministry of Agriculture supported in 2006 and 2007 the EurepGAP implementation 100%, by to the OG 123/2006 and the law 125/2007. In 2008 the support of the Ministry will be of 70%, but no more than 10000 RON. We analyzed some common criteria of our clients and we can say that the interest for this standard, that allows for the farmers the exportation of the fruits and vegetables in the EU and that allows the commercialization of Romanian products on the supermarkets, is continuously growing.

The study of „*re-incubation*”, operation specific for modern technologies regarding cultivation of mushrooms *Pleurotus ostreatus*, on expression of yield potential of HK-35, P-80 and K-12 hybrids

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Keywords: cellulose nutritive substrate, hybrid, incubation, „*re-incubation*”, yield efficiency.

ABSTRACT

Incubation of mycelium as a technological operation of *Pleurotus sp.,* growing process aims the overall spawn of cellulose nutritive substrate by inseminated mycelium, its quality being crucial for obtaining high and upper quality yields.

In this paper, it is presented a new concept regarding incubation, as an important step of modern crop technology known also as “*re-incubation*” which is performed after obtaining first mushrooms corresponding to first harvest. The role of “*re-incubation*” consists in reactivation of mycelium spawning within the cellulose cultivation substrate and thus increasing yield efficiency of cultivated hybrids.

Researches regarding the influence of the "*fazial*" fertilization on the growth and fructification of tomatoes

Gheorghița Hoza, E. Pădurariu, Elena Draghici, M. Velea, Daniela Ciolacu

Keywords*:* tomatoes, fertilisation, plant growth

ABSTRACT

The tomato culture is one of the most important ones and this is the main reason why it has been chosen to be the subject of this experiment. For it were used individually or combined two fertilizers, Cropmax 0,15% and Agroleaf 0,5%, applied in five stages of growing of plants. The best results were obtained by using them individually, fact proved by the capacity of fructification of plants. Regarding the biochemical composition, the fruits fertilized had superior features to the ones treated with control; they had a higher content of C vitamin, mineral substances, soluble dry substance, etc. Another proof of the positive influence of fertilizers on the tomato culture is the fruit production, placed between 5,6 kg/m^2 and 6,4 kg/m^2. Compared with 4,7 kg/m^2 at control, the effect of fertilizers is obvious.

Researches regarding the influence of some ecological fertilizers on the growth and fruit forming of tomatoes

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Keywords: tomatoes, ecological fertilizer, plant growth,

ABSTRACT

The researches were made in 2006-2007, studying the tomatoes in field, using 2 ecological products, Cropmax and Kelpak with 0,2% concentration. These products are aimed to stimulate the growth and fruit forming processes, they improve the metabolism of plants and help them in stress conditions. The products were used in 3 sprinkles in mixture with other products for protection as it follows: once at seedling and 2 times at the culture. The first sprinkle was made when the first flowers appeared and the second one 15 days later. The best results were obtained with Cropmax which gave more flowers per plant registering a growth of 33,4 flowers, one of 30,9 formed fruits, a percentage of 92,04 formed fruits and a production of 10,1 kg/mp. Kelpak gave lower results, the number of flowers per plant was of 32,1, the number of fruits 27, 8, the percentage of formed fruits 87,4% and a production of 8,4 kg/mp.

Effect of the irrigation with saline water on the behavior of 2 soil enzymes urease and saccharase, soil respiration and soil humidity

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Keywords: soil moisture, soil respiration, urease activity and saccharase activity

ABSTRACT

The aim of this study is to show the effect of soil salinity on the soil moisture and the soil respiration and for some soil enzymes specially urease and saccharase. Three vegetable crops were grown in 4 compartments irrigated with water, which contains different salt concentration respectively 0.37 ms/cm for the control V_1, 1.5 ms/cm as V_2, 2.5ms/cm as V_3, 4 ms/cm as V_4. Some soil sample was taken at the depth of 10 cm from each compartment. The results obtained are the following: we had an increasing of the soil moisture with the increasing of the soil salinity. We obtain a decreasing respectively for the soil respiration, the urease and saccharase activity with the increasing of the soil salinity.

Researches concerning the influence of some Romanian photoselective films on the productivity and quality of lettuce and tomato

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Keywords: *Lycopersicon esculentum, Latuca sativa,* high tunnel, photoselective films.

ABSTRACT

The paper present results concerning the influence of some Romanian photoselective films on the productivity and quality of lettuce and tomato plants. Five film types were studied which had different colors and additives for protection against ultraviolet light, infrared light, and water condensation. These films were used for plant protection in high tunnel. As a result of the microclimate changes under the photoselective films the plant growth, yield and produce quality were improved. Remarkable results were obtained concerning the produce quality under the pink and green films for lettuce, and under pink and yellow films for tomato.

Behaviour of some green pepper lines (C*apsicum annuum* l. Var. *Grossum* Sendt) tested in the comparative plots for evaluation

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Keywords: pepper, lines, early yield, total yield.

ABSTRACT

During the 2004-2006 period in the frame of the experimental field of RDIVFG VIDRA 5 green pepper lines created at the Plant Breeding Department of the Institute were investigated under comparative plots for evaluation As control the green pepper variety Export was used. Several observations and morphological determinations were carried out aiming the following characteristics: early yield, total yield, number of fruits per plant, their shape and color. The results emphasized that the best behaviour had the lines L 250 by comparison with the control variety, yielding 10-12 fruits per plant of large size (150-170g) and yellowish green color. This line revealed a total yield higher than the control variety (Export) while its early yield had a weight of over 75% from the total yield.

The influence of nitrogen and sulfur complex on the spreading of *Ceutorhynchus assimilis* (Paykull) in canola crops

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Keywords: cabbage seedpod weevil, *Ceutorhynchus assimilis* (Paykull), canola crops, nitrogen concentration, sulfur concentration, spatial distribution.

ABSTRACT

The incidence of a pest in a particular crop is not an isolated event and must be studied in relation to a larger area. The study investigates the influence of nitrogen concentration and sulfur concentration context on cabbage seedpod weevil (*Ceutorhynchus assimilis*) density in canola crops and how does this relationship can affect the pest density. The goal of the study is to establish the correlation between leaf tissue nutrients concentrations and cabbage seedpod weevil dispersion and to construct a predictive model of spread of cabbage seedpod weevil in canola crops. The research was conducted in a canola crop (*Brassica rapa*) before the mating period of cabbage seedpod weevil in June. The density of cabbage seedpod weevil was found to be in a strong relationship with the concentration of these two nutrients. The findings emphasize the strong link between nitrogen concentration pattern and insects and a week relationship between sulfur and insect density.

Larval development and vegetal biomass consumption of *Trichoplusia ni* (Hübner) under temperature influence

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Keywords: *Trichoplusia ni* (Hübner), temperature, food selection, larval survival, *Brassica napus*, *Brassica rapa*, *Pisum sativum.*

ABSTRACT

The study investigated the role of temperature as one of the principal factors in delimitating survival and feeding of larval stages of *Trichoplusia ni* (Hübner). The preference and selection of food were tested on three host plants *Brassica napus, Brassica rapa* and *Pisum sativum* under the high and low level temperature. It was performed the calculation of daily leaves consumption for each Petri dishes per larva. The data of development and survival was used for plotting the survival rate for each temperature and type of food. All three plant species supported the development from first instar to the fifth instar and the beginning of pupation. ANOVA results indicated a level of statistical significance between three type of food on No-choice and Multi-choice feeding in high temperature and in a low temperature.

The influence of fertilization with green manure and husks of grapes compost in organic garden bean crop

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Keywords: agrochemical characteristics of the soil, yield and quality

ABSTRACT

In order to maintain an optimum condition regarding the level of nutritive supplies of the soil in the organic vegetable technology, the fertilization basis is the organic fertilizers. In this context, at the Banu Mărăcine Research Station of the University of Craiova, they studied the influence of the soybean (*Glycine max*) + fodder radish (*Raphanus sativus oleiformis*) as green manure (the control) and of the husks of grapes compost (15 t/ha and 25 t/ha) on the agrochemical characteristics of the soil and also on the yield and the quality of the garden bean crops. The experience was laid out on a field cultivated in the last two years using organic technologies (2005-2006). The green manure, used as the only fertilizer or together with the husks of grapes compost, improves the soil fertility, by increasing the contain in humus from 2.50% to 3.16-4.00%, in total nitrogen from 0.131% to 0.216-0.259%, in mobile phosphorus from 68 ppm to 86.4-92.0 ppm and in mobile potassium, from 205 to 252-404 ppm. The 25 t/ha husks of grapes compost doses, applied together with green manure, determines the highest yield level, 14.8 t/ha. The positive yield difference, by 3.1 t/ha (26.5%), compared with the control, is significant from statistical point of view. Concerning the nitrate accumulation, the level of 128-195 ppm is situated under the maximum accepted concentration (200 ppm).

The monitoring of the nitrates content for an organic and non-organic vegetables assortment cultivated in the S-W of Romania

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Keywords: conventionally and ecologically, NO_3, NO_2, green manure

ABSTRACT

The discretionary and in large quantities utilization of organic fertilizers, but especially of chemical stimulants on a basis of nitrogen, determines the accumulation in vegetables of nitrates and nitrites that exceed alimentary safety limits. The research carried out has had for purpose the monitoring of the content of nitrates and nitrites in tomatoes, lettuce, cabbage, carrots, onion and green beans grown conventionally and ecologically, the vegetable farms having been placed on different types of soil, such as: cernisoil, luvisoil and psamosoil. In the ecological system, on all the studied species, the content of nitrates is situated far bellow the maximum allowed concentrations and the nitrates have not been identified. In what concerns the conventional crops, excepting tomatoes, on all other vegetables, the quantities of NO_3 surpass the maximum allowed concentration, the values being higher in the case of luvisoils. The species carrot and lettuce have registered the highest accumulation of nitrates, of 884-2406 ppm, respectively 3537-4029 ppm, the MAC for carrots being 300 ppm and for lettuce 2000 ppm.

Researches concerning the particularities to seed plants of the chive onion (Kind) variety Liliana

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Keywords: *Allium caepa*, phenotypic, vegetative and generative

ABSTRACT

In this work is presented a little part from the researches which were made in the sight of the settlement of genetic determinism of "the number of floral draw bars" to the onion of chive.

The floral draw bars are emitted by the developed and vernalized buds from the plants mother.

The study of technological elements in the process of red orache (*Atriplex hortensis f. rubra*) seed production

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Keywords: crooked and uncrooked plants, bi factorial experiences, rehearsals, graduations

ABSTRACT

The studies analyzed the bi factorial experiences (A and B) with two (A_1 – variants with uncrooked plants, A_2 – variants with crooked plants) and also six graduations (B_1 : 10 cm between plants/row, meaning 133 333 plants/he; B_2 : 20 cm between plants/row, meaning 66 666 plants/he; B_3 : 30 cm between plants/he, meaning 44 444 plants/he; B_4 : 40 cm between plants/row, meaning 33 333 plants/he; B_5 : 50 cm between plants/row, meaning 26 666 plants/he; B_6 : 60 cm between plants/row, meaning 22 222 plants/he).

Study concerning the properties of some diazotrophic rizobacteria stains for their utility in sustainable agriculture technologies

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Keywords: *Rhizobium sp, Bradyrhizobium* sp**,** survival capacity, edaphic actinomycetes

ABSTRACT

The edaphic diazotrophic bacteria have the possibility to obtain the necessary nitrogen for protein synthesis from the huge gaseous reservation, respectively from atmosphere. The greatest potential of nitrogen fixation is possessed by symbiotic genera like Rhizobium and Bradyrhizobium. It was tested the survival capacity of 16 stains, in relationship with actinomycetes representants. The symbiotic bacteria was *Bradyrhizobium japonicum*, *B. lupini, Rhizobium phaseoly*, *R. leguminosarum* var *cicer ,* stains wits specificity for *Glycine max , Phaseolus vulgaris, Lupinus albus* si *Cicer arietinum*. The obtained results shown intra and interspeciffical differences concerning the resistance to antibiotics produced by edaphic actynomycetes.

Yielding capacity of some *Pleurotus ostreatus* mycelia originating from spores

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Keywords: multispore cultures, monokaryons, fertile dikaryons, primordia, sporophores

ABSTRACT

Fertile *Pleurotus ostreatus* mycelia obtained by sporal cultures method have been cultivated on lignocellulosic substrates in order to fructify. They were tested for the yield capacity, together with other two commercial strains and one strain isolated from nature (wild-type).

Two variants of substrate have been used: wheat straws only (S1) and wheat straws mixed with corn cobs (S2). The best results were obtained with the mixture of straw and corn cobs. When cultivated on both types of substrate, one of the multispore cultures (421/I) yielded significantly higher than the commercial strain (P80) used as control.

Researches on the use of the spore cultures for obtaining *Pleurotus ostreatus* commercial spawn

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Keywords: pure cultures, basidiospores, monokaryons, electrophoresis, isozymes.

ABSTRACT

Pure cultures of *Pleurotus ostreatus* isolates with various origins have been examined collection stock-cultures and wild–type isolates (new strains from natural soils). Mature fruit bodies were obtained from these pure cultures during fruiting trials. Their basidiospores were used in order to obtain monospore and multispore cultures. These spore cultures were studied for their growth characteristics on agar plates. The possibility to obtain fertile dikaryons by mating pairs of compatible monokaryons (controlled hybridization) or by mixing multispore cultures (random hybridization), has been tested too. In order to characterize the hybrids as well as the parental strains, electrophoretic pattern of total proteins or of peroxidase isozymes was examined. The results obtained allowed the selection of some strains that presented increased performances, useful for commercial purposes.

Studies about the influence of the hybrid and the density in the fall crop of broccoli

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Keywords: *Brassica oleracea, convar. botrytis var. italica* Plench (1808), autumn crop, nutrition space, hybrids, production

ABSTRACT

In Romania, broccoli is a relatively new vegetable, being cultivated on limited surfaces. These species tend to have a bigger and bigger presence among the vegetables, especially because of the therapeutic effect recently discovered of protection against the cancer. The purpose of the researches was to outline the influence of the density in the development in the crop of three hybrids of broccoli, in order to obtain a better technology and an improvement of the production. As a biological material, there were used the following hybrids: Chevalier (Asgrow-USA), Milady (Asgrow-USA), and Clx3501-Ms (Clause-France). There were studiet four densities: 3,7 (the control variant); 4,1; 5,7; 6,6 plants/m^2. The biggest mean main production was obtained at a large density 6,6 plants/m^2 (36,39t/ha at Chevalier, at Milady 29,26t/ha and at Clx-3501Ms 24,39t/ha), but the inflorescences were smaller in this case (0,546 kg/plant at Chevalier, at Milady 0,439 kg/plant and 0,366 kg/plant at Clx-3501Ms). At a small density (3,7 plants/m^2), there were obtained the biggest inflorescences (0,760 kg/plant at Chevalier, at Milady 0,558 kg/plant and at Clx-3501Ms 0,490 kg/plant), but the production was smaller (28,14t/ha at Chevalier, at Milady 20,66t/ha and 18,14t/ha at Clx-3501Ms).

ORNAMENTAL PLANT & LANDSCAPE ARCHITECTURE

Preliminary results concerning the micropropagation "*in vitro*" of *Jasminum tortuosum* Willd. and *Murraya exotica* L.

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Keywords: differentiation, explants, culture medium, meristems

ABSTRACT

Jasminum tortuosum Willd. and *Murraya exotica* L. are usually propagated by classic methods. The researches aim the *in vitro* propagation possibilities of both flower species, trying to avoid the classical propagation methods inconvenient. In this paper is treated the differentiation stage. There have been tested four culture mediums, the bud positions on the shoot and the prelevation time of the meristems, and established them influence in the differentiation phase.

Research on the growing and the quality of *Euodia hupehensis* Dode (*Rutaceae*) seedlings

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Keywords: magnetic water, generative propagation, variation, stratification, quality

ABSTRACT

The presowing treatments at *Evodia hupehensis* seedlings are very important. In this research we establish the best method to obtain in first year the best yield of saplings at the best quality. The goal is to determine the influence of the presowing treatments upon the biometrical parameters and seedlings production, using native seeds of *Evodia hupehensis* which is an exotic tree, with high ornamental value.

Researches concerning the influence of organic and mineral fertilizations upon the growth and flowering of *Euphorbia pulcherrima* Willd. ex Klotzsch potted plants

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Keywords: Euphorbia pulcherrima, mineral fertilization, organic fertilization

ABSTRACT

Our researches intended to assess the influence of organic and mineral fertilizations upon the growth and flowering of ***Euphorbia pulcherrima*** plants**.** The experiment was conducted over a two-year period, 2006 and 2007, and included eight experimental variants: a control variant, which received no fertilization, four mineral fertilization variants and three organic stage fertilization variants (table 1). The plants' growth and flourishing were studied with the help of the following biometric observations: the number of shoots that have already started to grow after the cuttings' pinching, the plant height, the number of nodes for each shoot, the bracts number during flowering and the bracts rosette diameter. The obtained results highlight the fact that complex mineral nutrients fertilization (which include both macro and microelements) supplied in a liquid form has the most favorable impact on Poinsettia plants growth and flourishing.

Researches concerning the influence of the rooting media on the cuttings' rhizogenesis of *Euphorbia pulcherrima* Willd. ex Klotzsch

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Keywords: *Euphorbia pulcherrima, cuttings, rooting media, rhizogenesis*

ABSTRACT

Our researches intended to assess the influence of the rooting media on the cuttings' rhizogenesis of ***Euphorbia pulcherrima***. Six rhizogenic rooting media were studied, four of them being simple and two of them mixed, over a period of two years, 2006 and 2007. The cuttings rooting degree was expressed by the roots' volume formed at each cutting's basis. Observations and measuring were made also on the cuttings' length and leaves number. The obtained results highlight the fact that the most favorable rooting media are the perlite and peat pellets.

Studies for Improve the Vegetative Propagation of *Pelargonium* spp.

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Keywords: stem cutting, rooting, *Pelargoniun spp.*, vegetative propagation

ABSTRACT

Pelargonium sp. belongs in the family *Geraniaceae*, has approximately 11 genera and 800 species in subtropical and temperate regions of the world. There are approximately 270 species of *Pelargonium* which occur in S-E and NE Africa, Australia and New Zeeland. Their mass propagation is performed using cuttings or seeds, (Mithila et al. 2001). In the last period in vitro propagation it is more efficient method. Petioles gave significant yield difference over 6 cm vine length and generally showed high potential for vegetative propagation in terms of rooting ability and survival rate (Lewu, Grierson and Afolayan, 2006). In our researches a study was conducted to determine the best method for vegetative propagation of three species of genus *Pelargonium* (*P. zonale, P. peltatum, P. grandiflorum*). A study was conducted in two separate experiments. In the first experiment, three stem tip cuttings (5, 8 and 12 cm) of the species were rooted in substrate experiment in a green house. In the second experiment, three substrate tips were used for rooting.

Data were collected and analyzed on various growth and development indices. In the first experiment, the 8 cm shoot length exhibited best result for different parameters measured. The substrate perlite + peat (1:1) gave the best results for all species.

The role and the evolution of urban green structures and the possibility of developing an ecological Bucharest.

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Keywords: urban planning, industrial wasteland, spatial resources, urban policy

ABSTRACT

In time, especially after World War II - in the context of industrial development and the ecological imbalances caused by it - urban green structures have become, one of the foremost aspects concerning the strategies for urban and land development. Nevertheless, Bucharest is yet to develop such a strategy, despite the fact that the deindustrialization has generated in its wake important resources that can be used for this precise purpose.

The park of the Cantacuzino Palace – study on the valuation of the historic landscaping monument

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Keywords: restoration, revitalization, protection, analysis, performing of inventory, degradation, interventions.

ABSTRACT

The valuation of historic gardens and parks refers countrywide traditionally to the physical condition thereof. Due to the shortages in maintenance, management, financing, as well as due to the absence of a national strategy on preservation, amelioration and capitalization of historic monuments of landscaping interest, we currently notice the accelerated degradation of the few landmarks of the national landscaping. On the list of historic monuments from Romania is also the estate of the Cantacuzino family from Floresti, located on the left bank of the Prahova River, sheltered by the Northern Sub-Carpathian hills. The landscaping study of the park of the Cantacuzinilor Palace aims at identifying the proposals to intervene in the restoration of the historic monument further to a more rigorous inspection of the objectives performed at regular time intervals. In the valuation shall be analyzed systematically the two material components: vegetal elements and mineral elements in historic-stylistic and aesthetic-functional view. Further to quantifying the results, the value of the emergency degree of the intervention in the restoration of the historic landscaping monument shall be established.

Rediscovering a forgotten garden - research upon a monument garden, part of the historic assembly of the Ottetelişanu Mansion

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Keywords: Patrimonial value, forestry association, evolution, transformation, restoration.

ABSTRACT

This study approaches the present state of a monument-garden, which for approximately 158 years has inconstantly changed concurrently with the changes from the Romanian society. This case is not a singular one in Romania, but here it seems that events led to a paradoxical situation: on one side, in legal view, the fact that the garden has never had the status of "public garden" protected it to a certain extent from the flow of human masses and from the decision to adapt the space to irreversible rehabilitation (the case of the Cişmigiu Garden), helping thus up to now the possibility of the initial restoration. On the other side, the idea of a professionally-fitted garden – one of the first gardens fitted out in this manner in Walachia – included in a patrimony monument-assembly, a museological benchmark for the future generations was "forgotten". The own evolution of the garden in this case is interesting. The natural elements participated in a survival battle and nature entered its role where it was only desired to suggest it. The rehabilitation attempts in the past led to the unsuccessful transformation of the built elements, leaving much too obvious marks upon the romantic fit-out style. In exchange, the vegetation has developed according to own rules and many specimens resisted in time to the aggressions and are now grandiose samples, natural monuments. The observance and determination of the species on-site disclosed an extraordinary conduct: exotic samples brought among the first into the country, have coexisted with the native ones, adapting themselves perfectly to the conditions of the site. The atmosphere has gradually become that of a forest and characteristic herbaceous vegetation has developed. Thus, the current forestry association of the Ottetelişanu Garden was classified in the geo-botanical category of the historic area, of waterside silvosteppe.

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Composition structures in creating historic gardens. The Cişmigiu Garden

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Keywords: Concept, geometrical construction, art, landscape project, restauration data.

ABSTRACT

In this paper we analyzed the manner in which the landscape artist Carl Friederich Wilhelm Meyer designed the project of the Cişmigiu Garden, in the first half of the 19th century. Meyer created this garden according to well-known composition principles, obtaining a unitary, harmonious space, well-proportioned within the urban site. The composition quality defines an artistic creation in aesthetic view. The application of the composition norms by the creator upon his projects placed them among works with aesthetical qualities. Being familiar with it, we can estimate the quality of a landscape work. In case of a historic accomplishment, the deciphering of the composition structure and of the structuring manner in space, according to a certain general style, can bring us closer to the knowing of a personal fit-out manner of the landscape artist.

Ten years of Landscape Architecture education at the Bucharest Faculty of Horticulture

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Keywords: anniversary, development, students, achievements, cooperation

The 60th Anniversary of the Faculty of Horticulture is also a decade of Landscape Department's celebration and, as we hope, will further add a new dimension of faculty's national and international prestige.

Ten years ago a Government Act decided on the establishment of the first landscape architecture school in Romania within the Faculty of Horticulture of the Bucharest University of Agronomic Sciences and Veterinary Medicine (USAMVB).

Through this debut the Romanian school has answered the need to provide skilled specialists in landscape creation, change, restoration, protection and management. Moreover, it has followed the example of the studies in European Union member countries where landscape architecture takes an important place within academic subject areas. This follows from its mission statement as defined by the EFLA (European Foundation of Landscape Architecture): the conservation and development of all kinds of landscape with all their related values (environmental, social, cultural, esthetical, historical and economical) that both present and future generations should enjoy.

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The Kiseleff road and garden as identity marks

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Keywords: historical green areas, urban landscape, cultural identity, *genius loci*, green oasis

ABSTRACT

Historical parks and gardens of Bucharest seems to be destined for today to an unfair neglect, thanks to all the changes produced in common mentality by the new throwaway society, but more, because of greats economic interests which tend to monopolize every green centimeter, converting in this way, the urban oasis in unfailing money factories. Old places for social practice of leisure, green areas with heritage value are situated near current center of the city. That's why the high prices of these lands create an ascending pressure to decrease of free building spaces from central areas. The link between culture, environment and community seems to be stronger if the people are conscious about the historical significance of living place, urban landscape being a powerful element of identity.

Preliminary results regarding the fertilization field culture of *Gladiolus gandavensis*

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Keywords: field culture, *Gladiolus Gandavensi*, fertilization system

ABSTRACT

Gladiolus specie is one of the most cultivated flowers around the world. It has about 250 species from which *Gladiolus Hybrid* is the most use specie in culture. The experience was made in a private farm from 1 Decembre village, Giurgiu County. The experiment had 6 variant and 4 repetitions. The variants of fertilization had different rate of nitrogen, phosphorus and potassium. The applications of fertilizers were at three periods of vegetation:- at the planting of tuberobulbs at 29 April 2006;– at the stage of 3-4 leaves respectively at 12 June 2006;– at 5-6 leaves, respectively at the 3 July 2006. The fertilizers used were NH_4NO_3, 34%N, superphosphat, 17% P_2O_5, K_2SO_4, 52%K_2O. The analyses of total forms of nutritive elements from the *Gladiolus* leaves showed that the fertilization with $N_{200}P_{100}K_{150}$ and cu $N_{100}P_{200}K_{150}$ determined a rapid absorption of nitrogen and phosphorus at the first period of analyze and at the second period of analyze the values of these elements were lower; The potassium analyze of leaves showed that the absorption of that element was lower at the first period of analyze and than the absorption was accelerated. The highest values of potassium in leaves were registered at V5 fertilized with $N_{100}P_{100}K_{200}$ and variant 6 fertilized with $N_{200}P_{200}K_{200}$.

New trends in public urban parks – The Public Hanging Park

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Keywords: green space, urban Public Park, urban flagstone

ABSTRACT

In this paper, I will briefly present the new trend in urban public parks in the context of a reduction of the space reserved to it, being the hanging urban park, the descendant of the renowned hanging gardens of the Semiramis. The hanging system, which has been developed in the '70s, is based on the construction of a fully artificial soil on a waterproof concrete cover supported on structural pillars, which altogether make up a complex that needs a draining system. This way, these green spaces can overhang traffic paths, parkings, or underground commercial or cultural areas, etc. The first urban hanging green systems were built in the French Capital and enjoyed considerable success. There is the Planted Promenade (*La Promenade Plantée*), which is a green promenade which floats at the level of the second storey and crosses an important section of the city – arrondissement XII – and the Atlantic Garden (*Le Jardin Atlantique*), which is a hanging public garden over the Montparnasse high-speed railway station.

Behaviour in the multiplication process a some ornamental species/varieties coniferous with high ornamental value

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Keywords: ornamental species/varieties, multiplication, cuttings, rooting biostimulators

ABSTRACT

The ornamental species and varieties of coniferous are of great decorative interest being utilized in landscape arrangements as simple samples or in together with others. The propagation of these ornamental varieties is usually difficult due to their specific biological features. The commercial extension of these ornamental species/varieties was done into a less extent due to a low rate of propagation, although these was a great demand as well as their difficult propagation on studies will be focused on: behavior of the some ornamental species/varieties: *Tujopsis dolobrata, Tsuga canadensis, Juniperus chinensis „Aureospicata”, Juniperus chinensis „Blaauw's Varietat”* şi *Picea abies „Albertiana Conica”*during the initial multiplication process. The studies carried out at the Research Institute for Fruit Growing have had in view the response of five ornamantal species/varieties of coniferous to propagation by softwood cuttings, employing Radistim 1and Radistim 2 under artificial mist. *Thujopsis dolobrata* and *Tsuga canadensis* varieties showed the highest rooting percentage in all treatments (42,8-95,4% and 41,2-91,4%) and the little rooting percentage (10,4-51,2 %) of the *Juniperus chinensis „Blaauw Varietat”*. Application of the biostimulators (Radistim 1) has obviously improved the rooting yield versus the untreated control, treatment.

Research on behaviour of *Magnolia soulangiana* in the multiplication stage of "*in vitro*" culture

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Keywords*:* phytohormones, micropropagation, explant, culture media, microcuttings

ABSTRACT

This article presents the realizations of the tehnology of producing biological material with rapidly clonal multiplication with reference at the phase of *in vitro* multiplication. Magnolia has a different behaviour in the micropropagation phase; the results were influenced by the composition of culture media. For the magnolia multiplication proved to be efficient the concentration of 5 mg/l 2iP when the rate of multiplication reached 5 microcuttings/explant.

The optimization of the quality of the public green space system in District IV- Bucharest

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Keywords: optimization, spatial configuration, functional-ecological quality

ABSTRACT

A possible model of optimization of the quality of the urban green space system ensemble, takes into consideration the three principle criteria of amelioration of the quality of the urban green: spatial-urban configuration, functionality and ecological aspects. These criteria generate proposals of optimization of the ensemble quality of the public green space and apply to different approach bearings: general bearing (the green system in its ensemble), zonal bearing ("the green pen") and the local bearing (green entity).

Research as regard to the biologically and ornamentally valuation of a fifteen gladioli cultivars assortment

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Keywords: gladioli, phenology, growth, development

ABSTRACT

Gladioli occupy a main position in the summer Romanian cut flowers assortment. Flowers's esthetical quality, between which it can be mentioned a slender aspect of the floral stalk and the wealth of the distinguished colors, as well as plant flexibility at different technological variants is trumps by which it manages consumers and producers requirements. Because cultivars behavior is different in function of the ecologically conditions and the applied technology, sometimes their reaction tends to compromise decorative features or even gradually disappearance by inadaptability. In the present work there was performed an ornamentally and biologically valuation of fifteen Romanian and foreign cultivars, cultivated in the naturally conditions of the South Romanian area.

FRUIT GROWING & TECHNOLOGY

Beginnings of alcohol distillation at world level and in the Romanian principalities

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Keywords: fermentations, alembic, elixir, brandies, calvados.

ABSTRACT

At the beginning the production was sporadic, reduced and unequal. The phenomenon was not understood, they talked about spiritus vini (geist in German), «the spirit» that was believed to come from the distillation heat or fire (vinum adustum, Branntwein - brandy). The Salerno school (in the south of Italy) takes over through the Arabian channel the practical methods to obtain the alcoholic distillates for medical purposes. Arnauld de Villeneuve/Villanueva (1240-1311), a famous doctor and alchemist from Catalonia and his disciple Raymond Lulle study the distillation preparing the first medicinal beverages (that often evolved into liquors).The distillation of alcohol has been mentioned in writing since the Arabian Middle Ages. Some authors consider that the distillation of alcohol, before being spread by Arabs, would have existed in empirical variants in China and Tibet. Other hypotheses make the alchemists from Alexandria (Egypt) responsible for the development of the first tools necessary for distillation, the vases called "ambix", from which comes the term "al-ambix = alembic". Zosimos of Panopolis (3rd century-the beginning of the 4th century A.D.) and Hypathia of Alexandria (350-415 A.D.) wrote important papers on distillation. The Persian doctor and alchemist Rhazes (Abu Bakr Mohammad Ibn Zakariya al Razi, 865-925 A.D.), improved the distillation methods obtaining ethylic alcohol and sulphuric acid, substances non-separated up to him in pure distinct state.

For half a millennium, alcohol will be used only to produce remedies, macerates of medicinal plants (el-ixir, liquor). Words like alcohol, alembic and araq are of Arabian origin.

Research to improve blueberry multiplication technology by hardwood cuttings

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Keywords: highbush blueberry, multiplication

ABSTRACT

Even if Romanian research in the field of blueberry culture are in progress since 1968, nowadays areas cultures with a commercially purpose are extremely reduced. In spite of the fact that in the last years the interest for blueberry culture registered a remarkable progress, large areas of the founded plantations have been used the imported biological material. In fact, during years 1980 at Bilcesti there was produced biologically material in a multiplication sector, with a capacity of 100.000 plants annually.

In such conditions, we have been proposed to improve the multiplication technology, with a view to obtain plants at an equally or superior quality, as against those imported. The main purpose of our experiences was to obtain rooted cuttings with a superior vigor, comparing with the standard technology. So, there were performed experiments in protected areas covered with resins (PAFS) characterized by different thickness and transparence. The protected areas have been build in two variants, as greenhouse type, with a roof in two "water" and with half round metallic skeleton - Finn type. The performed determinations emphasized that the best rooting results there were obtained in the protected areas with half round roof, with PAFS with a smaller thickness than 1 mm and a high transparence (over 90%). In such conditions, cuttings had a superior root system volume and growing during the first year has been in a sum of 28 cm at Coville and 23 cm at Blueray, respectively. In the second year, during rooted cuttings fortification the best results there were obtained at variants from the half circle protected areas, with PAFS under 1 mm thickness; for cuttings transplanted on pots with a diameter of 14 cm, growing being in a sum of 92 cm at Coville and 83 cm at Blueray, respectively. After observations performed during 2006-2007 period, it can be noticed that for planting, fortification of the biologically material during 2 years can decisive contribute to accelerate the field growing rate, with the condition to use in the second year pots or bags with a volume of minimum 2-3 L.

Evaluation of disease susceptibility of some native sour cherry genotypes, *ex situ* collected into Romanian National Germplasm

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Keywords: *Prunus cerasus*, evaluation, disease susceptibility, native germplasm

ABSTRACT

Romanian territory is located in the extended area limits of the geographic genetic center for cherries which grows wild or weedy, in a high genetic diversity, all over the country. In the past, cherry has been propagated to a large extent by seeds or suckers, resulting a wide range of variability. Subsequently, by selection and clonally propagation of valuable individuals within seedling population from different growing areas, many local cultivars were framed. Additionally, as a result of breeding programs started more than 50 years ago, 18 new varieties were released. Some of them are preserved in cherry collections which include 174 sour cherry (from which 43 are autochthonous biotypes, breeder's lines, old and new cultivars) accessions held in duplicate in two different locations. To give new opportunities for conservation of cherry biodiversity and sustainable use of genetic resources, 43 native genotypes have been evaluated regarding their disease susceptibility to *Blumeriella jaapii* and *Monilia laxa,* according to the numerical scale of IBPGR descriptors.

A study of qualitative properties of certain cherry cultivars

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Keywords: multiple correspondence methods, variance-covariance matrix.

ABSTRACT

A study of a set of qualitative properties of some varieties of cherries is made by means of the so-called method of multiple correspondences (founded and settled by J.-P. Benzécri and collaborators). More exactly, a study of the intercorrelations between some qualitative properties of certain cherry cultivars is performed. The main result consists in determining the coordinates of these cultivars as well as of the qualitative modalities of their analyzed qualitative properties along the principal directions of the set of characteristics used in analysis. These coordinates allow us to build a graph representing simultaneously both the cherry cultivars and the modalities of their qualitative properties, what suggests us to make some remarks about the possible similarities between cherry cultivars and about the compatibilities between the qualitative modalities of their qualitative properties.

The Structure and the Biotechnological Value of the Compact Columnar Apple Tree

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Keywords: hybrids, spur fructification, productivity potential, disease resistance

ABSTRACT

This paper treats the columnar apple type which is consider to have early productions and with maximum parameters. Nevertheless, the plant material proved to be much expensive and the great expected yields had realized every second (two) years. In these conditions, the members of the Pomiculture Desk from USAMV Bucharest have directed the researches for obtaining the compact-columnar apple type with a simplified technology and productivity efficiency at highest parameters.

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Ecologically products consumer – demand analysis and stores potential

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Keywords: ecologically, consumers, distributions, questions, products, price

ABSTRACT

This study's objectives are to underline consumers preferences and their perception regarding the ecologically products. The image of a naturally and healthy product which doesn't contain chemically residue are between the most important features for the consumer. In fact, exist many consumers who request products with a quality and healthy guaranty, but they consider that these characteristics are intrinsic product features and are not disposed to pay a higher value.

Monitoring of some pathogen attack specifics to stone fruit trees species cultivated in Bucharest area

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Keywords: fungus, pathogen, attack

ABSTRACT

In pedo-climatically conditions from Bucharest area, stone fruit trees species preferred to agricultural cultivators are plum tree and apricot tree. These species are, usually, the most frequent in small or average orchard dimensions of the agricultural producers. Regard as plum tree cultivation, these species is perfect because present a high adaptability capacity at environment various conditions and can capitalize a large scale of soils, with different fertility degrees especially where other fruit trees species are not recommended or hasn't good efficiency. Concerning at apricot tree culture, this is good to conditions from South of the country. Been known like a species with low adaptability capacity, the apricot tree is value for that zone while winter conditions has no implicating consequences for summer period. Species with commune pathogens, plum and apricot trees have finding close in all orchards near Bucharest. Biology, ecology and treatment possibilities knowledge present a great importance for treatment schemes realizations an applying of some products with efficiency for commune disease of the two species.

Nowadays research preoccupations as regard to *Venturia inaequalis* fungus apple interactions

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Mini-review of literature

Keywords: *Malus domestica*, apple scab

ABSTRACT

Plants are exposed to many biotic and abiotic stress factors and understanding the mechanism of their responses represents a precondition for a sustainable agriculture and for a high crop quality, in the context of the new concept of vital quality. Apples belong to the main fruit species and the main objectives of apple breeding in a number of breeding stations worldwide and also in Romania include: fruit quality, resistance to biotic stresses, environmental adaptability, changes in tree habitat, fruiting characteristics and yield efficiency and constancy of production. The European market for fresh apples is the largest in the world; therefore, the best strategy for the European fruit sector is to promote quality, safety and sustainable production system. Apple scab, caused by *Venturia inaequalis* (Cooke). Wint. is the most serious disease of apple (*Malus* domestica* Borkh.) and a limitation to apple production in the world, despite years of research and development. Innovative approaches for early detection of plants pathogens and characterisation of their impact on plant productivity and crop quality, taking as a case study apple scab produced by the fungus *V. inaequalis* must be develop. Next to the classical research methods, nowadays attention is focused on the new tools of spectroscopy, to detect early alteration induced by the pathogen, to discriminate between resistant and susceptible interaction or to distinguish and classify plants pathogens.

Studies concerning the quality of some walnut oils and grapeseed oils commercialized in Iaşi

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Keywords: edible oils, acidity, peroxide index, spectrophotometer, humidity

ABSTRACT

The Romanian edible oil market has enriched in new sorts, less known for consumption, such as grapeseed oil and walnut oil. These oils are very valuable, due to the essential fat acids, vitamins, antioxidants and other bioactive compounds they contain. The hypo cholesterol value of the essential fat acids is tightly related to the global quality of lipids from diet, the total caloric share as well as the size of the ratio between the essential polyunsaturated fat acids and the saturated fat acids (P/S) that must be supra-unitary with a value over 2. The production of grapeseed oil has developed consequently the economic and the ecological belief of capitalize the offals, so that the row materials be processed completely. The commercial units from Iasi from where come the samples studied are Carrefour, Gimma, Kaufland, Sellgros. In the vegetal oils, the contents of phosphatides vary between 1 and 2%, in the crude oils it varies depending on the nature of the raw material and technology (press oil or extraction oil). Among the substances always accompanying the glycerides (triacil glycerols) from the crude oils, we can also find the free fat acids that are extracted from oil by alkaline neutralization. In the presence of the atmospheric oxygen, the fat acids from the composition of fats may partially oxidize forming peroxides or hydro-peroxides. Their formation is noticed in the process of becoming rancid of fats and also during their dryness. This way, the peroxide index serves as an indicator of the oxidative changes suffered by fats. Through the refining process, they remove accompanying substances to make oil able to be used in alimentation or to insure the organoleptic features required by the standards within the validity terms.

Precocity and production potentialities of some apple varieties, grafted on M9, in a large density plantation

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Keywords: variety, parent plant, precocity, bearing branch, spur.

ABSTRACT

Studies on precocity in yielding of some apples varieties, grafted on vegetative parent plant M9 were tried to give an answer to the major objective from fruit growing, concerning yield increasing from the first years of orchard with the purpose of recovering in short time losses from the plantation.

The behaviour of some raspberry varieties cultivated in the Banat area *(Rubus idaeus L.)*

Mirela-Monica Enachiuc, E. Drăgănescu

Keywords: raspberry, behaviour, varieties.

ABSTRACT

From the data registered during the years of research, we can draw the conclusion that raspberry varieties cultivated in the sylvo-steppe conditions of the Banat area, react better if the right agro-technique is applied, starting with a good exposure, preparing and fertilizing the soil, ensuring the right amount of water. All these also ensure a constant production throughout the years. Protection against floods, dryness and late spring frosts is important as well. The Latham variety shows the highest annual growing in 2006 and 2007. The size of the berry has a variable characteristic within the same variety, according to the flowering time, the pedo-climatic conditions, the applied agro-technique etc. Still, each variety has a certain characteristic size. The research that has been undergone by this moment, are limited in Roumania and they do not refer to the area where we have done our research. It is desired that the cultivation of raspberry should be promoted, mainly because of the qualities mentioned above.

The quality of apple influenced by the area of culture

D. Hoza

Keywords: apple, varieties, eco-pedological condition,

ABSTRACT

The quality of fruits is very important from two points of view: to select genotypes and to zone correctly the varieties, in order to efficiently value the resources from a certain area.

The culture area had a direct influence on the varieties studied. None of the varieties had a well behavior in all areas, so the assortment was established depending on the behavior of varieties. For the three features studied: the average weight of fruits, the content of dry substance and the taste score, the varieties had different behaviors. Each of them had high values for two of features and smaller for the third one. The Starkrimson variety proved adjustable to Bistrita conditions, where all the parameters studied had big values.

The quality of fruits remains one of the major concerns of fruit growing farmers in order to efficiently value the production. Except the biological features, the quality is influenced also by the area and the technology applied on culture. The present paper presents the results obtained during the analysis of fruits exposed at the 2007 autumn fruits contest, original from different areas.

"Florina" apple tree breed behaviour in different systems of crown pruning

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Keywords: pruning; designing; variants; fruit formations; skeleton branches.

ABSTRACT

The present study is meant to give the fruit farmers on dambovita valley a practical answer so that they could achieve the desired goals and to establish some strategies of managing and maintaining the apple tree orchards intended for biological yield, choosing the crown type being a key element for the capitalization of the fructification potential of these breeds. Florina trees, immune to the apple scab (*venturia inaequalis*) but partial resistant to the powdery mildew of apple (podosphaera leucotricha), planted in 2000, were studied. To improve the biologic potential of this vigurous breed 5 crown shapes were used: multilevel vase, slender spindle, bush-vase, fruit cylinder, discontinuous pyramid. Their results were compared to the typical crown that is dominant on dambovita valley. These crown shapes were taken into an experiment with 6 variants, each repeated 3 times. 3-4 trees were taken in each repetition, adding up to 70 trees. The results obtained after 3 years of crown shaping, which reflect the healthy growth of the trees,show that,compared to the testifier, the biometric values(trunk height, trunk diameter,tree height, crown volume) vary, the maximum values being reached in case of the fruit cylinder and the minimum ones for the bush-vase. Analysing the number of fruit formations, we can see that "florina" trees beared fruits mainly on short branches and less on long branches. This peculiarity will be the starting point for establishing the pruning method. Comparative to the average yield and the number of fruitful branches, the testifier distinguishes itself (the voinesti crown type) followed by the fruit cylinder the smallest yield is given by the discontinuous pyramid followed by the vase types of crown. These facts conduct us to the main conclusion that the voinesti type of crown is a suitfull one for"florina" trees, while the "bush-vase" is not recommended for the vigorous breeds of apple. The "fruit cylinder" crown is also recommended because, under the conditions of the present experiment this type of crown had values close to the maximum concerning the yield and the fruit load also having the advantage that it needed little interventions for shaping and maintaining.

The behavior of some nectarine varieties in conditions of Didactic Station Timişoara

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Keywords: nectarine, varieties, fruit binding degree, production, estimative production

ABSTRACT

The peach tree is the most important species by its fruit qualities and biological featuresof trees, being considered the IIIrd fruit culture as economical importance and culture perspectives in our country. In Romania, the peach tree occupies the 6th place after the apple tree, plum tree, sweet cherry tree, appricot tree and peat tree. If between this species was very cultivated, after 1990 the peach tree culture known a progressive decline. The nectarine culture amplified from 1970, thanks to the collaboration between dr. Vasile Cociu and prof. Leon Hough from the University Reurgers, New Jersey, U.S.A. researchers who made up the genetic bases of some nectarine varieties. The ample studies concerning the nectarine cultures were made by dr. Monica Murvai, dr. Antonia Ivascu, prof. Draganescu E. And others

Research on *ex vitro* rooting of raspberry microcuttings obtained from in vitro micropropagation

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Keywords: *Rubus idaeus* L., greenhouse, substrate, indolilacetic acid, number of roots, length of roots, cultivar

ABSTRACT

In the classical method of raspberry micropropagation, rooting phase is done *in vitro*. The trials were undertaken to replace *in vitro* rhizogenesis by a direct ex vitro rooting. The micropropagated shoots of raspberry, cultivars Bulgarski Rubin, Malling Exploit, Cayuga, Citria and Ruvi were trated as soft cuttings and rooted ex vitro (in non-sterile conditions). The evaluation of ex vitro rooting proved that the rhizogenesis happens normally in the perlite substrate versus that induced on *in vitro* culture. The highest percentage of the rooted plants directly on perlite substrate was obtained when 10.0 mg/l indolilacetic acid (IBA) application was done. Three varieties out of the five tried showed over 90.0% rooting frequency. Ex vitro rooting may provide a better quality of the rooted raspberry plants.

Research concerning the establishment of the soil maintenance technology in apple orchards in the Voineşti-Dambovița area

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O.J.P.D.R.P. Dâmbovița

Keywords: herbicide, orchard, soil, variety, production.

ABSTRACT

In the new social-economic circumstances, the Romanian fruit growing has perspectives as a result of higher and higher demands for fruits, as well as because of the profitability of this cortical branch of production. This demands not just the usage of some associations of precious species with mother/father plant of low vim, adequate to the pedoclimatic, but also the usage of excellent technologies of soil maintenance and farming, weed killing, fertilization phyto protection, fighting against diseases and pest control, mechanization.

Specific technological measures leading to the increase of the apples quantity and quality

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Keywords: specific technological sequences, chemical and manual thinning out, foliar fertilization, quality

ABSTRACT

Obtaining quality fruits, according to the trading standards, so as their size uniformity in the tree crown is realized by applying supplementary of some specific technological measures: the chemical and manual thinning out of the fruits, the foliar fertilization, technological sequences that must be an integral part of the fruit production technology.

Through the chemical and manual thinning out of the fruits, based on applying 4 – 5 treatments with foliar fertilizers, the production increase was 36 - 43% greater at the Generos breed and with 27 - 40% greater at the Florina breed. The fruit weight was much superior, surpassing the witness with 8 – 34 kg at the Generos breed and with 18 – 24 g at the Florina breed. Over 990% of the obtained production was registered at the +I quality.

The creation of new apple tree and pear tree breeds, genetic resistant against deseases, with quality fruits, suitable for ecological cultivation

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Keywords: apple breeds, genetic disease resistance, promising selections, yield potențial, fruit characteristics

ABSTRACT

The experiments organized for apple and pear trees had in view the creation of a selection base from the biological material, obtained at SCDP Voineşti and at ICDP Mărăcineni through inter- and intra-specific sexuate hibridation, material subjected to selection and evaluation in DUS and VAT testing cultures (competition micro cultures and cultures). From the biological material obtained beforehand, a series of genetic disease resistant elites have been selected, which have been enrolled at ISTIS for testing continuation in vue of homologation. From SCDP Voineşti were enrolled the elites: V.1/26-90; V.2/45-90; V.95/49; V.95/23; V.53/4; V.95/15, V.95/27 for aplle trees - 9/19-81; 2/8-86, 36/29-90, for pear trees. From ICDP Mărăcineni were enrolled at ISTIS the elites: 2/29P (Rustic) for apple tree and 5/24P; 7/33P for pear trees. In the years 2006-2007, at SCDP Voineşti the apple tree breeds Real şi Luca and the pear tree breed Tudor - genetic disease resistant productive breeds, with quality fruits - were homologated. At ICDP Mărăcineni, the genetic disease resistant columnar breeds Colmar and Colonade were homologated. By promoting the genetic disease resistant breeds in culture, the cost for performing the phyto-sanitary treatments are diminished with aprox. 50-60% and the negative impact on the environment is reduced.

Mycoplasma (Phytoplasma) detection in pear with pear decline, test plants and psyllids in Romania using dot blot immunoassay method

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Keywords: Pear decline, phytoplasma, *Cacopsylla pyri,* dot blot immunoassay.

ABSTRACT

Using two polyclonal antisera produced in rabbits, one with phytoplasma of apricot chlorotic leaf roll –ACLR (European stone fruit yellows group-ESFY) and another one with aster yellows phytoplasma isolated on axenic culture, an indirect dot blot immunoassay method was performed on nitrocellulose membrane stripes to detect PD, AP 15 and Aster yellows (AY) phytoplasmas in a comparative study. Goat anti-rabbit IgG conjugated with Alkaline Phosphatase or Goat anti-rabbit IgG conjugated with colloidal gold were used as secondary antibodies. Both antisera detected PD phytoplasmas from pear, *Cacopsylla pyri,* pepper experimentally infected by insect vector *Cacopsylla pyri,* apple proliferation AP 15 and AY, both multiplied in *Catharanthus roseus*. These results suggest that there are no serological difference between PD, apricot chlorotic leaf roll, AY and AP 15.

The behaviour of some plum cultivars and hybrids at Plum Pox Virus (PPV) in the south Romania conditions

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Keywords: virus, genotype, ELISA

ABSTRACT

The researches were made to show up the behaviour of some plum genotypes (*P. domestica* and *P. insititia*) at Plum Pox Virus. PPV is the most sever and spread of plum virus and influenced negatively the quantity and quality of the production. The next cultivars and local biotypes of plum were identified as tolerant or slow infected (10-12 years) with PPV: *Andreea, Flora, Mirabelle de Nancy, Oteşani 8, Gogoşele negre, Sâmbăta 3.* The diagnosis of PPV virus confirmed with biological analyses with woody indicators and serological analyses ELISA assured the phytovirotical negative selection of the genotypes of plum and their use in the breeding and propagation processes.

The valuation of some technological features of fruits at two new sweet cherry cultivars

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Keywords: cherry fruits, cultivars, chemical composition, deformation, antioxidant capacity.

ABSTRACT

The knowledge of the physical and chemical characteristics of fruits is a very important element to valuation of their quality. The cherry fruit yields in 2007 were smaller as against with the cherry fruit yields in the previous years. The principal negative factor was not the frost in February, but the excessive drought in April-June, which induced a pronounced physiological falling of the fruits and their low quality. We have valuated the technological features of the fruits at two new cherry cultivars (*Cetăţuia* and *Cătălina*) in the experimental field of Fruit Growing Development Station Iaşi (competition comparative culture), on the ground of fruit samples from the yield of the 2007 agricultural year. The following aspects have been studied: harvest period, stone size, percentage of the stone in the fruit, total and soluble dry matter, sugar content, total acidity, sugar/acidity ratio, resistance at deformation of the fruit and antioxidant capacity (rH) of fruits pulp samples.

Perspective almond elites for fruit growing area of Oradea

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Keywords: selection, testing, homologate

ABSTRACT

The study of 55 elites, after 9 years after planting we recomand to extend 3 elites in the Oradea area: H4/1451/82, H1/2025/84 and H14/851/81, they have the biggest yield: 1443,8 kg/ha; 982,7 kg/ha and 930,5 kg/ha. Potato is one of the plants with the biggest requirement for continously water pro

Persimmon - a new specie for the southern Romanian area

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Keywords: grafting, rootstock, cultivars, quality, phenophases

ABSTRACT

As researches of Fruit Growing Tree Department results during 2003-2007 regarding persimmon's cultivars behaviour, result that in the Romanian Plain are the temperatures conditions, in most of the years. There are years with thermal shocks but flower buds loss are minimal and the trees have a very well regeneration capacity by pruning. The biggest productions are obtained at Sharon cultivar, which is the latest from the studied cultivars assortment.

Behaviour of Some New Resistant Romanian Apple Cultivars Under Different Planting Systems

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Keywords: *Malus domestica,* scab resistant cultivars, Spindle, Drilling, Mikado, vegetative growth, flower shoots,

ABSTRACT

Within the Romanian apple breeding program, Bistrița Fruit Research and Development Station, released in the last years an important number of scab resistant cultivars. At the Faculty of Horticulture in Bucureşti we started to test some of the most important ones: Aura**,** Auriu de Bistrița**,** Bistrițean**,** Jonaprim and Starkprim. Two of most diffused apple cultivars in the Romanian orchards: Florina and Idared were used as control. Trees were grafted on M 26 rootstocks and planted in the spring 2005 at 3.5 m between rows. The distance between the trees on the row varied from 1.5 m for Spindle, and 2.0 m for Drilling and Mikado canopies. Soil was maintained grass covert between rows and with polypropylene fabric mulch on the row. The canopy formation consisted mainly in summer pruning and shoots tiding. An integrated pests and diseases management was applied. In order to study the vegetative growth and the capacity of flower shoots formation, from the first growing season, the shoots type, shoots number and length was determined.

Preliminary results concerning the evolution of main biochemical components of some excessively perishable fruits (berries) during the modified atmosphere storage

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Keywords: raspberry, currant, blackberry, biochemical component

ABSTRACT

Valorization of the excessively or excessively perishable fruits is important not only for the fruit producers, but also for the fruit sellers from the entire trade process (intermediate storage, storage between two delivering centers, specialized shops, supermarkets) and for the consumers. This category of fruit needs a special attention concerning the different steps of the valorization technology, starting with harvesting and finishing with selling. Moreover the technological factors related to the cropping technology, conditioning method (sorting, calibration, packaging), handling, transportation and storage have decisive influence in the success selling on the market of the product who correspond to the requirements of the quality standards operation and not lastly to respond to the increasing consumer exigencies. The purpose of the researches results presented in the paper is to prove the effect of storage under modified atmosphere conditions on the storage period and maintaining the quality of some berries fruits.

The methodology for analyzing the choice of various market channels by the Romanian fresh fruits and vegetables producers

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Keywords: survey, questionnaire, mathematical model, variables

ABSTRACT

The agricultural reform in Romania has broken in different lines the previously vertically integrated agri-food system. The agriculture structures was changed in general and horticulture retailing especially. These changes have also influenced the vertical structures in agri-food sector. The aim of this study is to identify the useful information and methodology for analyzing the alternatives the Romanian farmers have for various supply channels in fresh fruit sector, and also with respect to the transaction and economic costs. The analysis is based on a survey among actors involved in fresh fruit market from Southeastern part of Romania.

The behavior of some pear trees, grafted on quince trees in the conditions from the N-V part of the country

Aurora Venig
S.C.D.P. BIHOR

Keywords: pear

ABSTRACT

Pear is more and more preferred because of OTS aspect and taste. They are consumed rough or in industrialization. Through its high number of cultivated varieties, pear trees assure an important quantity of fruit all over the year (from july until autumn and by a good preserving until spring). The researches carried out at S.C.D.P. over pear varieties, permitted distinguish of the varieties that provide the best climatic conditions in the North-Western part of the qountry.

Economical efficency concerning dwarf and semidwarf on own roots

Aurora Venig
S.C.D.P Bihor

Keywords: peach, dwarf forms,

ABSTRACT

The North-Western part of the country provides good growing and development conditions of the peach trees. Taking into consideration that peaches are the most appreciated fruits from Romania, there is a reason of enlarging the surfaces cultivated with peach trees. A problem in fruit-growing represent the cost and the work, so people try find out solutions in order to reduce or eliminate the toil. This might be done by using intensive and superintensive plantations, close related to obtain new low built peach forms(dwarf).This new forms should also have a high fruit production and trees' density/ha. The researches made at S.C.D.P. Bihor between 2001-2004 over 20 dwarf and semidwarf peach hybrid offspring (selected from two hybrid combinations Bonanza x Springcrest and Bonanza x Cardinal) demonstrated that the studied material is diverse and valuable and might represent the basis of creating new varieties.

Behavior of new apricot hybrids in the processing industry

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Keywords: control cultivar**,** quality**,** preserved product**,** technological parameters

ABSTRACT

There were studied 5 cultivars of apricots: B 7/56, B 21/3, B 21/39 (hybrids), Viorica and Carmela (control cultivars), during the period 2003-2005. Some technological parameters that contributed to the setting up of the processing directions were analyzed at these cultivars and hybrids. The new apricot hybrids were processed under similar technological conditions with control cultivars, according the technologies used in the production for the preservation of fruit by jam. After the stabilization period of the preserved products, of minimum 21 days from the processing, the following analyses were carried out: sensorial analyses, biochemical analyses with determining of the energetic value and microbiologic analyses.

Stability of protection to sharka of C5 transgenic plums inoculated with *Plum Pox* Virus and heterologous viruses

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Keywords: Honey Sweet, engineered resistance, PPV-D, co-infection, PDV, PNRSV, ACLSV

ABSTRACT

Transgenic C5 'HoneySweet' is a clone of *Prunus domestica* L. transformed with the *Plum pox virus* coat protein gene (PPV-CP). This transgenic plum displays post-transcriptional gene silencing (PTGS) which makes it highly resistant to PPV infection. To test the effect of heterologous viruses on the efficacy and stability of PTGS against PPV, transgenic C5 trees were graft-inoculated with different combinations of *Prunus necrotic ringspot virus* (PNRSV), *Prune dwarf virus* (PDV) and PPV-D strain. The potential for suppression of the silencing mechanism mediated by these viruses was evaluated. Challenge experiments were performed in Romanian experimental fields and under greenhouse conditions. Virus infections were evaluated by visual monitoring of symptom development and by serological and molecular diagnosis. Across all trials, the engineered resistance to PPV in C5 transgenic plums was stable and was not suppressed by the presence of the assayed heterologous viruses over a three-year experimental period.

VITICULTURE & OENOLOGY

Grape sensory parameters to be monitored in order to obtain typical Merlot wines – assessment of grape maturation in 2007

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Keywords: Merlot, maturity, typicality, harvest, grape sensory analysis

ABSTRACT

The evolution of Merlot grapes during the pre-harvest period in the year 2007 was followed by means of a sensory analysis methodology. By applying this methodology the optimum time for harvest can be established, along with the parameters which determine the quality and typicality of this particular variety. It was found that the Merlot grapes should be harvested when the pulp and juice aroma and also skin aroma are at their peak. At that moment, the sugar accumulated in berries is at a good level for a quality red wine, while the acidity is not too low and the concentration of polyphenolic compounds seems to remain constant for several days. Delaying harvest with 10 days will not lead to a significant increase in sugar, but the acidity will drop substantially, while a part of the aroma which gives the variety its specificity and typicality would also be lost.

Particularities of the maturation of Pinot noir grapes in 2007 determined by sensory analysis

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Keywords: Pinot noir, maturity, harvest, grape sensory analysis

ABSTRACT

Pinot noir is a grape variety characterized by good tannin content but low anthocyan accumulation. The establishment of the phenolic maturity of this variety should take into account several other sensory parameters of grapes, which must be assessed periodically during the 2-3 weeks before the moment of harvest. By using a methodology of sensory analysis for grapes we found that for this variety we should monitored especially the evolution of the following parameters: pulp and juice acidity, pulp and juice sweetness, pulp consistency, pulp and juice viscosity, skin thickness and seed colour hue.

Researches concerning the influence of weed control measures on grape yields from vine plantation of Timişoara Didactic Station

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Keywords: grape vine, control measures, post-emergent herbicides, manual weed control, grape yields.

ABSTRACT

Grapes represent an important and valuable food product due to their chemical composition. They contain a series of nutritive substances useful for human body with increased energetic, food and medicinal values.

The researches were performed in the period (2002 and 2004) and aimed the influence of weed control measures on grape yields in case of wine variety "Burgund mare" from Didactic Station Timisoara.

The main purpose of this study was to study the influence of weed control on grape yields as a result of applying post-emergent herbicides and manual weed controls for "Burgund mare" variety.

The *Phytodietus* species (Hym: Ichneumonidae) – biology and contributions to the reducing of the grape leaf-roller, *Sparganothis Pilleriana* (Den. et Schiff.) (Lep: Tortricidae) populations in Southern vineyards of Romania

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Keywords: pest, vine, host larvae, ectoparasitoid, percentage of parasitizing.

ABSTRACT

As a result of the rearing of grape leaf-roller *Sparganothis pilleriana* (Den. et Schiff.) larvae collected in 1998, 2000-2003 from two vineyards, Ştefăneşti (Ag) and Dăbuleni (Dj), 3 species of *Phytodietus* have been obtained as primary larval ectoparasitoid: *Phytodietus* sp., *Phytodietus ornatus* Desv. and *Phytodietus polyzonias* (Först.). The host parasitizing by the *Phytodietus* species occurs during the month of May, depending on the local and annual climatic conditions. *P. polyzonias* (Först.) was present in both vineyards; at Dăbuleni, its activity was more obvious. Three host-parasitoid relationships have been recorded, all of them new to science. The role played by these parasitoids in the limitation of grape leaf-roller populations is generally minor, the parasitism ratio being 1.2%.

The multicriterial climatic groups from the Romanian viticultural level

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Keywords: geographical delimitation, climatic index, macroclimate, vineyard

ABSTRACT

Within the last decade a worldwide *multi-criteria climatic classification* methodology was adopted. The multi-criteria method is based on three climatic index applications (multi-criteria): drought index (IS), heliothermal index (IH) and night cooling index (IF). Thereby, applying the multi-criteria method for each wine-growing region of Romania and according to the values expressed by the three indexes analyzed, we have created thirteen climatic groups in all the country, each of them characterizing the win-growing climate; the groups are presented in the present paper.

Studies regarding the elaboration of some instruments for the evaluation of the suitability of viticultural areas for ecological viticulture

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Keywords: ecological viticulture, Valea Călugărească

ABSTRACT

The paper proposes some instruments for the evaluation of the plots of land destined to the cultivation of vine in ecological system. The application of the proposed instruments is exemplified and discussed for some representative plots located in the viticultural centre of Valea Călugărească.

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The implications of globalisation on Romanian viticulture

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Keywords: globalisation, wine market, quality, world trade, tendencies, wine offer

ABSTRACT

The acceptance of Romania in the European Union, in 2007, the alignment at the communitarian legislation and standards, within this domain, imply a continuous preoccupation for maintaining the viticultural heritage, improvement of the quality, diversification of the production, satisfaction of the consumers' requests, ensuring the durability of the sector. If 30 years ago the international trade affected 15% of the global wine production, during the past years this percent has been exceeding 33%. The changes which have occurred lately on the wine market, which is very complex, in the framework of the international competition, which is stronger and stronger, are mainly influencing the viticultural sector in Romania. Romania has a privileged position in the viticultural countries; taking into consideration the surface cultivated with vines (192 600 ha), Romania occupies the 5th position in Europe and the 9th in the global hierarchy; taking into consideration the yearly wine production (between 4,9 and 6,1 millions hectolitres), Romania occupies the 12th position in the world and the 6th position in Europe. As main objectives, Romania has to improve its range structures of the plantations, increasing of the high quality production (the wines with denomination of controlled origin - DOC is representing only 10-12% from the total, compared to over 44% in the European Union), the development of the exports (which are very little our days, with a total value of only 4-8% from the total production).

The effectiveness of weed control measures applied in a plantation with table grape varieties

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Keywords: *chemical weed control, manual chemical control, control extent, Muscat de Hamburg, Chasselas doré*

ABSTRACT

The researches were performed during the experimental years 2002 and 2004 considering some table grape varieties: Chaselas doré and Muscat de Hamburg in order to select the best methods to control weed species from vineyards. The applied methods were represented by chemical methods (weed control) and agrotechnical methods (manual practices). The experiences have demonstrated that best results were obtained by combining herbicides with manual practices.

Exploitation of ecological resources by managing the processes which influence the quantity and quality of grape production

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Keywords: indicators of the vegetal/production balance, ecological viticulture

ABSTRACT

The optimization of fruit loading of the Cabernet Sauvignon variety was attempted in the viticultural center Pietroasa, in order to ensure efficient functional relationships in the given microclimate and to reduce the incidence of disease outbreaks under the conditions of ecological viticulture.Measurements were made regarding the productivity of exposed foliar surfaces, grape production and its quality, the state of health of the plantation and crop.The characteristics of the foliar surfaces allow for the exploitation of ecological resources, also influencing the quantity and quality of production. From the viewpoint of ecological viticulture often a reduction of the vegetative mass is achieved in order to provide a favourable microclimate, to maintain the health state of grapes, while ensuring a balance between the foliar surface and the grape production. From the results of the research it appears that the ecological system for fighting diseases ensures a healthy crop, very little diminished in quantity due to the lower bud loading on each vine, but superior in quality.

The influence of the winemaking technology on the aging capacity of the Grasă variety wines from the Dealu Mare Vineyard – Pietroasa Wine Center

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Keywords: winemaking, aroma, typicity, tasting notes

ABSTRACT

The purpose of this study is to evaluate the influence of the various technologies used in winemaking on aging capacity of the wines obtained from the Grasă grapes from Pietroasa wine region, using the sensorial analysis. It was analised wines from Grasă obtained in 2 diferent winemaking trials. The samples were collected from homogeneous lots of must from Grasă grapes from Pietroasa region (breed purity 100%). Basic chemical analysis were done on the fresh must, the fermented must and on the young wine. Wines were sensorially analysed 1 year, 2 years and 3 years after winemaking by a panel of five autorised winetasters. The results have proven that some winemaking techniques significantly influence the intensity and complexity of wine flavour and the aging capacity of the wines.

The effect of electric field on in v*itro* regenerative processes and grapevine virus elimination

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Key words: *Vitis vinifera*, micropropagation, GLRaV 1+3, continuous electric current, sanitation, ELISA

ABSTRACT

In order to study the effect of electric field on *in vitro* regenerative processes and virus free plant achieving in *V. vinifera* L., Cabernet Sauvignon variety plants infected with grapevine leafroll associated virus serotype 1+3 (GLRaV 1+3) were used. The virus infected plants obtained from one bud woody cuttings were subjected to electric field to 10, 20 and 40V/cm applied for 5, 10 and 20 minutes in each variant.. Also, a prolonged treatment of four days, 8 hours/day to 40 V/cm was realised. The shoot apices collected both from treated and control plants for *in vitro* culture on regenerative media were used. ELISA testing for GLRaV 1+3 detection was performed on acclimatized plants. A percent of virus free plants were obtained in each variant as follows: 83 % to 10V/cm - 5 min; 60% to 20V/cm - 5 min; 72,7% to 40V/cm - 5 min; 57,1% to 40V/cm - 20 min and 100 % to the other short variants. Any virus free plant in the prolonged application of electric field was identified. No correlations between period and intensity of electric field and percent of GLRaV 1+3 free plants achieving have been found. The *in vitro* multiplication and rooting rates were not uniform influenced by the electric field comparatively to the control.

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Agro-biological and phenolic potential for area extension of Romanian grapevine varieties for high-quality red wines

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Keywords: red wines, autochthonous grape varieties, Novac, Negru de Dragasani, colour intensity

ABSTRACT

The national strategy for the Romanian wines market penetration has started a decade before and is still running. The results presented in this paper have been obtained mainly a few years ago but only now they have been completed.

As a result of a hard selection work, they have been homologated, more than 10 years ago, two new red grapevine varieties at S.C.D.V.V. Drăgăsăni: Novac and Negru of Drăgăşani. From 2004 we can find on the market the wine named "Negru de Dragasani", but a comparative characterization of these varieties haven't been published.

This paper presents some results of the grapevine behavior in the USAMV Bucharest vineyard compared with the native area Dragasani and the consecrated winemaking area Valea Calugareasca. A special attention was given to the color characteristics of the obtained wines. Both new varieties proved an upper productivity comparing with Merlot variety as control, and one of them, Negru de Dragasani has a good color intensity compared to the control. The obtained data come to sustain the extension of the cultivation area for Negru de Dragasani in order to obtain higher quantity of good quality autochthonous red wines.

Procedure of reverse osmosis used in conditioning and stabilization of wines – its effect on preservation wines quality

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Keywords: membranes, filtrate, concentrate, biotechnology, ecological.

ABSTRACT

The work paper „Procedure of reverse osmosis used in conditioning and stabilization of wines – it's effect on preservation wines quality" has as the aim the substitution of traditional technology (the deferrization with ferrocyanide of potassium), with a negative impact on environment with a new biotehnology based on the extraction of the excess of ferric and copper ion from wine using membranes of reverse osmosis. The studied wines are passed through the reverse osmosis module, abaft this process diminishes the iron and copper ions concentration from the wine submitted to the osmosis, in the end obtaining a wine which maintains the parameters and the naturalness of the initial wine. Through new biotehnology is obtained an ecological product from viewpoint of conditioning and stabilization.

Soil water reserve dynamics in grapevine plantations and its influence on the production of grapes under the environmental conditions characteristic for the year 2007 in the Vineyard of Odobeşti

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Keywords: environmental conditions, water deficit, grape vine varieties reaction

ABSTRACT

Although grapevine is considered to be resistant to hidric stress, persistent pedological drought may significantly affect vines and their productive ability. The precipitation deficit is characteristic for the years 2006-2007, in the Vineyard of Odobesti, starting with the autumn of the year 2006 and all through the cold season, excepting January and March, when values of above average were recorded and increased considerably in the months of April, May, June, and July. The precipitation deficit superposed on a period of high temperatures (between the 16^{th} -30^{th} of July) when maximum temperatures on ground level of 50 and 60˚C were signaled. Under these conditions the active water reserves decreased dramatically, descending under 50% of the AIU in the months of June (41,3%), July (16,2%) and August (41,6%), which has determined disturbances in the progress of growth and development stages of the plants, respectively: the yielding of grapes, the intensive growth of offshoots and grapes, with direct implications on production and its quality.

Results regarding Feteasca Alba wines analysis using an „electronic nose" instrument

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Keywords: sensory analysis, Feteasca alba, electronic nose, volatile components, gas chromatography

ABSTRACT

In our country the methodology for food products discrimination is not very clear definite, priority being sensory analysis. In many cases this method is very good, but the vacuity of good defined methodologies makes sensory analysis specialists activity more difficult. Preoccupations regarding the correlation of tasters responses with data obtained from electronic nose instrumentation demonstrated the necessity of a good repeatability and accuracy of both sets of information. The present study regard the evaluation of wine discrimination methods using the „electronic nose" equipment. Using two different polarity separation columns, which provide a specific response for each wine volatile component, similar to human nose, the Heracles analyzer (Alpha MOS) provide an unique impress for each product. The instrument is based on ultra-fast gas chromatography and the translation and interpretation process, specific to human olfactory sense is substitute by a powerful software (Alpha Soft ver. 11).

The behaviour of the Gros Sauvignon Variety in the ecological culture system in the Vineyard of Cotesti

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Keywords: indicators, technology, ecopedoclimatic conditions, pollutant, physiological processes

ABSTRACT

Ecological viticulture aims to develop a viable and durable agricultural system through the improvement of soil fertility and eliminating any type of polluting technology. Information is obtained by ascertaining and substantiating, through the experiment conducted in the Cotesti vineyard, the innovative demonstration of the ecopedoclimatic and socio-economical technological risk factors, which measure the level of observation of the ecological viticulture principles. For this purpose, at the Vine and Wine Research-Development Station Odobesti, an experimental lot with the Gros Sauvignon variety was studied, located in the Cotesti vineyard, respecting all phytosanitary safety precautions established by the control plan and aiming to obtain a less sensitive grapevine and a less aggressive parasite.

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Wine-growing habitats from Oltenia-Romania, with vocation for obtaining red quality wines, with controlled origin denomination (C.O.D.)

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Keywords: viticultural areal, aptitude, soil, controlled origin denomination, Oltenia.

ABSTRACT

For each viticultural wine growing habitat from Oltenia-Romania, we established the profile of the predominant soil, and we determined the physical-chemical characteristics of the obtained wines. Using the metodology of multicriterial delimitation in ecological concept of the viticultural areals of obtaining high quality COD products we traced in Oltenia-Romania, the habitats of five names of controlled origin: Banu Mărăcine, Segarcea, Mehedinţi, Drăgăşani, Sâmbureşti.

Comparative study regarding the degree of adaptability of two German varieties – Regent and Dornferlder on the experimental field of USAMV Bucharest

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Keywords: varieties, grape vine, favorability, quality, adaptability.

ABSTRACT

The obtainment of quality wines is an important goal for the present Romanian viticulture. The wine quality mostly depends on the production technologies, the applied treatments and last, but not least on the quality of grapes. The present work refers to a preliminary study that informs on the behavior of German varieties Regent and Dornferlder in ecopedoclimatic conditions registered in Ampelographic Collection from U.S.A.M.V. Bucharest. The experiment was realized to establish these varieties adaptability degree in a habitat with middle favorability for obtaining red quality wines, and to determine the capabilities and the possibilities to use these varieties to increase the number of suited varieties for obtaining red quality wines. The two varieties were studied mostly because of their popularity they have in their origin country (Germany), but also because of their resistance in *Mildery* and *Grey rot.*

Researches concerning fertility and productivity of grape varieties cultivated in Teremia Viticulture Centre

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Keywords: Majarcă albă, Creaţă, Steinschiller, Fetească regală, Italian Riesling, Burgundy, relative fertility coefficient, absolute fertility coefficient, relative productivity index, absolute productivity index

ABSTRACT

The traditional growing of grapevines in Teremia viticulture centre has witnessed numerous changes in time by modernizing crop technologies and changing assortment of grape varieties and moreover during transitional period many vineyards have been cleared or abandoned.

Re-establishment of viticulture centre by re-conversion of grapevine plantations requires knowledge relating to yield potential of cultivated varieties. The results obtained during the research period 2002-2004 approaching fertility and productivity of Majarcă albă, Creaţă, Steinschiller, Feteasca regală, Italian Riesling and Burgund mare varieties have demonstrated that Majarcă albă variety registered the best values for fertility coefficient and productivity indices proving to have the highest adaptability in the region and thus, it is recommended to be further maintained for cultivation.

Some aspects regarding the chemical behavior of some nutritive substrates used for grapevine growing in a closed system

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Keywords: drainage recuperation, macronutrients, biodegradation, grape cutting production

ABSTRACT

Use of virus free propagation material is an important factor to improve quality and quantity of grape production. Obtaining and storage of mother plants are important steps in this protocol. The present work evaluates the qualities of some organic materials used as active medium components for growing grapevine plants in containers, in a closed system. For the establishment of an optimal moisture content, some mixtures, with different rate of manure (M), peat (P), celery soil (CS), forest soil (FS) and a 1:1 (V:V) mixture of perlite and sand (PS) were investigated. A clone of Cabernet Sauvignon grafted to Kober 5BB was used as biological material. It were examined the influence of substrate and nutrient level on the plant growth parameters and productivity. The depend variables measured were pH, electrical conductivity (EC), organic matter (OM) and some macro-nutrients as $N\text{-}NO_3^-$, $N\text{-}NH_4^+$, P, K, Ca and Mg. Some biometric measurements were performed: the plant highness, the shoots lengthiness and diameter, the number of leafs, the foliar surface, the dry and fresh matter. The results show that the evolution of the substrates was different. The analysis regarding nutrient concentrations in substrates show that the variants based on two active components (M and FS, P and FS or M and CS) have a better response to plant request by ensuring an optimum content of macronutrients. Correlated to the substrate nutrient content, the plants in this variants exhibit highest growth parameters and productivity. The best efficiencies of cuttings production was reported when a substrate formed by M and P was replaced by one having equal rates of M and FS (B_{III}) or P and FS (B_{IV}).

BOTANY & PHYSIOLOGY

Obtaining and characterizing flavonoids and polyphenolic acids from *Cynara scolymus L.* (Artichoke) leaves and *Arctium lappa L.* (Burdock) roots

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Keywords: polyphenolic acids, flavonoids, artichoke, *Cynara scolymus L*., burdock, A*rctium lappa L.*

ABSTRACT

This paper presents a biochemically safe process of obtaining active substances from medicinal plants with economical potential: *Cynara scolymus L.* (artichoke) leaves and *Arctium lappa L.* (burdock) roots. A fast and reliable method based upon classic extraction was used to obtain flavonoids and polyphenolic compounds such as cynarin and chlorogenic acid from *Cynara scolymus* L. *and Arctium lappa* L. There are a few comparative studies regarding the total content of polyphenols and flavonoids of watery and ethanol extracts of medicinal plants from Romanian wild flora. These results are in agreement with those indicated by Romanian Pharmacopoeia. It was observed that the highest total flavonoids content was found in the *Cynara scolymus L.* leaves 55^0 ethanol extract (0.61%) and the highest total polyphenol acids content was found in the *Arctium lappa L.* roots. roots 70^0 ethanol extract (2.76 %), w/w (%).

Research regarding the composition of *Agastache* Genus (*Lamiaceae*) cultivated in Romania

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Keywords: *Agastache*, dry matter, minerals, pigments, volatiles, essential oil

ABSTRACT

The researches were performed on six species of *Agastache* genus, originally from America, cultivated by SCDL Bacau. The plants were analyzed from viewpoint of water content, dry matter, minerals, pigments and volatiles contents. The essential oils were obtained by hydrodistillation, and analyzed by GC-MS. The main compounds were identified by mass spectra and retention-time correlations. The essential oils of *Agastache mexicana* held as main compounds: pulegone (36.78%), menthone (26.03%) and limonene (23.66%), and that of *Agastache rupestris*: estragol (methyl chavicol) (53.91%), pulegone (21.58%) and menthone (16.25%). The main oil constituents of *Agastache foenicullum* are menthone (36.63%), pulegone (28.31%), estragol (11.97%) and isomenthone (6.47%). Estragol is the main constituents of *A. anisata* (63.23%) and *A. hibrida* (89.19%). The essential oil extracted from *Agastache cana* held as main compounds: β-phelandren (23.9%), β-cubebene (15.16%), limonene (12.57%), γ-terpinene (11.52%), β-pinene (7.49%) and caryophyllene (6.75%). Pulegone and menthone are not present in the essential oils of this species. All investigated species have been studied for the first time in Romania from phytochemical point of view.

Physiological responses of Banat's common bean landraces (*Phaseolus vulgaris* L.) seedlings to osmotic stress

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Keywords: Proline, dry matter, germination, tolerance, hydric deficiency

ABSTRACT

Phaseolus vulgaris has a great variability regarding the tolerance to osmotic stress. In our experiment we tested osmotic stress tolerance of starting with values 1 MPa and up to 4 MPa induced by polyethylene glycol-6000 (PEG-6000). The experimental results achieved made evident the existence of some bean genotypes with a good tolerance to osmotic stress during germination (Berini, Bocsa Romana, Dudestii Noi, Sudrias urcatoare, Sacu, Sudrias pitica, Ciresu, Santana, Tincova, Comoraste). These genotypes have recorded during germination normal intensities of radicle growth and cotyledon development, and they have synthesized important amounts of free proline with osmoprotector role. We also measured the dry matter content of stressed genotype.

Preliminary study regarding the qualitative characteristics of a genotype from *Pyrethrum Cinerariifolium* (trevir.) specie, as a premise in the control of pests, through the specific methods of ecologic agriculture

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ABSTRACT

At VRDS Bacău the cultivation of *Pyrethrum cinerariifolium* (Trevir.) specie, started in the year 2005. The establishment of the crop was done using an autochthon biological material, a biotype with a large genetic variability. This perennial specie is known as a plant with multiple uses (can be decorative, in China is utilized also as medicinal, especially for vermifuge proprieties) but is recognized as a plant that plays an important role in biologic agriculture practice as a prime material for the extraction of pyrethrin, especially from flowers. In gardens, only the presence of this plant keeps away the insects from the plant from near-by thus being repellent. The plant can be dried and utilised latter because the dried plant conserve the insecticide and repellent proprieties of fresh plant. The study focuses on the possibility to adapt to the agro-pedologic conditions from the East of Moldavia as well as for cultivation in ecologic conditions. Due to the fact that one of the most important technological links in the cultivation of this specie is harvesting and drying of plants, the experimental variants are concentrated on the optimal moment for flower's harvest, the position of flower on plants (central or marginal). The aim of the present study is to establish if this biotype cultivated at VRDS Bacau, in the "bio" experimental polygon, has insecticide or repellent properties and can be utilized in the pest control, as a method specific for biologic agriculture.

The geotropically modifications of mustard plantlets due to the phytocrom reversibility

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Keywords: mustard plantlets, phytocrom, geotropically motion

ABSTRACT

In this paper we observed the geotropically modifications of mustard plantlets due to the phytocrom reversibility at the variation of wavelength (λ_1 = 660nm - red, λ_2 = 730nm – far-red). The vegetal material consists of mustard seeds, which has been illuminated for one minute with special filters and then maintained in darkness. After five days in growth chamber, the deviation angle to vertical axe was estimated. In the plants maintained in darkness the phytochrom is only in an inactive form (P_i), which may be convert in an active form (P_a) by illumination with red light (λ = 600nm). These two forms P_i and P_a are photoconvertible. So, the mustard plantlets have a higher randomize by illumination for one minute with red light (λ_1 = 660nm) due to the phytochrom activation. For the other experimental lots the plantlets have a normal negative geotropism.

Contributions to the knowledge of the physiology and biochemistry from *Tilia platyphillos*

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Keywords: photosinthesis, transpirations, respirations, pigments, minerals

ABSTRACT

The physiology and biochemical analysis effectuated on the species *Tilia platyphillos* resulted that the intensity of the photosynthesis vary depending on the age of the leaves between 1,48 μmoli $CO_2/m^2/s$ and 7.27 μmoli $CO_2/m^2/s$, the intensity of the transpiration process varied between de 1.36 mmoli $H_2O/m^2/s$ and 3,28 mmoli $H_2O/m^2/s$, and the respiration process between 424.20 mg $CO_2/kg/h$ and 87.50 mg $CO_2/kg/h$. The maximum mineral elements contents was determined in the leaves, flowers and bract and the predominant elements were Ca, K, Mg, P.

Contributions to the knowledge of the composition of essential oils from *Tilia tomentosa, Tilia americana and Tilia platyphillos*

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Keywords: *lime, volatil oil, flowers*

ABSTRACT

Essential oils which are extracted from flowers of 3 species genus *Tilia* by hydrodistilation, but the separation and the identification of their components were released in the chromatograph in gaz phase with masspectrometric detector. Data obtained had marke out a variation in the essential oils composition. Thus, the essential oils extracted from those 3 species contained in principal tricozan, identificate in all of 3 species, benzil benzoat (*T. americana*), phytol (*T. tomentosa*) and kauren (*T. platyphillos*).

Structural peculiarities of *Polygonatum verticillatum*'s (L.) all. and *Streptopus amplexifolius*'s (L.) dc. aerial vegetative organs

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Keywords: anatomy, flowering stem, leaf

ABSTRACT

The structure of *Polygonatum verticillatum* 's and *Streptopus amplexifolius* 's aerial vegetative organs shows, on one hand, the morphological differences between the two species observed in flowering stems and leaves, and, on the other hand, the adaption to the enviroment's specific conditions - high soil's humidity and lower light's intensity.

Contributions for knowledge of the content in mineral elements from the leaves of three species of Thuja

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Keywords: mineral elements, Thuja

ABSTRACT

The researches were made with the leaves from the species of Thuja orientalis, T. occidentalis and T. plicata, from the plants of Botanical Garden from USAMV Bucharest.

The results obtained presented the fact that the mineral substances from the leaves of Thuja varied between 1,96% for Thuja plicata and 2.36% for Thuja orientalis. The leaves of Thuja orientalis had the highest content of mineral elements which are important from the physiological point of view: calcium (997,10 mg/10g fresh substance), phosphor (107,20 mg/100 mg) and magnesium (39,27 mg/100g), and the ones of Thuja plicata had the highest content of potassium (194,60 mg/100 g), which is the most important element with an active osmotic role.

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Variance of the mineral content from different organs of two Virginia tobacco cultivars

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Keywords: *Nicotiana tabacum*, chemical composition, calcium, potassium, magnesium

ABSTRACT

This paper presents the content in mineral elements from the organs of two *Nicotiana tabacum,* cultivars namely Virginia 180 and Virginia 196. Determinations were made during flowery time, the analysed organs being the root, the stem, leaves from the superior half of the plant, basal leaves and flowers. The content of mineral elements was determined in a larger amount in the Virginia 180 cultivar. Analysis of mineral substances from the plant organs marked out a larger content in the basal leaves (25,39%), and the minimal quantity was found in the flowers (9,66%). Analysis of mineral elements was made with a inductively coupled plasma spectrometer. Among the mineral elements, there has been determined the calcium percentage, which content varied between 11995.75 mgr./100gr.of dry substance in the leaves from the base of the plant and 943.3 mgr./100gr. in the flowers, potassium percentage that varied between 5776.45mgr/100gr. in the stem and 1629mgr. in the root, and magnesium percentage that varied between 2409.68 mgr. in the basal leaves and 509.55 mgr. in the root.

Contributions to the knowledge of physiological and biochemical processes of the "Mangetout" Pea cultivar Sugar Snap

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Keywords: *Pisum sativum,* chemical composition, respiration, transpiration, photosynthesis

ABSTRACT

This paper presents data concerning evolution of physiological and biochemical processes of the "mangetout" pea cultivar Sugar Snap. Determinations were made during vegetable growth and generative period, the analysed organs being the root, stem and leave from the superior half of the plant, basal leaves, flowers and pods. It has been determined the content of assimilating pigments from leaves, the intensity of the photosynthesis and transpiration, variance of respiration process in different organs, water content, total dried substance and mineral substances, also content of mineral elements of the pea plant organs. The chlorophyll quantity from leaves varied between 113,56 mg/100gr and 209,19 mg/100g and the carotenes from basal leaves varied between 51,46 mg/100g and 46,91 mg/100g. Intensity of the photosynthesis process and transpiration varied between 12,55 μmoles CO2/m²/s, respectively 14,78 mmoles H2O/m²/s in the basal leaves and 10,5 μmoles CO2/m²/s, respectively 12,81 mmoles H2O/m²/s in the leaves from the top of the plant. Respiration intensity varied between 760,87 mgCO2/kg/h for the flowers and 114,02 mgCO2/kg/h for roots. The highest content in water was found in pods (89,14%), and in total dried substance and mineral substance was found in roots. Among the mineral elements the most resulted was calcium. The calcium content varied between 450,48 mg/100g fresh substance (in the leaves from the base of the plant) and 65,86 mg/100 g (in pods), potassium, which varied between 240,16 mg/100g (in the leaves from the top) and 123,85 mg/100g (in pods) and phosphorus with a maximum of 112.18 mgr in flowers and a minimum of 36.15 mg in stem.

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The influence of isoproturon on the dynamic of the population density and the assimilatory pigments content in *Chlorella vulgaris* and *Botryococcus braunii*

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Keywords: *Chlorella vulgaris* Beij., *Botryococcus braunii* Kuetz., isoproturon herbicide, growth, assimilatory pigments.

ABSTRACT

The *Chlorella vulgaris* and *Botryococcus braunii* cultures were used for the testing of the effect of the different concentrations of isoproturon on the growth and the chlorophyll a, b and carotenoid pigments content after 7 and 14 days from the adding of the herbicide in the medium culture.

Concomitantly, there were recorded significantly variations in the assimilatory pigments content from the variants treated with herbicide. It has been shown through the analyse of the regressions between the cells number and the pigments content that the variation of the assimilatory pigments content may be explained through an adaptation reaction to self shadowing. The 0.04 μM isoproturon concentration produced a seemingly stimulating effect on assimilatory pigments content of *Botryococcus* after 7 days exposure, but, even this concentration was clearly placed on the regression line between the number of cells and assimilatory pigments content.

The balance of mobile phosphorous in some substrates

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Keywords: mobile phosphorous, marc compost, phosphatase activity, nutritive solution

ABSTRACT

Culture substrates, formed by mixing different proportions of organic compounds are generally poor in nutrients (N, P, K), because the main role for the substrates used for containerized ornamental plants is to assure the optimum physical and chemical proprieties (porosity, aeration, water retention, pH, total salts content). For this reason, the nutrients are usually completed by applying nutritive solutions during plants vegetation. In the last decades, the use of this kind of substrates imposed the study of their properties in order to recommend them for a certain culture according to required agrochemical indicators and plants needs.

The aim of the present research was to study four variants of substrates based on marc compost as the recyclable component and forestry compost, leaves compost and peat.

Considering that phosphorous is one of the most important element for plants' nutrition but its solubility and mobility in the substrates create problems, we concentrate the studies on the balance of its mobile forms (the principal source for plants' nutrition) and the intensity of the phosphatase activity (a podoenzyme involved into phosphorous cycle) that supply the accessible phosphate for plants (Ștefanic G. et al., 2001).

Preliminary results regarding the influence of Cytokinin on micropropogation of *Magnolia soulangiana* Soul. Bot

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Keywords: *in vitro* culture, micro propagation, explant, microshoot, cytokinin, multiplication rate

ABSTRACT

Achieved results show the different influence of benzilaminopurina cytokinin, 6-dimethylallylamino purina, thiadiaduron, kinetin and their concentration on the rate of propagation *in vitro* of explants and micro shoots elongation.

The influence of photoperiod on *in vitro* culture in the multiplication phase at *Eustoma grandiflorum*

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Keywords: explants, Eustoma, tannins, assimilatory pigments, reducing sugars

ABSTRACT

The purpose of this paper was to study the main physiological indicators at *Eustoma grandiflorum* under photoperiod influence. We used two variant of photoperiod with 12 hours and 16 hours. The biological material was achieved used the *in vitro* technology. The observations of explants made in the multiplication stage of *in vitro* culture. In principal, these aspects show that the explants obtained in *in vitro* culture have small content in reducing sugars, tannins and mineral elements know the fact that the mass of material are very small.

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Physiological behaviour of strawberry *in vitro* culture in the multiplication phase

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Keywords: Vitroplants, Elsanta, Premial, photosynthesis, assimilatory pigments, respiration

ABSTRACT

Regarding this study, we use two cultivars: Elsanta and Premial. The porpose of this paper was to study the main physiological indicators. In principal, these aspects regarding both cultivars show that the explants obtained in *in vitro* culture have small photosynthetic capacity. Between both cultivars exist significant differences regarding the physiological parameters.

Variability of the main anatomical characteristics for leaves and fruits of some apple trees varieties and hybrids (*Malus domestica* L.)

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Key words: epidermis, stomata, mesophyll, cuticle

ABSTRACT

This study shows the comparative anatomical study for leaves and fruits of some apple tree varieties and hybrids to making evident the possible anatomical characters used in plant breeding to improve the passive resistance of the plant for field diseases attack and in the fruits storage. The transversal section was provided in the median leaves blade to establish the epidermis and mesophyll width and in the fruit epicarp to determine the wax layer and epidermis width. It was counted the stomata number on the lower epidermis. The variability of the width mesophyll and stomata numbers is high between the apple tree varieties and hybrids. The apple tree varieties and hybrids can be divided in four different groups taken into consideration the relation between the mesophyll width and stomata numbers. The hybrids have the biggest epidermis and wax layer than apple tree varieties. These characters indicate the better passive resistance of apple tree hybrids to scab attack (*Venturia inaequalis*), which it is the main disease in apple tree and the better fruit storage.

OTHER FIELDS

Characterization of the Molasses based culture media to obtain single cell protein, in order to optimize the medium composition

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Keywords: Saccharomyces, bacteriological evaluation, chemical-physical evaluation, fermentation, optimization

ABSTRACT

Molasses from sugar beet represents one of the main raw materials used for obtaining single cell protein biomass. Utilizing molasses as raw material is very convenient mainly from the economic approach (regarding the low costs and high accessibility).

Molasses were studied from a microbiological and physical-chemical point of view.

This paper presents the results from analytic tests performed to optimize the culture media used to grow selected yeasts, regarding the optimal composition of microelements. The selected yeasts belong to the Saccharomyces species and are part from the collection of microorganisms belonging to the fermentative technology lab, which is part of the Food Research Institute from Bucharest.

The researches are focused on studies regarding multiplication of yeasts on optimized growth media, in order to obtain single cell protein meant for nutrition.

AFLP markers as a powerful tool for fingerprinting and breeding *Tulipa* genus

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Keywords: *Tulipa* genus, AFLP genetic marker, DNA fingerprinting, *Li-cor* PCR, preamplification, selective nucleotides

ABSTRACT

The amplified fragment length polymorphism (AFLP) technique is one of a number of DNA fingerprinting procedures that takes advantage of the polymerase chain reaction (PCR) to amplify a limited set of DNA fragments from a specific DNA sample (Vos *et al.* 1995; Blears *et al* 1998). Typically the choice of which fingerprinting technique to use depends on 1) the application (e.g. DNA genotyping, genetic mapping, population genetics); 2) the organism under investigation (e.g., prokaryotes, plants, animals, humans); and 3) the resources (time and money) available. In most cases no one fingerprinting technique is ideal for all applications. However, AFLP's are quickly becoming the tool of choice for many applications and organisms. Potential applications include screening DNA markers linked to genetic traits, parentage analysis, forensic genotyping, diagnostic markers for pathogen borne diseases, and population genetics. Since the AFLP technique can be applied to a wide variety of organisms (and viral sources) with no prior sequence information this technique has the potential to become a universal DNA fingerprinting tool.

Quality assurance in education

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INTRODUCTION

Much has been debated about the management of learning, the quality of material provided for learning, the assessment of learning and the procedures in place to ensure the student learning experience is being continually reviewed with the object of ensuring the graduating young person is suitably qualified to meet the exacting requirements for the world of work.

Western Europe has systems in place for managing the learning environment; learning establishments within the United Kingdom maintain a Self Assessment Policy, which is regulated by the Education Funding Bodies.

A self assessment strategy requires a model for basis; the object of this presentation is to provide a potential structure for consideration, and carry the concept of self assessment and customer satisfaction further.

Customer satisfaction, student learning and continual improvement are integral to the concept of a Quality Learning Environment. The concept for the term Quality Assurance may be stated as: “fit for purpose”. We as Educational Practitioners have the responsibility for ensuring our graduates meet or preferably exceed the minimum requirements for successful achievement in the working environment.

This presentation suggests a suitable model, which can be adapted to individual organisational needs.

Performing method for Patulin detection in apple juice, in order to food safety assuring

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Keywords: patulin, apples juice, high performance liquid chromatography

ABSTRACT

In Institute of Food Bioresources it was developed a method for patulin determination from apples juice by high performance liquid chromatography.

Extraction of patulin was made in acetonitrile from sample and purification of obtained extract, using C.U. Patulin columns (MycoSep®228). The obtained solution is evaporated to dryness under nitrogen and re-dissolved. Patulin is, after, separated on chromatographic column C18, 150 x 4 mm, 5 µm (high performance liquid chromatograph Thermo Finnigan), eluted in mobile phase and detected on 276 nm, using an UV-VIS „DIODE ARRAY" detector.

It was achieved an internal study for validation of method for patulin determination from apples juice, by high performance liquid chromatography. In concentration range 10 µg/l – 400 µg/l the average recuperation is 89.64 %. Detection limit (LOD) is 3.71 µg/l, and quantification limit (LOQ) is 7.42 µg/l.

Phenological aspects of natural populations of *Helix pomatia* and *Helix lucorum* (Gastropoda-pulmonata-helicidae) in Romania

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Keywords: phenology, temperature transects, first deposition of eggs

ABSTRACT

The specific spreading area of *Helix pomantia* and *Helix lucorum* species is different in Romania; the first species is limited to the area within the Carpathians and to the West of the country, while the second species is limited to Moldavia, to the Outer Eastern Carpathians as well as to the South of Romania. Because of the mild climate in the West, the first deposition of eggs for *Helix Pomatia* species usually occurs two weeks earlier as compared to regions in Transylvania, within the Carpathians chains. In May, 2004, the air temperature throughout the country was higher than normal for this period of the year, both inside and outside the Carpathians chain, reaching 30 degrees, which influenced the first deposition of eggs for the two species, in the sense of its outrunning. However, the proper period of time fit the first deposition of eggs was maintained up to ten days for the species in the West, where there is a mild climate and those in Transylvania, where there is a harsh climate.

The effects of system management on soil carbon dynamics

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Keywords: soil respiration, carbon pools, management

ABSTRACT

Soil organic carbon plays an essential role in determining the soil quality, which is a central aspect to maintain in the long term sustainability and productivity in the agricultural ecosystems. Agriculture can be considered as a sink for atmospheric CO_2 through carbon sequestration into biomass product and soil organic matter, but it can also be a source for greenhouse gases, including CO_2. The impact of different agricultural managements (conventional and organic) and tillage level (deep and minimum tillage, DT and MT, respectively) on soil organic carbon pools content and CO_2 emission were investigated in this work. Both systems have a three-year crop rotation including pea – durum wheat – tomato; the organic system is implemented with the introduction of common vetch (*Vicia sativa* L.) and sorghum (*Sorghum vulgare bicolor*) as cover crops. The results, reported as average of three crops, showed highest values of total organic carbon (TOC) and total nitrogen (TN) in organic soil MT. Similar results were found for microbial biomass carbon (MBC) and nitrogen (MBN). The most labile carbon pools (water soluble carbon and labile carbon) showed higher values in the organic system than in the conventional one, with the lowest value in conventional system DT. Soil CO_2 emissions were also greater in the organic system than in the conventional one, with higher values in MT with respect to DT.

Tagging aphids with fluorescent dyes as a tool for epidemiological studies

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Key words: potato, virus, control, pattern of virus spread

ABSTRACT

An aphid tagging method with fluorescent dusts was investigated. The method is simple, no expensive and allows us to trace individual aphid's movement and flight. The method does not affect insect's longevity, its capability to transmit virus, movement, flight or response to color stimuli.

Thus the method allows detailed epidemiological studies. In the present work the model is PLRV (potato leaf roll virus) spread in potato by its vector *Myzus persicae* Sulz. – The peach aphid. The results will be discussed in the context of the present situation of PLRV- control.

Research on isolation, characterization and testing the interaction between *Trichoderma harzianum* and *Botrytis cinerea* for biological control of gray mold in strawberry

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Keywords: plant pathogen, fungal isolates, antagonism, dual cultures

ABSTRACT

Many commercial strawberry cultivars are susceptible to *Botrytis cinerea,* the agent of gray mold. This microorganism can cause great damage if not controlled.

Research has been carried out in order to find new natural antagonists able to inhibit the pathogen development.

Botrytis cinerea F7 active pathogen isolated from infected strawberry fruits and an antagonistic fungal species *Trichoderma harzianum* P8 originated from soil were tested by dual culture technique for their interaction mechanisms. Biochemical products release was registered and *Trichoderma harzianum* showed hiperparasitism reactions on *Botrytis cinerea*, too.

The study of the viticultural ecosystem biodiversity S.D. Banu Mărăcine-Craiova

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Keywords: biodiversity, weeds, pathogens agents, micolfora, entomofauna

ABSTRACT

The biodiversity of the viticultural ecosystem from S.D. Banu Maracine-Craiova, comprise, among the cultivated species *Vitis vinifera,* other spontaneous species (predominant being *Stellaria media* (16,9%), *Cardaria draba* (16%) and *Lamium purpureum* (12,2%)).

The key pathogens agents specific for the studied area are *Plasmopara viticola* (Berk. et Curt) Berl, et de Toni, *Uncinula necator* (Schw) Burr. f.c. *Oidium tuckerii* Berk. and *Botryotinia fuckeliana* (De Bary) Whetz f.c. *Botrytis fuckeliana* Pers.).

From the viticultural soil and from the grapes has been isolated 67 yeast strains with 45 strains of sporogenous species and 22 strains of nonsporogenous species.

From the total of 86 arthropods species 44 species are harmful to the vine (51,16%,), 14 beneficial species (16,28%) and 28 indiferent species (32,56%.).

Histologic modification induced by the action of the insecticide Samurai on the skin and liver of *Rana Ridibunda*

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Keywords: acetamiprid, frog, gland mucose, hepatocytes, stratum corneum, lipofuscine

ABSTRACT

In our experiments we followed the histologic modifications induced by the action of the insecticide Samurai at the skin and liver level of Rana Ridibunda. The toxic substance used was the insecticide commercialized under the generic name of Samurai which has as an active substance the acetamiprid. This systemic, latest generation insecticide has a wide spectrum of action. The animals used in the experiment were divided in three experimental lots: one lot of control individuals and two experimental lots in which the frogs were kept in two acuaterrarios with a 0.01 ml/l and respectively 0.02 ml/l concentration of Samurai. The toxic water was changed daily and the animals were kept unfed for the duration of the experiment. We began sacrificing them at the beginning of each of the following three weeks from the start of the experiment. We observed a hypertrophied mucose gland of the tegument, an increased volume of hepatocytes as well as increased reserve of lipofuscin.

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Biotechnology for conversion of winery and vine waste into mushroom products

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Keywords: biotechnology, fungal conversion, edible and medicinal mushrooms, winery and vine wastes

ABSTRACT

The main aim of this work was to find out the best way to convert the vineyard and winery wastes into useful bioproducts by using them as a growing source for edible and medicinal mushrooms in order to extend the food chain in vineyard ecosystems. According to this purpose, three fungal species from Basidiomycetes, namely *Ganoderma lucidum* (Reishi), *Lentinus edodes* (Shiitake) and *Pleurotus ostreatus* (Oyster Mushroom) were tested to determine their biological potential to grow on substrates made of vineyard and winery wastes which could be used in this way as culture composts. The experiments of this research work were achieved by growing all these fungal species in special culture rooms, where all the culture parameters were kept at optimal levels in order to get the highest production of fruit bodies. During the experiments, the effects of culture compost composition (carbon, nitrogen and mineral sources) as well as other physical and chemical factors (such as: temperature, inoculum size, pH level and incubation time, etc.) on mycelial net formation and especially, on fruit body induction, were investigated. From all these fungal species tested in our experiments, *Pleurotus ostreatus* was registered as the fastest mushroom culture, then *Lentinus edodes* and finally, *Ganoderma lucidum* as the longest mushroom culture. As control samples for each variant of culture composts used for the experimental growing of all these fungal species were used wood chops of oak and wheat straw.

Identification of *Plum Pox Virus* isolates from Transylvania Region, using RFLP method

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Keywords: sharka, plum, restriction enzymes, PCR, specific primers

ABSTRACT

This study was conducted to determine the presence of plum pox virus (PPV) (family Potyviridae, genus Potyvirus) in different regions of Transylvania. The disease mainly affects apricot, plum, and peach. The genus *Potyvirus* was first detected in Bulgaria in 1917; since then, it has spread to most of eastern and central Europe and the Mediterranean basin. We collected and investigated fifty seven PPV samples, who were molecular determined by RT-PCR (reverse-transcription polymerase chain reaction) targeting the genomic region (Cter)CP with specific markers and also with RFLP (restriction fragment length analysis). Analysis distinguished the two major strains, D and M, based on *Rsa I* polymorphism located in (Cter)CP. Results showed the existence of three groups of isolates belonging to D, M and PPV-rec (PPV recombinant) serotypes; PPV-D predominated from isolates studied (87,7%), while the remaining 5,3% isolates belonged to PPV-M and 7% belonged to PPV-rec.

Genetic similarity assessment and molecular characterization of some *Castanea* genus genotypes using RAPD markers

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Keywords: genetic relatedness, chestnut, molecular markers, germplasm management, breeding programs

ABSTRACT

The potential use of RAPD technique for characterization and assessment of genetic relationships was investigated in ten *Castanea* genotypes. Twelve of the thirteen decamer primers yielded scorable amplification patterns. These primers generated polymorphic bands among the genotypes studied. Some of the primers produced no amplification or unreadable gel smears.

A dendrogram was built using neighbour joining analysis of Jaccard's coefficient of similarity. The accessions clustered into two main groups and the values of genetic distances between analysed data shows that there are some genetic differences.

The chestnut accessions held at S.C.D.P. Vâlcea come from different populations. In this context, the scientific interest for identification, evaluation and long time conservation in the national collections of valuable accessions for this species is growing.

RAPD is therefore a reliable technique for distinguishing among *Castanea* accessions cultivated at S.C.D.P. Vâlcea, and also for identifying the new cultivars as well as assessing the genetic similarity among different genotypes useful in fruit breeding selection programs.

Analysis regarding the influence of non-conventional technologies on soil physical properties and corn yields

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Keywords: minimal tillage, physical properties, yields

ABSTRACT

In the present paper, it is presented the classical system comparatively with non-conventional technologies (conservative) for soil tillage referring to direct sowing as well as to the influence of corn cultivation method on soil physical properties and obtained yields.

The experiences were developed in the pedo-climatic conditions of Banat Field, within the Didactic Station of USAMVB Timişoara, during 2003-2005.

Elaboration of alternative technologies for soil tillage that may insure conservation and maintaining of its yield potential as well as the reduction of energy expenditures represent current basic needs in order to develop and perform sustainable agriculture.

An ash dump's revegetation strategy, based on the management of *Rhizobium* and Arbuscular mycorrhizae

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Keywords: *Robinia pseudacacia* L., mycorrhizae process, biomass production, N-fixation.

ABSTRACT

The paper is presenting some partial results of a research programme, proposed for shrubland ecosystem recovery, to improve the ash dump stabilization, and to restore a stable and diversified matorral in a pilot-unit representative of this specific ecosystem. The research programme approach is based on enhancing the colonization ability of woody legumes belonging to the natural succession. In this context, legumes are of special importance since they are able to take advantage of their ability to fix N, in symbiosis with *Rhizobium,* and to form mycorrhizae. In this symbiosis the fungal partner (*Glomus* spp.) colonizes and links root with surrounding ash to play a critical role by improving plant rooting and establishment, helping plants to cope with stress situations such as nutrient deficiencies, drought, contamination with heavy metals and ash dump disturbance.

Microbial community structure and enzyme activities in fly ash cultivated with *Lolium perenne* in associations with *Glomus intraradices*

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Keywords: arbuscular-mycorrhizal fungi**,** microbial biotechnology, interactions.

ABSTRACT

Arbuscular-mycorrhizal (AM) symbiosis confers numerous benefits to host plants, including improved tolerance to abiotic and biotic stresses. Although the majority of grasses form an AM symbiosis, little is known of the mycorrhization of turf-grass species. This study was conducted to determine whether how one mycorrhizal species - *Glomus intraradices* affected the establishment of a lawn perennial ryegrass (*Lolium perenne* L.). It was pointed out the fact that the ryegrass inoculated with *G. intraradices* at rates of 10.000 spores L^{-1} was able to establish seeding, even with no irrigation or fertilization inputs. Further, as AM fungi coexist and interact with other present microorganisms, changes in microbial community structure may also affect the function of AM fungi. Considering the above aspects, the objectives of our work were to investigate the effects of single AM fungus and communities of AM fungi on the growth of *Lolium perenne* cultivated on the fly ash dumps from Isalnita – Craiova Thermo-Electric Power Station and the activities of phosphatase under unsterilized conditions. This paper highlights the ecological complexity and diversity plant-microbe-soil combinations, particularly AM. It could provide a starting point of a new appreciation of the AM symbiosis role on phytorestoration of degraded soils, i.e. mycorrhizo-remediation.

The promotion and building of associative farms in horticultural field, in Teleorman District

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Keywords: Co-operative farms, vegetable growing, consultation, co-operation, agriculture

ABSTRACT

The Law of co-operative farm promulgated in December 2004, opened the gates to the initiative groups in Romania, the gates of the reorganization of agriculture based on co-operative grounds. The measure was requested by the adhering to European Union, -union that does not see with good eyes the structuring of the agricultural area in millions of lots/parcels and practicing a rudimentary agriculture on most of the area. In the country, as both in Teleorman district the first consultants appeared (for this particular purpose), the way the Japanese International Cooperation Agency – JICA, but also the first forms of cooperation, though the idea of co-operative farm still sounds like "collectivization" for many people. The mentality is very hard to beat and because the agricultural associations starting with the year 1989 ended terribly in mot cases. With the support of the Japanese International Cooperation Agency – JICA, the National Consultancy Agency started the last autumn a program of training for the agricultural producers in order to create a co-operative farm system that would produce advantageousness (high levels). These co-operative farms, that guaranties the property deals with the taking over of the production, standardization, respecting the laws of quality as well as valuing the production.

The modernization of agricultural exploitations in the Teleorman District

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Keywords: agriculture, finance, efficiency, productivity, machines

ABSTRACT

Romania's European integration brings for agriculture a series of advantages expressed in real life by the growth of agriculture's production, the encouragement of the development of middle (not more than 50 hectares) and high (more than 100 ha) agricultural exploitations, the improvement of the access of the agricultural products on UE market and the disappearance of all commercial barriers, as well as the slowing down of the migration of the manpower from agriculture. The private agriculture is characterized in present by a excessive splitting of the infield and also of the system of agricole production, with negative impact over the product's market. The support for the foundation of producers groups will contribute to the growth of the economical efficiency of agricultural exploitations, having an important role in the improvement of the quality of the products, of environment protection, of web provision and marketplace as well as in establishing a balance between consumption and offer.

Preparation of DNA samples for GMO analysis of soybean - derived foodstuffs

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Keywords: genetically modified organism, RoundUp Ready® soybean, DNA extraction, PCR, real-time PCR.

ABSTRACT

As part of an integrated protocol for GMO detection, DNA extraction is very important for getting accurate final results. Four methods for DNA purification were tested: a CTAB extraction protocol; one automated extraction kits using magnetic beads; and two kits based on column separation. DNA was extracted from different types of food matrices derived from or containing soybean. Spectrophotometer measurements and agarose gel electrophoresis indicated relatively low quality of extracts, especially for high processed matrices. Next, all extracts were tested for PCR using specific primers for plant, soybean and transformation event, respectively. All extracts showed the expected results for the plant and soybean specific primers. In the case of GM specific primers only the positive controls and one unknown sample showed the expected PCR products. The negative results for the other samples is due to either the absence of GM derived DNA or to its presence below the LOD. The best cost per sample was obtained with the CTAB method, while the automated extraction was the easiest and quickest to perform. The experiment showed that all extraction methods are good candidates for further testing and optimization. We concluded that the automated extraction kit is best suited for raw or low processed matrices while the other methods are recommended for all types of samples.

Phytophthora Infestans the agent of late blight of potato and tomato: mechanisms of pathogenicity

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Keywords: potato, tomato, *Phytophthora infestans*, effectors, pathogenicity

ABSTRACT

Phytophthora (plant destroyer) *infestans* is an important disease in tomato crop, and it is the most devastating disease in potato crop. The use of molecular methods in the study of *P. infestans:* gene silencing, genetic mapping... has clarified many aspects of *P. infestans* pathogenicity and avirulence mechanisms.

To accomplish parasitic colonization *P. infestans* use many disease proteins known as effectors. Effectors are molecules that manipulate host cell structure and function, thereby facilitating infection (virulence factors or toxin) and/or triggering defense responses (avirulence factors or elicitors) (Kamoun, 2006).

In this paper we will review the recent development accumulated in the pathogencity and avirulence mechanisms used by late blight agent.

Manifestation intensity of heterosis phenomenon for some quantitative characteristics in some F_1 carrot hybrids (*Dacus carota* L.)

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Keywords: carrot, hybrid, heterosis, morfological traits, inbred lines.

ABSTRACT

During the 2005-2006 period at the RDIVFG VIDRA an assortment of 10 F_1 carrot hybrids were analysed in order to establish the intensity of heterosis phenomenon manifestation considering its suppozitional actual and competition values. For some plant quantitative characteristics such as root weight, root length, root diameter, central cylinder of the root diameter, leaf length, petiole length, number of leaves per plant intensity of manifestation of heterosis phenomenon percent computed (H%) had different values according to F_1 hybrids (genotype), characteristic under investigation and type of heterosis. Heterosis phenomenon has been present in all the analised hybrids, but the biggest values were recorded for suppositional heterosis (H_i) and considering the morphological traits the highest values were noticed for the root weight characteristic.

Some studies on some inbred carrot lines (*Daucus carota* L.) regarding the behaviour of some quality indices of the seeds

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Keywords: carrot, inbred lines, seed, germinative energy, germinative ability.

ABSTRACT

During the 2004 - 2006 periods, at the RDIVFG VIDRA an assortment of the 20 inbred carrot lines hot male sterile and male fertile lines were analyzed for same seed quality indices. Germinative energy and germinative faculty had values raging between 70-40.66% and 96.33-81.66% respectively while one 1000 seeds weight varied between 3.25-1.70 g. The growing rate of the plantlets in their first stage of development analyzed after 15 and 30 days from spronting was positively correlated with the germinative energy of the seed sample analyzed.

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