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VEGETABLE GROWING

Future material for the sweet pepper breeding, created at VRDS - Bacău

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Keywords: genetic recombination, repeated individual selection, hybrid populations, character variability

ABSTRACT

The breeding works carried out at the V.R.D.S. - Bacău had in view enrichment of sweet pepper germplasm stock by habitations between the Romanian and foreign cultivar, and selections, performed within an advanced homozygous hybrid population. During 2008-2010 they studied the most valuable lines, as compared to Export cultivar, registered and cropped all-over Romania. The Commission for the Cultivar Testing and Registration has homologated the line L-75. Among the material obtained the lines L-75; L-53 and L-51 gave the highest yields.

Determination of the production performance of new carrot cultivars in Constanta area

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Keywords: assortment of carrots, comparative culture, production

ABSTRACT

This paper presents the study of a new assortment of new hybrids in terms of culture in Constanța County. To achieve experience were studied 10 variants presented in Table 1. Of the 10 variants, nine are new hybrid cultivars, as a witness was elected a traditional variety Nantes improved recently. Sampling was performed at different dates depending on the earliness of each variant group. The work began when the thickened roots of carrots have reached typical size of each cultivar. At harvest time the plots were recorded productions repetitive experimental variants. Production reported in tonnes/ha was interpreted statistically by variance analysis method.

New carrot cultivars studied experience can be grown in production results in the Municipality of Constanța; Biometric determinations reveal that the entire experimental range shows values very close to those presented in catalogs of company; Napoli F1 is remarkable that the early production, harvested at 90 days after the mass emergence was 27. 70t/ha; The group is distinguished Bangor F1 mid early cultivars with a production of 71.43 t/ha and late cultivars Kamaran F1 group with 78.24 t/ha; Washers are suitable for freezing as nearly the entire range except Chantanay type cultivars or Flakke useful for freezing of carrot cubes.

The effect of silicate minerals on the head weight of white cabbage and on the colonization and damage of onion thrips

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Keywords: white cabbage, *Thrips tabaci*, onion thrips, antixenosis, kaolin, silicate minerals

ABSTRACT

In the last few decades onion thrips has become a major pest of white cabbage in the summer production period. Although the most effective control measure is the use of resistant varieties, little is known about the resistance mechanism(s) involved. In 2008, a study was carried out with 6 cultivars to confirm that antixenosis is at least partly responsible for the resistance of white cabbage against onion thrips. The number of adult thrips was counted on the outer ten head leaves twice during head formation. Onion thrips damage was also assessed at full maturity of cabbage. Cabbage head weight was recorded at each assessment. Two different silicate mineral products Surround® WP and Kolloidizált Mikromeliorit® was applied as foliar spray treatments several times during head formation. Antixenosis was found to be responsible for the resistance of 'Balashi', 'Bloktor' and 'Riana' cultivars, since the number of colonizing onion thrips adults found on head leaves was significantly lower than that of 'Green gem', 'Hurricane' and 'Quisor'. The resistant cultivars ('Balashi', 'Bloktor' and 'Riana') similarly suffered significantly lower damage than the susceptible ones ('Green gem', 'Hurricane' and 'Quisor'). The foliar spray treated cabbage heads were usually significantly bigger, than the untreated ones. The increased growth of cabbage was most likely caused by the positive effects of the silicate minerals on the development of cabbage. The foliar spray treatments in general had no effect on thrips colonisation and in consequence on thrips damage but it seemed to increase the number of colonizing thrips adults and in consequence the damage of thrips in 3 cases (out of 12).

Comparative study on total polyphenolics and flavonoids content at artichoke and cardon

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Key words: *total polyphenolics, flavonoids, cardon, artichoke*

ABSTRACT

This paper presents a comparative study of total polyphenols and flavonoids content in the artichoke and cardon. Evolution/dynamic of the content of the total polyphenols and flavonoids was performed on some of these plants vegetative prgans: leaves, the inflorescences flesh (edible part) at the consumption stage and after overcoming this phase, during flowering. The total polyphenol content was analyzed by Folin-Ciocalteu method and the flavonoid content by spectrophotometry using the method specified in the Romanian Pharmacopoeia X. The results have shown that comparing with leaves, the edible part contains a 2-3 times larger amount of total polyphenols and a 1.17 times of flavonoids, first in terms of content ranged the red artichokes. After passing the optimal timing of consumption, during blooming, the amount of total polyphenols and flavonoids in the inflorescence's flesh falls very strongly. Cardon leaves contain 1.3 to 1.5 more total polyphenols and 1.1 more flavonoids comparing with artichoke.

Changes of some biochemical and agrochemical characteristics of tomatoes storage

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Keywords: tomatoes, storage, chemical and biochemical characteristics

ABSTRACT

Tomatoes are highly perishable vegetable with a very limited shelf life. Thus, because of their chemical and physical constitution, tomatoes can be kept temporarily; shelf life is a subject to the maturation phase occurring at harvest and conditions of transport and temporary storage. In 2007 were studied in greenhouses and field of the University of Agronomic Sciences and Veterinary Medicine in Bucharest 6 cultivars of tomato: Buzău 1600, Tamaris, Lustro, Abellus, Rz and Electra. After harvesting and analysis tomatoes were kept in plastic containers in a refrigerator, under conventional storage technology by freezing temperatures of 7-10^{0}C and 85-90% relative humidity to see their capacity for storage. The researches shows that tomatoes are unable to maintain the appearance and physical characteristics for more than a week, that firmness and bacterial attack; Nitrate content decreased in all cultivars investigated irrespective of the culture used (field, greenhouse) inertia due process of nitrogen metabolism in plants; Phosphorus and potassium content decreased slightly during storage; Dry matter content increased during the week following the loss of firmness of tomatoes and lower water content; Amount of carbohydrate decreased less, almost insignificant in tomatoes grown significantly in the field and greenhouse grown; Acidity decreased slowly during the first days (3-5 days) and then significantly to the seven days of storage.

Iulica, a new variety of *Salvia officinalis* L. obtained at V.R.D.S. Bacău

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Keywords: biologic, germplasm, organic, system culture**,** biodiversity

ABSTRACT

Initial diversity of this species was enhanced by specific factors of evolution (selection, mutation, isolation), and also by ecological conditions of the areas and agricultural technique of the areas of culture. Thus, local populations today are characterized by a evident diversity that deserves to be preserved and valued. Starting from this premise, the present study was carried out essentially aiming to draw on existing information in the literature, essential to base the study of biodiversity of this species, namely: the importance of culture, origin and systematic of species, botanical features, biological and ecological features of cultivation

Verdana, a new *Phaseolus vulgaris* L. variety obtained at V.R.D.S Bacău

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Keywords: breeding, genealogical selection, resistance, productivity, precocity

ABSTRACT

In order to diversify and enrich the stock of germplasm with source of genes that control the useful characteristics for breeding process at beans garden (potential for high production, short growing season, quality, resistance to mildew and viruses, we used the following method

- **genealogical selection in populations,**
- **selection of the valuable lines and testing in selection field at least three years**
- **study in comparative culture of obtained lines**
- **resistance testing in artificial infection conditions**
- **study in comparative cultures in pedo-climatics condition of area and in different culture areas**
- **observations and biometrical determinations regarding the main morphological characters**
- **studies regarding variability of characters, obtained lines and created new cultivars**

Organic vegetable growing on ecological practice

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Keywords: organic soil, soil biological activity, michorize, mushroom compost, humus, sustainable development.

ABSTRACT

The transformation of land use on soil organic conventional correction requires specific indicators. Maximum efficiency of the methods tested was the method of assessing soil biological activity where some accuracy was high. Improve the soil was done by adding compost and biomass rotation degraded and introduction of legumes.

The study of eggplant ability for cultivations in tunnels in ecological agriculture conditions

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Keywords: cultivars, yield, assortment, hybrid, variety.

ABSTRACT

The experimentations were accomplished at S.C.D.L. Bacau during 2007 – 2009. In 2007, the hybrids Falcon F1 (83,0 t/ha), Topaz F1 (93,2 t/ha) obtained higher production comparing with the control Contesa (78,8 t/ha). In 2008, the hybrids: Aragon F1 - 80,4 t/ha, Tudela F1 - 57,3 t/ha, Black Pearl F1 - 76,4 t/ha, Edna F1 - 56,3 t/ha, Mirabelle F1 - 46,0 t/ha registered superior productions than Contesa (control) – 51,4 t/ha. In 2009 the hybrids: Mirabelle F1 - 68,4 t/ha, Edna F1 - 78,1 t/ha, Black pearl F1 - t/ha 88,4, Epic F1 - 96,9 t/ha had superior productions than Contesa (m) - 51,4 t/ha. In 2007 the hybrids had a greater weight of fruits (Falcon F1 - 322,1 g/fruit; Topaz - F1 371,4 g/fruit) comparing with the fruit's weight of Contesa variety - 200,5 g/ fruit. In 2008 the fruits of the following hybrids Aragon F1 - 370,1 g/fruit; Tudela F1 - 586,8 g/fruit; Black Pearl F1 - 409,5 g/fruit; Edna F1 - 429,4 g/fruit; Mirabelle F1 - 244,8 g/fruit had a higher weight than the fruits of Contesa variety - 195,4 g/fruit. In 2009 Mirabelle F1 - 163,8 g/fruit, Edna F1 - 315 g/fruit, Black Pearl F1 - 244,8 g/fruit, Epic F1 - 295,9 g/fruit had a higher weight than Contesa - 201,2 g/fruit.

New technological elements in setting up an asparagus plantation (*Asparagus officinalis* L.)

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Keywords: asparagus cultivars, seedling age, technology of plantation

ABSTRACT

Asparagus has been used from early times as a vegetable and medicine, owing to its delicate flavor and diuretic properties. There is a recipe for cooking asparagus in the oldest surviving book of recipes, Apicius's third century AD De re coquinaria, Book III. It was cultivated by the ancient Egyptians, Greeks and Romans, who ate it fresh when in season and dried the vegetable for use in winter. Asparagus is pictured on an Egyptian frieze dating to 3000 B.C. France's Louis XIV had special greenhouses built for growing it. It lost its popularity in the Middle Ages but returned to favor in the seventeenth century.

Comparative study regarding the agronomic performance and mitotic activity at *Capsicum annuum* L. plants regenerated *in vitro* versus seed-born plants

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Keywords: pepper, somaclonal, genetic, fidelity

ABSTRACT

The cultivation of different explants on nutritive media "in vitro" is often related with an increase in the frequency of structural chromosomal alterations as well as an increase in the frequency of gene mutations. How these factors are related to one another and how they cause changes in the chromosome and gene mutation rates are not well understood. However, the fact that all these external agents cause similar changes and indicate a broad fundamental process may be a primary cause of mutations. These mutations and changes from genetic level are translated in the phenotype of the plants with effect in the agronomic performance of regenerants. In the present study we focused on a number of phenotypic and genetic features in order to establish if there are any changes in micropropagated plants comparing with seed grown plants. The phenotypic features analyzed in the present study are: plant's height, number of leaves, number of inflorescences, number of flowers, number of fruits, percent of setting out the fruits, production. The genetic analyses refer to mitotic activity (mitotic index and percentages of cells with chromosomal aberrations). In the analysis accomplished in the present study we differentiated the micropropagated plants depending on the originated explant (from which the plant were regenerated).

The effect of organic products in the approving process on eggplant seed germination

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Keywords: eggplant seeds, organic product, germination

ABSTRACT

The study was conducted in the Laboratory of Vegetable and Ornamental Plants, Faculty of Horticulture, University of Agricultural Sciences and Veterinary Medicine - Bucharest, 2010. Research results have shown that the wetting of eggplant seeds for 60 minutes before sowing in solutions of different concentrations BioSeed 3 + resulted in a shorter period of germination. Also, we observed improved seedlings.

The genetic control of pigmentation on summer squash fruits (*Cucurbita pepo* conv. *giromontia* Alef.)

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ABSTRACT

This research was carried out on the Research Development Institute for Vegetable and Flower Growing Vidra, on the Breeding Laboratory field. The purpose was to study if the fruit color to *Cucurbita pepo* conv. *giromontia* **Alef is a dominant and recessive phenomenon on F1 and F2 generations. Crossing white fruit x yellow fruit resulted creamy fruits (intermediary color) in F1 and 1:2:1 segregation rapport in F2, because of semidominant W gene (white) against B1 gene (yellow). Crossing white fruit x green fruit resulted white fruits in F1 and 3:1 segregation rapport in F2, because of dominant W gene (white) and recessive L2 gene (dark green). Crossing green fruit x yellow fruit resulted yellow fruits in F1 and 3:1 segregation rapport in F2, because of dominant B1 gene (yellow) and recessive L2 gene (dark green).**

Anatomical studies on single and double grafting of cucumber plants on different types of rootstocks under plastic houses

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ABSTRACT

Experiment was carried out under plastic house conditions during the early summer season of 2005 and 2006 at Sakha Protected Cultivation Site, Ministry of Agric., Kafrelsheikh Governorate. The object of experiment was to study the effect of single and double grafting onto four types of rootstocks (fig leaf gourd, bottle gourd, pumpkin and cucumber, cv. Beit Alpha) on successful grafting (%) and anatomical structure of grafting union. The results are summarized as follows:

1- **Single self-grafting of cucumber and grafting onto fig leaf gourd stock gave the highest successful grafting (%).**
2- **Grafting onto fig leaf gourd stock with either single or double root gave the largest area of vascular tissues (xylem and phloem) in the grafting union.**

Studies on single and double grafting of cucumber plants on different types of rootstocks under plastic houses I. vegetative growth

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ABSTRACT

The experiment was carried out under plastic house conditions during the early summer seasons of 2005 and 2006 at Sakha Protected Cultivation Site, Ministry of Agric., Kafrelsheikh Governorate. The object of the experiment was to study the effect of single and double grafting onto four types of rootstocks (fig leaf gourd, bottle gourd, pumpkin and cucumber, cv. Beit Alpha) on, growth, flowering and fruiting, fruit yield and quality of cucumber F_1 hybrid, cv. Delta Star. The results are summarized as follows: all grafting treatments increased vegetative characteristics, earliness of flowering especially plants grafted onto fig leaf gourd in most parameters compared to ungrafted plants.

Research on the development of some processing vegetable technologies as "Mixed vegetables for soups and stew"

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Keywords: canned food, tomatoes, peppers, carrots, greens

ABSTRACT

The activity of vegetable processing has been a necessity in turning vegetable that could not be recovered economically. First it was vegetables that were eliminated through the multiplication of cultivars, helped by the method of maintenance, since they were outside the ranges of confidence. Also, often, large amounts of fresh vegetables produced in the development sector for exploit, had no buyers or the prices were unprofitable. This gave rise to the decision to carry out the vegetables processing.

Planting period influence on the onion yield obtained from chive-planted crops and directly-planted crops, in the crop region Vinga

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Keywords: seeds, bulbs, variety, population, mechanization.

ABSTRACT

In order to obtain onion yield with costs that are as reduced as possible, the crop technology requires several approaches: for example, crop planting in different seasons (autumn or spring), in concordance with the planting method (chive planting or direct planting) and the possibility of high mechanization (the direct planting method allows total mechanization). The onion production in our country is performed with the application of the three well-known crop technologies: chive planting, seedling planting and direct planting. These methods range widely in terms of crop regions in our country, and also with the agri-ecologic conditions. The Romanian onion growers are reluctant when speaking about the direct planting crop technology, because of the great rigor required by this. The onion crop region from Vinga, a region with tradition in chive-based onion cultivation, and especially in chive production as biological material for multiplication, is known by onion growers due to this occupation for generations. The possibility to obtain bulbs for consumption belonging to the „*local onion population of Vinga*", from directly-created crops, is worth of study, too.

Study of the impact of foliar fertilizers and fertirrigation modern systems upon the production of some pepper hybrids cultivated in cold Spanish construction solariums

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Keywords: technology, culture, efficiency, costs, metabolism.

ABSTRACT

The increase of energy costs (electricity, heating, carburant), used for peppers production in the forced culture system, determined the decrease of surfaces used in this purpose and at the same time growers' conception for obtaining productions in protected spaces, where the production costs are incomparable lower. Evidently there were improved the culture technologies and even modernized those operations that have a major impact upon the production level, among these being the cultivar, the irrigation method, the root and extra-root fertilizing system and finally the culture space, to which the construction costs significantly influences the economical efficiency of the production activity.

Preliminary research regarding the field culture of the bitter cucumber (*Momordica charantia* L.)

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Keywords: plants, cucurbitaceae, technology, diabetes

ABSTRACT

The *Momordica charantia* species was cultivated in field, in Bucharest area, in order to study the behavior of the plant, from the vegetative growth and fructification point of view, as a plant whose fruits are used for consumption. It was cultivated also as an ornamental plant, to form a green wall along a fence, highlighting the aspect of the plant, its leaves, flowers, and fruits in different stages of maturation, through their remarkable aspect, emerald green color and shine in the early stage and vivid orange at full maturation. The contrast between the color of leaves, of flowers and matured fruits, which make this species suitable for this purpose, was observed. In culture, the bitter cucumber reacted very well to the climatic conditions from Bucharest area, being measured by the vegetative growth of the plants and the forming of fruits. This way, the plants had a vegetative growth of more than 2 m, with many leaves (36-38) and 15-16 flowers. Almost half of the flowers formed fruits, their formation being influenced by the environmental conditions of the year 2010. The weight of the fruits reached values of 85-100 g, but the harvesting is made in phases and in different growth stages, which highly influences the fruit weight. From the ornamental point of view, the plants behave very well, have high ramification capacity, are not attacked by diseases, bloom and form very attractive fruits, it gives one a feeling of relaxation.

The influence of stimulating the artichoke seeds upon their germination

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Keywords: Moistening, chemical stimulation, emergence, varieties

ABSTRACT

The hard tegument of the artichoke seeds is responsible for the slow germination and the reduced value of their faculty of germination. The results presented in this paper prove the beneficial impact that the stimulation of seeds has on their germination parameters. By moistening the seeds in water for 72 hours, the value of germination has grown up to 98% for the Unirea variety, 75% for the Green artichoke and 47% for the Red one. The results obtained by the stimulation with Atonik are not as good as the ones previously presented, the values of the germinating power being lower for all the varieties analyzed. By stimulating the seeds, the number of days necessary for the emergence of artichoke (15-16 days) can be reduced by two to five days. The artichoke varieties have specific reactions to different methods of stimulating the germination of the seeds, the most influenced species being Unirea and the Green artichoke.

Research on early production and total production in varieties of sweet peppers (Hó F_1 Julianus F_1, Campona F_1) by fertilization and irrigation method in greenhouses

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Keywords: peppers, fertilization, Bactofil, Alginit, irrigation, drip, microsprinkler, Hó F_1, Julianus F_1, Campona F_1, organic.

ABSTRACT

The role of the organic ecological farming system is to produce much cleaner food, more appropriate to human metabolism, but in complete correlation with environmental conservation and development, respect for nature and its laws. One of the main goals of organic farming is to produce food with authentic and attractive taste, texture and qualities. We must consider the high rate of the population growth globally that compels us to a more efficient exploitation of the existing opportunities, to identify and promote new solutions, that have yet to respond to the new requirements tailored to the economic potential of farmers in Romania. These considerations motivated the choice of the research theme and we intend to improve pepper culture on an organic substrate, a mixture of earth, using natural fertilizers (Alginit and Bactofil) and two irrigation systems (drip and sprinkler) with three varieties of pepper (Hó F_1 Julianus F_1 and Campona F_1).

The influence of treatments with some fungal extracts on plants of strawberry grown under field conditions

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Keywords: *strawberry, extract, Botrytis cinerea*

ABSTRACT

The study was carried out in the field from the Department of Vegetable and Ornamental Plants, USAMV Bucharest during 2008-2010. In this study we used the strawberry as biological material, variety Senga Sengana. The experimental variants consisted in treatments with chemicals and fungal extracts applied on plants and soil. After inoculation with pathogen we found that plants in variants treated with fungal extracts showed increased resistance to *Botrytis cinerea* as compared with the untreated control. All fungal extracts induced resistance to *Botrytis cinerea* in strawberry plants more efficiently when administrated on leaves. They can be used for plants protection in the context of sustainable agriculture.

Influence of planting material on plant growth and production of sweet potatoes

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Keywords: Methods for rooting, cuttings, varieties, production potential

ABSTRACT

Given that seed potatoes are not the conditions of our country, crop establishment is by rooted cuttings, roots obtained from the mother, forced to advance. The results presented in this paper shows that these sequences defining technology for culture, influence plant growth and production potential of the different varieties of potatoes. In general, variants created by forcing root cuttings derived from soil and rooted in water, the number of shoots was higher and the variety Victoria IANB was more vigorous than Crux variety. Cuttings rooted in water have led to the doubling of the variety Crux roots and root mass increased in both varieties. Productions were obtained roots from 24.16 to 27.21 t/ha, significantly influenced by variety and method of rooting cuttings, peaking at Crux variety when cuttings were planted roots coming from the forced peat and rooted in water.

The evolution of qualitative characteristics of new tomato cultivars during vegetation period

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Keywords: tomatoe, solarium, cultivar

ABSTRACT

Tomato production in Romania is provided by the cultures made in the field, greenhouses and solariums. The diversity of cultivars increased offerings of different companies after 1990. This diversity has resulted in quality and variety in consumer behavior and is useful to check the plants from transplant to fruition. The choice of a particular cultivar should be taken after a preliminary technical information so those who sell seed and the growers who have tried these cultivars. New cultivars are introduced initially in small areas and then after checking the quality and production results are put on large areas. This study was conducted in order to know the behavior of tomato cultivars in the solar crop in our country. Cultivars tested were Marisa F1, F1 Katerina, Birdie F1, Abellus F1 and Alboran F1. During the harvest period were analyzed tomato fruit in terms of their quality in three periods namely: the early ripening fruit, the maximum harvest period at the end of the harvest. Analysis of elements N, P, K unchanged presents information on the quality of tomato consumption and the intake of elements necessary for human metabolism by eating those fruits. To determine the quality has been considered the Order No. 1 of Ministry of Health from 2002. Such determinations were made on the content of heavy metals, nitrates and nitrites during the harvest period. The results show a different behavior of cultivars on the charge of elements necessary for human consumption but also the dangerous elements.

Biochemical characteristics and yield obtained at tomato cultivars

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Keywords: tomatoe, solarium, cultivar

ABSTRACT

Both globally and in our country tomatoes grow on 70 - 75% of surfaces used in the production of vegetable greenhouses and solarium. Currently growers in Romania used almost exclusively as a biological material of foreign origin, F1 hybrids of European countries such as Holland, France, Israel. These cultivars should be tested before making recommendations on their culture as they pursue the possibility of acclimatization tests in the climatic conditions of our country but also their production capacity and their capacity for consumption. The experiments took place in a solarium Bărcăneşti common, Prahova county and experimental variants that were tested are cultivars Marisa F1, Katerina F1, Birdie F1, Abellus F1 and Alboran F1. During the growing season were made determinations on the characteristics and taste of tomatoes harvested production was monitored developments. The results have brought relevant information on the recommendations made to elect a competitive cultivar.

Researches concerning the foliar fertilization of potato culture on salted soil

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Keywords: foliar fertilizer, FOLIMAX, doses, production, quality

ABSTRACT

The work presents the results obtained on potato summer culture in Ialomita district, on salted soil, using a foliar fertilization with FOLIMAX. It was studied the effect of this fertilization, using 3 progressive concetrations as compared to the unfertilized witness. The greatest productions have been obtained at those variants at which was applied the foliar fertilzer FOLIMAX in a dose of 8l/ha. In this case, as compared to the unfertilized witness, the number of tubers for each hole increased with 1,2, the mass of the tubers increased with 2,4 and the growth of production was of 130%. The foliar fertilization also contributed to the improvement of the production quality as it was proved by the prevalence of the tubers from the superior comercial categories (12-18 very big tubers and 44-47 big and middle tubers).

Researches on the postharvest quality preservation of the melons *(Cucumus melo)*

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Keywords: melon, refrigeration, postharvest treatments

ABSTRACT

The research purpose was to prolong the preservation of commercial quality of the melons. In this case have been studied the influence of refrigerated storage conditions and local treatments with fungicides applied on peduncular scar area, the most vulnerable to the pathogens attack. For experimentation have been used melons from internal production, belonging to Polidor variety. The refrigeration (at 8-10°C) of the melons determined the prolongation with 13 days of the period of storage in comparizon with the ambiental conditions (30-32°C in the harvesting time). At the same time the application of a fungicide paste on the area of peduncular scar, reduced almost four times the decay losses in that zone of the melons, during storage period, and had a favourable influence on the quality parameters (pulp fermness and soluble solids content).

Research on the behavior of certain potato varieties in the minituberization using industrial substrates

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Keywords: soiless cultures, minitubers, plantlets, substrates, cultivar

ABSTRACT

In the years 2009-2010 were a series of experiences polifactorials mounted in protected areas belonging to the National Institute of Research and Development for Potato and Sugar beet Brasov. For culture substrates, soil was used as a control, and perlite and clay balls were used as industrial substrates and biological material was composed of minitubers and plantlets obtained „in vitro". At the end experiences were recorded minitubers number and weight of the four sizes, respectively: <15 mm 15-25 mm 25-35 mm 35-45 mm.

Research on the influence of culture conditions, for certain potato cultivars in the first clonal link Lăzarea - Harghita County, 2008-2009

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Keywords: minitubers, tunnels "insect proof", planting density, planting size

ABSTRACT

In this experience we watch increasing the coefficient of potato propagation by seed, planting, using different classes minitubers calibration varieties of early, mid early and semitardive: Ostara, Christian, Roclas, Desiree; valorification of planting material with a high biological value of the fraction <25 mm, from the greenhouse (mini-tubers) compared with 25-35 mm fraction; development of differentiated technological cultivation to produce superior clonal material link in protected areas, such tunnels "insect proof", depending on variety, growing conditions, reliable ecological conditions; obtain virus-free planting material (without infection); obtain a bigger amount of seed.

Sweet corn growing in sandy soil

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Keywords: Yield quality, nutrient supply, overdose NPK

ABSTRACT

In our experiment we have studied the effect of nutrient supply, as an important technological element, on earlier sweet corn. In the same time we searched the answer, if the double incresing of nutrient elements (NPK) dosis, more than recomanded by nutrient balance approach system, we can improve yield's quantity and quality of sweet corn. The treatment without fertilization – based on symptoms, because of nitrogen deficiency – produced weak results, but in case of sugar content it has the highest values. The plants from fertilized treatments didn't produce any deficiency or overdose symptoms. Compared to control treatment, the application of higher fertilizer doses didn't influence significantly crop's development, so we consider adequate to apply, in similar growing circumstances the fertilizer dosis included into control treatment. Double increased NPK dosis didn't increased significantly the yield of sweet corn. In this experimental year, 2007, we could not reach the planned yield quantity.

Comparative study of new tomato cultivars for introducing high yield capacity and very early maturity varieties in vegetable production area of Matca

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Keywords: very early maturity, productivity, Israeli hybrids

ABSTRACT:

Seven new tomato varieties (*Licopersicum esculentum* Mill.), hybrids F1 (Amanda F1, Lady Rosa F1, Rosaliya F1, Tovi Roca F1, TL-90664 F1, TL-90665 F1 and VT-60990 F1), with indeterminate growth, Israeli origin from Zeraim Gedera seed company have been tested for their yield capacity and earliness characteristics compare with Menhir F1 (Netherlands, Nunhems seeds company) as control variety. The tests have been made in the experimental plots of SC MARCOSER SRL from vegetable production area of Matca, Galati County. The productivity (Total Tomato Yield) was quite high at all varieties studied (over 80 tons/ha with an exception of TL-90664) and with Amanda F1 the productive results was over 100 tons/ha in conditions of only 3 clusters cycle in very early spring transplanted. The most earliness varieties was found Amanda F1 with the first harvest at only 77 Days after transplanting (DAT) and Lady Rosa F1 at 81 DAT. Also the total time of harvesting was the lowest at Amanda F1 and Lady Rosa F1 with 22 days respectively 24 days between first and last harvest. After this study it was successfully introduced as commercially varieties Amanda F1 for very early spring cycle and Lady Rosa F1 and Tovi Roca F1 for early spring cycle.

The study of new modern products used in Matca vegetable area greenhouses in order to increase the earliness and productivity of tomatoes

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Keywords: thermic plastic film, IR additive, thermicity, second cover layer, heat curtain

ABSTRACT

The effects of new type of plastic film with thermicity properties was studied in unheated greenhouses compare with no IR additives plastic film. The thermic plastic film was used as second cover layer of the cold greenhouses from Matca as a "heat curtain" in order to block infrared (7-14μm) radiation to reduce the risk of frost and keep the heat inside. The new plastic film (UV-IR added PE film, 40 microns thickness, 12 months guarantee) tested by MARCOSER in Matca was provided from VATAN PLASTIK, Turkey and was compared with the standard plastic film from Romanian producers. Because of the heat retention during night all physical characteristics studied of the tomato culture was positively influenced: vegetative growth, number of fruits per plant, average weight per plant and also the earliness. The experiment proved the efficiency of thermic plastic film used as second cover layer in greenhouses from Matca compare with standard plastic film. Also the productivity was increased with almost 10% in the greenhouse with thermic plastic film and the first harvest was earlier with 4 days.

Contributions to improvement of the onion winter over pass technology in South-East region

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Keywords: cultivar, density, production, frost resistance

ABSTRACT

The researchers aimed to stagger the onion crop for a longer period in the climatic conditions of the south-east of the country and supplying the market with this vegetable species in a poor period. By using this technology the harvesting period has been increased with 30 days. In the south-east area of the country where the autumn is quite long and there are conditions for growing and developing of onion plants, three period of crop establishing have been experimented: 15 August, 1 September and 15 September. The following cultivars have participated to the study: Radar, Swift, Sibir (Bejo), Glob Yellow Danvers (Seminis), Hamasodachi and Swallow (Kaneko Seeds) and the Romanian species Diamant. The best results have been obtained by species Swift and Swallow (frost resistant, increased crops, superior quality, freezing tolerant, high production, high quality). The best moment for establishing the crop following three years experiments is the end of August-beginning of September. By establishing of both the best moment for establishing the crop in autumn and for the cultivars resistant to low temperature, the improvement of winter over pass technology has been realized, technology which was applied by farmers, obtaining higher profits than using the technology by establishing the crop in spring.

The influence of assortment and fertilization technology on the production of green onions shallots

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Keywords: shallots, assortment, fertilization technology

ABSTRACT

Shallots, a widespread and little cultivated crop in Romania, is also least studied at national level. Therefore we propose, through a series of several studies conducted in 2008-2010, to establish as many aspects of the biology of this species, and also to find a proper growing technology. Through this paper we propose to find if the fertilization technology influences the production of shallots regarding green onion and also to compare the common onion with shallots using it as green onion.

The influence of assortment and irrigation technology on the production of shallots

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Keywords: shallots, variety, irrigation method

ABSTRACT

Shallots, a widespread and little cultivated crop in Romania, is also least studied at national level. Therefore we propose, through a series of several studies conducted in 2008-2010, to establish as many aspects of the biology of this species, and also to find a proper growing technology. Through this paper we propose to find the appropriate method of irrigation for this crop comparing drip irrigation with sprinkler irrigation.

Preliminary results on the behaviour of new cultivars of onion in Dobrogea County

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Keywords: direct sown onions, onion chives, cultivars, production

ABSTRACT

Onions are one of the vegetable species grown in large areas of the world, in Europe and Romania. Crops dry bulb onion production is established by planting shallots by direct seeding and planting of seedlings. In recent years the range of cultivars of onion directly sown and diversified areas with this kind of culture in our country have increased, including in areas where the old economic practice, this technology is not culture. This paper presents the results obtained for onion production in Dobrogea County using new cultivars, compared with cultivars using traditional native species.

Behaviour of some vegetable species cultivated on different types of soil in Brăila County

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Keywords: production, tomatoes, onion, cabbage, green pepper

ABSTRACT

Soil's physical, chemical and biological attributes influence their pretability for cultivating certain species of vegetable plants. The four vegetable species: tomatoes, onion, green pepper and cabbage have been cultivated on different types of soil: typical chernozem, saline chernozem, calcareous alluvial soil and saline alluvial soil, analyzing the level of the productions obtained for each and every species. The best results regarding the production had been obtained on typical chernozem for onion species (34.75 t/ha), tomatoes (53.66 t/ha), green pepper (33.43 t/ha). Cultivating these species on the other types of soil had as consequence a decrease in production, being recorded negative differences as against the control sample with statistic coverage. For autumn cabbage, the highest production was obtained on calcareous alluvial soil (90.44 t/ha), cultivating this species on the other types of soil (saline chernozem and saline alluvial soil) lead to obtaining very significant negative differences as against the control sample with statistic coverage. It can be drawn the conclusion that out of the types of soil analyzed, typical chernozem is very well suited for the culture of the following species: onion, tomatoes and green pepper, and for the autumn cabbage culture, the calcareous alluvial type of soil is best suited.

The quality of fruits at some species of solano-fruitful vegetables (tomatoes and pepper) cultivated in Brăila County

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Keywords: shape index, acidity, C vitamin, pulp, pericarp

ABSTRACT

In order to establish the quality of fruits, there had been analyzed six cultivars of bell pepper (Amis, Belladonna, Yellow yellow, Hungarian, Galben superior and Red Kinght F1) and four sorts of tomatoes (Rio Grande, Kecskemeti, Coral and Benfica) cultivated into the field.

The quality of pepper and tomatoes fruits is given by some physical characteristics, by the chemical composition and the technological characteristics.

Out of the pepper cultivars, from the point of view of the average weight of the fruits, it was remarked the hybrid of red bell pepper, Red Kinght F1 (169.56 g), and at tomatoes, it was remarked Benfica sort (164.53 g). In what concerns the chemical composition, high values of the content in dry substance were obtained at red bell pepper hybrid, Red Kinght F1 (9.90%) and at the cultivar with yellow fruits, Yellow yellow (6.57%), and out of the tomatoes sorts, the highest values were obtained at Rio Grande (4.88%). The content of C vitamin was higher at Galben superior sort (234.08 mg/100 g s.p) and at Coral sort 206.97 mg/100 g s.p., and the titrable acidity had the lowest value of 1.25 at Galben superior sort and the highest at Belladonna F1 (1.50), and out of the tomatoes sorts, the highest acidity was at Kecskemeti (3.60).

Pulp's ratio in the morphological set up of the tomatoes fruits was the highest at the two sorts of Coral (81.85 %) and Benfica (79.99 %), this recommending them for the consumption both in fresh state and for industrialization.

The pulp had values of over 80 % at all cultivars analysed, being remarked Belladonna F1 (86.34 %), Red Kinght F1 (86.30 %) and Galben superior (87.58 %) cultivars, as against the cultivars of Hungarian (81.11 %), Yellow yellow (82.11%) and Amis (82.86 %).

The creation of dill variety resistant to *Fusarium oxysporum*

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Keywords: resistance gene, interspecific cross

ABSTRACT

To clarify the contradictions between specialists on the isolation of seed varieties and different species was taken in study the cross compatibility between varieties and different species. Among these studies are included and the cross compatibility between (dill x fennel), (dill x caraway) because the experimental fields from ICDLF Vidra maintain the dill variety Comun de Vidra, and the fennel, the caraway and other umbelliferous herbs were in the collection of rare plants.

Darsirius – new tomato variety for industrialization, obtained at SCDL Buzău

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Keywords: tomatoes, breeeding, segregation, genotype,

ABSTRACT

Disposing of a valuable germplasma base (over 200 genotypes), the breeders from S.C.D.L. Buzău tried to obtain tomato varieties in order to correspond to different usages (fresh consume, ketchup, juice, paste etc.). The researches made in order to obtain this variety started in 1996 and finished in 2006 with the homologation of a new tomato hybrid Siriana F_1 which has an undetermined growing used for fresh consume. Also, in 2006 there was homologated another tomato variety, called Kristin, with determined growing used for industrialization. In 2010, there was homologated Darsirius tomato variety with determined growing used for industrialization.

Frankliniella occidentalis Pergande species monitorization from tomatoes crop of protected spaces with the help of blue sticky traps

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Keywords: controlling, physico-mechanical methods, californian thrips

ABSTRACT

A modality more used in unpolluted controlling pests, was the usage of blue adhesive traps and it was a physico-mechanical controlling of thysanoptera pests, especially of californian thrips (*Frankliniella occidentalis* Pergande) from protected spaces of tomatoes crops from Agricultural Society Agro-Dor., Dorobanti locality, Arad district. Identification of thrips species directly on the trap is very difficult. Some species can be identified in this way including californian thrips, *Frankliniella occidentalis* Pergande. Blue sticky traps attract a large number of adults and can be used directly in controlling or monitoring this pest population. After the investigations made it was observed that the biggest number of species was collected on trap no. 3 at the second reading, and the smallest species registered on trap no. 1 at the third reading. In tomatoes crop, on blue traps registered in average 36.25 species/cm^2 at the first reading, 73.25 species/cm^2 at the second reading, and the third reading collected in average 21.18 species/cm^2. After realizing observations the conclusion concerning *Frankliniella o ccidentalis* Pergande species number collected on blue adhesive traps oscillated between 27 436 species/trap and 49 196 species/trap.

The attack produced by Frankliniella *occidentalis* Pergante on tomatoes crops, IInd cycle, from protected spaces

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Keywords: californian thrips, economical stage of damage, density

ABSTRACT

Cultures from greenhouses, which runs from midsummer until the coming cold season, is an optimal environment for the development of californian thrips, *Frankliniella occidentalis* Pergande. On the attack of the californian thrips, *Frankliniella occidentalis* Pergande, we can say that this insect is one of the most common and important species that affects the quantity and quality of cucumber production in protected areas and are necessary effective measures to controlling it. Damages produced by californian thrips (*Frankliniella occidentalis* Pergande) depended by plant development degree in the attack moment and insects density. *Frankliniella occidentalis* Pergande was active biological vector for tomatoes mosaic virus which bore to losses of 50-90% from the production in European Union countries and notwerely. That virus delivered in greenhouses, at the vegetables, especially to tomatoes, causing important economical losses. The manifestation of that disease was different in function on plant that it attacks. The economical step of damage was of 1-2 adults or larva on plant. In the tomatoes crop, IInd cycle, the pests populations density was 8,16 insects/ flower in average, that means the economical step of damage of that insects was beat. Attacked and untreated cultures may be compromised, so it is very important to know which is the number of individuals *Frankliniella occidentalis* Pergande on plants, in order to apply effective treatments, which reduce pest population.

ORNAMENTAL PLANT

Effect of the nutrition and inflorescences development stage at harvest on the quality conservation of the gerbera's flowers

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Keywords: azote, potassium, diameter, vase-life, temperature, cultivar

ABSTRACT

Gerbera's flowers, although they are very beautiful, live for a short time after harvest; that's why many consumers avoid them. We made some researches with a view to diminish this inconvenience and to establish why the cut gerbera flowers live for such a short period of time and to find the solution to enlarge their life. This paper presents some aspects of the quality conservation of gerbera's flowers during preservation. It was distinguished the mineral nutrition effect with azote and potassium on the inflorescences quality evolution of the gerbera during preservation; it was ascertain that the greatest values of vase life were registered to flowers grown from cultures with a soil content of 33 mg N/100g sol and 40 mg K/100 g. It was also established the optimum development phase for flowers harvest, for cultivar with simple, thick and semi thick inflorescences, as to maintain the quality longer. For this, five cultivars of gerbera were examined: three with simple blossom (Armand, Symphonie and Fabiola) and two with thick blossom (Yellow Moor and Richard). After our experiments, we arrived to the conclusion that the optimum moment for gerbera harvest is the F II, corresponding to simple and semi thick inflorescences cultivars, with phase which presents 2-3 rows of open tubular flowers, and to thick inflorescences cultivars, when 2/3 of the ligulae flowers are stretched.

Researches concerning the behaviour of some superfreesia varieties in a private greenhouse from Timișoara

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Keywords: total length, stem's length, flower group length, number of punks, first flower diameter

ABSTRACT

In this article there are presented the most important features of eight superfreesia varieties. The material for planting was bought from Holland and there were followed its behaviour in conditions of a private greenhouse from Timisoara. The special qualities of *Freesia* flowers make them very wanted. Nowadays there are cultivated over 80 varieties of *Freesia*, which are different concerning the type of flowers, their size and colour, intensity of their perfume, the number of flowers in the group, the vigor of the floral stem, the earliness period, the multiplication coefficient and resistance to diseases. In conditions of our country, there is very spread the culture by tuberobulbs, started in autumn-winter, with the blooming period in winter, mainly because these flowers are very appreciated in that period and also because in spring there cannot be assured the low temperatures needed for obtaining quality flowers. The varieties that were studied in this article are: Calvados, Dukaat, Orangina, Pimpernel, Pink Sun, Red River, Scarlet and White River. For the statistical interpretation of data we used variance analyze method, the control variant being the average value of the experiment. The results obtained show the best values concerning the total length of the plant, stem's length, flower group length, number of punks and the diameter of the first flower were obtained in case of Pimpernel variety, followed by White River variety.

New genera in ornamental geophytes collection of UASVM Cluj-Napoca: Belamcanda

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Keywords: behaviour, perennials assortment, rhizome

ABSTRACT

Flower bulbs, also called ornamental geophytes, exhibit great diversity in their morphology, growth and developmental biology, and physiological responses to environmental factors. They contribute significantly to the global ornamental industry, and are utilized for commercial bulb and flower production, including outdoor and forced fresh-cut flowers and potted plants, and for landscaping, including private gardening (Benschop et al., 2010). Although ornamental geophytes belong to more than 800 different genera, the most important and dominate are the next 7 genera: *Tulipa, Lilium, Narcissus, Gladiolus, Hyacinthus, Crocus*, and *Iris*. Most of the traditional flower bulbs are cultivated in temperate-climate regions of the world (Bryan 1989, 2002). The goal of the research was to improve the assortment of ornamental geophytes at the University of Agricultural Sciences and Veterinary Medicine Cluj, floral collection, with new species which has special morphological characteristics and is easy to grow. In this case we introduced and studied the behaviour of new geophytes: *Belamcanda chinensis* (L.) DC. 'Freckle Face' and *Belamcanda ch.* 'Hello Yellow'.

Studies concerning the behaviour of new *Tulipa gesneriana* cultivars used in landscape design in Transylvania

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Keywords: morphological characters, cultivars, germplasm, bulb flowers

ABSTRACT

Tulips are among the most popular spring flowers of all time. *Tulipa* genus comprises about 150 bulbous species with showy flowers, in the family *Liliaceae* (www.efloras.org). There are now over 3,000 different registered varieties of cultivated tulips. A number of species and many hybrid cultivars are grown in gardens, used as pot plants or as fresh cut flowers. Most cultivars of tulip are derived from *Tulipa gesneriana* (www.wikipedia.org). The assortment in Romania concerning tulips is limited, to only a few cultivars were introduced until now. Nowadays, has been a grown interest among horticulturists for introducing new varieties into cultivation and landscape. Researching activity for diversification of *Tulipa gesneriana* germplasm by introducing of the new foreign cultivars has being the main goal of our researches at the Floricultural Department at the University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca. In this scientific paper are presented the mains morpho-decorative characteristics of 12 new Tulips cultivars ('Alladin', 'Artist', 'Ballerina', 'Hollywood' 'Menton', 'Monsella', 'Queen of Night', 'Spring Green', 'Virosa', 'Pinocchio', 'Valentine', 'Shirley') that were introduced into our didactical collection using bulbs imported from the Netherlands. These where observed in our Transylvanian conditions and the following characteristics were recorded: flowering dates, colour of flowers, plant height, length of petals and width of petals. Dates obtained were statistical interpreted.

The influence of explants type and culture media during the initiation phase of *Acer platanoides* L.

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Keywords: *Acer platanoides* ,Globosum', *Acer platanoides* ,Crimson King', *in vitro* culture, explants

ABSTRACT

Taking into account the economic importance of *Acer* species and their frequent use in landscape architecture, both nationally and internationally, it is necessary to develop an *in vitro* biotechnology research to propagate some of the most popular and requested *Acer* varieties. The study presents data on the partial results of *in vitro* initiation for two varieties of *Acer platanoides*: 'Globosum' and 'Crimson King'. During the initiation phase, *Acer platanoides* 'Globosum' showed the best initiation percentage, using the next nutrient composition: MS macroelements, MS microelements, MS vitamins, auxins/citokinine 0,2:1 mg/l, while *Acer platanoides* 'Crimson King' variety recorded the best results on the nutrient medium with a different composition: MS macroelements, MS microelements, LF vitamins and auxins/citokinine 0,4:1,2 mg/l.

Rose propagation by cuttings

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Keywords: rooting, rose-propagation, vegetative propagation, Kings Ransom, Mr. Lincoln, Mónika, Peace, Queen Elisabeth, Don Juan, The Fairy

ABSTRACT

Roses are worldwide known for their beautiful blooms. Their propagation is an important question for the rose growers: Which method is the best? All methods have advantages and disadvantages. In our experiment we studied the rooting of seven rose cultivars: Kings Ransom (Hybrid Tea Rose), Mr. Lincoln (Hybrid Tea Rose), Monika (Hybrid Tea Rose), Peace (Hybrid Tea Rose), Queen Elisabeth (floribunda), Don Juan (climber) and The Fairy (ground cover). We chose these cultivars because they are well known and preferred by everyone. After we prepared the cuttings, we treated them with Incit 8 and Radistim hormone powder, and we used a check group. After five weeks they took roots. We measured their root length and root number. The results were variable by cultivars. We reached the best effects with Incit 8. The best rooting cultivar was the Kings Ransom. We propose that we choose another propagating method for the cultivar Peace, because it showed the worst rooting capacity.

Aspects concerning some methods for the propagation of *Hippeastrum hybridum* bulbs

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Keywords: chip, twin scales, notch.

ABSTRACT

One of the major problems of Hippeastrum is the large amount of labour involved in its production. In our country there are two common methods for the propagation of the Hippeastrum- seeds and offset bulblets (bulbils).

Study on various methods for the propagation of Hippeastrum was conducted in the greenhouse of Horticulture Faculty USMV Bucharest using Roma hybrid, with very decorative flowers but with very low propagation coefficient.

Using propagating of Roma bulbs by notching, from chips and twin scales were developed more bulblets from one bulb, depending the methods.

Contribution to knowledge the volatile oil from *Hippeastrum* flowers

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Keywords: *Hyppeastrum,* volatile oil, floral scent, perfume.

ABSTRACT

***Hippeastrum* flowers generally had no scent. Only a small number of cultivars as Dancing Queen have a weak scent. In the volatile oil of this cultivar was determined a great quantity of eucalyptol (23.67), linalool (4.92%), farnesene (4.26%), octanol (5.06%) and diphenylethylbenzoate (3.41%). The main classes of substances identified in the perfume of this cultivar were: terpenes (38.55%), esters (9.76%), alcohols (6.23%), hydrocarbures (1.42%) and aldehydes (0,55%).**

Berberis thunbergii 'Atropurpurea Nana' comportment in containerized culture

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Keywords: slow-release fertilizer Osmocote Plus, leaves compost, rates of fertilizer.

ABSTRACT

The research had the study target of cultivar's comportment in containerized culture, in dependence of three growth media: V_1 - mould, leaves compost, peat, sand, 2:2:2:1; V_2 - peat, leaves compost, sod soil, sand, 1:1:1:0,5; V_3 - peat, leaves compost, sand, 1:0.8: 0.2 and, the influence of the Osmocote Plus slow-release fertilizer in 4 kg/m^3 and 5 kg/m^3 rates of administration. The best results of annual growth have been obtained at the V_1 with 4 kg/m^3 rate of fertilizer.

LANDSCAPE ARCHITECTURE

An investigation into the effects of climate change on historic gardens in the UK

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Keywords: heritage gardens, climate change

ABSTRACT

This study was conducted to establish the financial implications of the impacts of climate change on English heritage gardens and to assess how prepared the gardens are for the predicted changes. It was also the intention to establish what the industry experts thought were the main climate change threats to their gardens. The research was carried out with the use of a questionnaire, distributed throughout the United Kingdom, to heritage gardens of various sizes and from different eras. On their return the questionnaires were analysed into geographical areas to establish location patterns. It was also intended to assess how many of the gardens would be in danger of losing their historic character through the effects of the changes predicted. The results indicate that the heritage gardens in the UK believe that it is too early to speculate on the changes that may or may not happen, and that there is insufficient information available to plan for the future. Southern England appears to be more pro-active than other locations within the study, but they are predicted to suffer the largest impacts.

Contributions to the development of a database data recorder used in the management plan required for landscape arrangements

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Keywords: mapping, dendrometric measurements, diagnosis, sustainable management.

ABSTRACT

This study aims to identify all dendrometric, cartographic and phytopathological elements required in data registration forms (Form of Registration and Census Data Sheet). All the information is centralized in special tables and it is necessary to identify the vegetation health and all of the elements that succour to the proper development of the dendrologic material, as a main element in the landscaping compositions. Also, in these centralizations are registered features of the arranged space (fencing, proximities etc), forming a complete "portrait" of the actual state of the arrangement, allowing the echeloning and urgency of the interventions for optimum development and maintenance of the arranged space. The ultimate goal of these efforts is to facilitate the establishment of a General Management Plan of the Landscaping Arrangement to provide the space perenniality, based on the timely and efficient intervention of the works, allowing the arrangement to function properly. Following the successive overlapping of the intervention plans regarding the surfaces that were mapped distinctly from the landscaping arrangements, follows a General Plan of the Arrangements Management with different areas of maintenance based on the frequency of interventions practiced in those areas.

An historical survey and environmental rehabilitation of Dumbrăvioara Castle Garden (Romania)

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Keywords: Transylvanian castle parks, Teleki, monument protection, landscape design.

ABSTRACT

Our aim of research is the evaluation of Dumbrăvioara Castle Park, assessing both its actual stage as well as drafting its revitalization plan. The dynamical changes of the park have been studied with the help of military maps, which turned out to be more precise than any other map. Topographical measurements were carried out during the survey, accompanied by a conclusion regarding the present state of the park. 439 reference points were used on the investigated site. The geodesic assessments, together with the present state of the park, contain the most important restoration and revitalization dates. The article ends with a conclusion and references about the investigation.

The effect of designed green spaces on the Transylvanian landscape

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Keywords: historic gardens, royal gardens, cemetery gardens, Bonţida castle garden.

ABSTRACT

The purpose of this article is to present the effect of various gardens (peasant, castle, monastery and cemetery) on the evolution and forming structure of the Transylvanian landscape, along with the historical changes. The influence of the listed green spaces was decisive on landscape structure and design. The garden research in Transylvania does not have comparable traditions to other similar sciences. This is especially valid for Transylvanian garden art, which is highly neglected compared to other countries. Park investigation is also inexistent and neither can we talk about restoration either in botanical or dendrological sense.

Trends in 20th Century Landscape Architecture – from Art Deco to Cubism

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Keywords: landscape architecture, art deco, cubism, garden

ABSTRACT

Art Deco style was born in France around 1920 and its implications in landscape architecture were important. The Véra brothers were the exponents of this style in garden making and theory. The tendency they developed was aiming at renewing the art of gardens in a geometric manner which is radical and equivocal. Their compositions were reigned by geometry, also planting. They used colour and perspective effects and the design reveals clarity and simplicity. Their most famous and important work was the garden for the Noailles family in Paris. Art Deco style was named after the International Exposition of Modern Industrial and Decorative Arts in Paris, 1925, when also the Cubism style in terms of landscape architecture arise with the Garden of water and light designed by Gabriel Guevrekian. His style was also dominated by geometry, he used colour in the same manner, but what he brought was the movement in his composition. The art deco gardens where more static, and lacked this fourth dimension of Cubism theories, time and movement. Then Guevrekian designed the garden for the Villa Noailles in Hyères, this major work in the history of landscape architecture which influenced landscapers all over the world.

Trends in 20th Century Landscape Architecture – Impressionism

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Keywords: landscape architecture, impressionism, garden

ABSTRACT

Impressionism is an art style born in France at the end of the 19th century and an important exponent, the painter Claude Monet created his own garden at Giverny, near Paris in order to paint it. He worked at his garden since 1883 until he past away in 1926 and this garden became a laboratory for plant combinations and gardening also, not only for painting. He used the art of colours in his garden as in his paintings. He chose simple and autochthonous plants, native and simple flowers. He started from a traditional garden and he preserved its principles, thus creating the first vernacular garden in the world. It became very popular, a model for gardens first in France then worldwide and also in public parks and gardens. It influenced a lot the British landscaper Gertrude Jekyll, the main exponent of the Arts and Crafts style in gardens who was very prolific at the beginning of the 20th century.

Windows in time on Loire Valley

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Keywords: cultural landscape, pastiche, historical approach.

ABSTRACT

Loire Valley is one of the well-known areas for the French cultural landscape and for the French historical gardens in particular. The Loire Valley, between Sully-sur-Loire and Chalonnes, is a *UNESCO World Heritage* since 2000, and Sully-sur-Loire is part of *Zone Zico* and of *Natura 2000* protected natural sites. In April 2010 we had the opportunity to participate to an international competition with an exciting theme: ***Jardins à l a française*** **at Huardière Domain, Sully-sur-Loire**, **France. This contest aimed to stimulate the students' creativity and to involve them in a large scale international project, in order to form a multi-cultural team. The students' aim was to reconcile their own vision on one part with the owner desire and the restrictions imposed by the site as a part of *UNESCO World Heritage*, of *Nature 2000* protected sites and of *Zone Zico* on the other. To answer to all these goals was a great challenge that will be presented in detail.**

Ceramics in landscape arrangements

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Keywords: ceramics, garden, urban public green space

ABSTRACT

The current work studies the diverse forms of ceramic usage in urban landscaping, public and private green spaces. The study also (debates and) analyses the multitude of functional, esthetical and ambient aspects generated by using ceramics in the compositional-functional structure of urban landscape arrangements. Because of its multiple qualities, ceramics are used in the construction of architectural-functional endowments, as well as in the realization of objects with a decorative character.

FRUIT GROWING&TECHNOLOGY

The behaviour of some black currant cultivars in Bucharest area

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Keywords: cultivars phenology, growth, fruiting, adaptability

ABSTRACT

In the last decades, the bush berry culture is more and more sustained and promoted due to their great content in minerals, vitamins and medicine substances. The market requires fresh and conditioned berry fruits as much as the consumers do. Nevertheless, we assist at a less culture land surfaces occupied with such berries, most of them in private gardens. The goal of the experiment is to evaluate some black currant cultivars adapting capacity to the south-east region of the country from the ehaviour al and agroproductivity point of view. Three black currant cultivars were studied: Abanos, Deea, Ronix and a selected Elite 124. In the Bucharest condition, the black currant fruits ripen in the first half of June. The earliest cultivars were Abanos and Ronix. The most vigorous cultivar was Abanos that realize the highest growth increase. Elite 124 performed the biggest fruits. The biggest productivity is obtained yet by the Deea cultivar next by Abanos (more than 1kg fruits/plant). Deea accumulated the higher content of vitamin C.

The behaviour of some high bush blueberry cultivars in Bucharest area

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Keywords: cultivars phenology, growth, production, potential

ABSTRACT

Because of the specific needs of high bush blueberry concerning the cultural conditions, it is very hard to extend the culture in other areas. In this study we aim to determine the cultivars adapting capacity to the south-east region of the country from the phenological and agroproductivity point of view. Six blueberry cultivars were studied: Augusta, Delicia and Simultan (Romanian cultivars); Bluecrop, Weymouth and Pemberton (American cultivars). In the Bucharest condition, the earliest ripening of the fruits was recorded by Weymouth and the latest by Augusta cultivar. The most vigorous cultivar was Pemberton that also realize the highest growth increase. Delicia and Bluecrop bear the largest fruits. The biggest yield is obtained by the native blueberry cultivars: Delicia, Augusta and Simultan who exceed 600g/plant in the second year. Simultan accumulated the higher content of vitamin C.

Walnut selections susceptibility to *Xanthomonas arboricola* pv. *juglandis* . Preliminary results

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Keywords: walnut blight, artificial infection, immature nut test, disease rate, walnut selections

ABSTRACT

***Xanthomonas arboric ola* pv. *juglandis* is the causal agent of walnut blight, one of the most important and widespread diseases of Persian (English) walnut (*Juglans regia* L.), causing severe damage to leaves, twigs, buds, petioles, rachides, male and female catkins, nutlets and kernels. It has been known since the end of 1800s, as this disease is present all over the world. It has been constantly causing damages in Romania for 70 years. Its appearance was first recorded in 1941 by Traian Săvulescu et al. in Sebeş. Currently, it is a permanent disease agent, and the damage depends substantially on the weather.**

The preventive defence against walnut blight includes the preparation and introduction of resistant varieties to the cultivation process. In order to select the breeding genotypes, we evaluated the susceptibility of a selected walnut population from Eastern Transylvania's in 2010. For the control we used the very susceptible 'Milotai intenzív' and the moderately susceptible 'Bonifác' cultivars.

Susceptibility was carried out based on the methods of Ozaktana et al. (2008) and Tsiantos et al. (2008) using 30 immature nuts from every selection and cultivar, collected in the first decade of July 2010. For the artificial infection a mixture of 2 *Xaj* strains was used, isolated from naturally infected walnut nuts from two different locations Budakeszi (Hungary) and Catalina (Romania). The sensitivity of the examined selection was realised on immature nuts using the frequency of infections and disease rate.

Fruiting depending of the apple tree in the orchard on soil maintenance

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Keywords: apple; productivity; systems of maintenance; soil cultivation; mulching.

ABSTRACT

The article describes the apple trees productivity of some varieties - Mantuaner, Red Delicious, Jonathan, Star crimson, Gold spur, Idared, Spartan and Golden Delicious depending on systems of maintenance, soil cultivation and mulching.

Mathematical models, tables and nomograms concerning the pH variation with the concentration of the fertilizers solutions as foliar feeding: 2. sulfates of micronutrients. 2.3. $(NH_4)_2SO_4 \cdot FeSO_4 \cdot 6H_2O$

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Keywords: iron ammonium sulfate, pH of aqueous solutions, foliar fertilizers

ABSTRACT

The paper presents mathematical models, data table and nomogram that can be used in order to estimate the pH of the aqueous solution as related on the required concentration in $(NH_4)_2SO_4 \cdot FeSO_4 \cdot 6H_2O$. The laboratory researches have been carried out both for fresh solutions in current/common water (CW), with pH 7.18, and in distilled water (DW), for comparisons. The pH decreases with the increase of the concentration from 0 to 3 % $(NH_4)_2SO_4 \cdot FeSO_4 \cdot 6H_2O$ in both types of solutions (DW and CW), the solutions becoming more and more acid. The pH decreases from 7.18 to 3.74 (extremely acid) in CW and reaches 3.51 (extremely acid) in DW. The pH in DW solutions is smaller than in CW, but the differences diminish with the increase of the concentration. The mathematical models have been statistically validated and they give excellent fit to the analytic data.

Mathematical models, tables and nomograms to settle the technically optimal rates (TOR) of N, P_2O_5 and K_2O in fruiting sweet cherry tree, *Cerasus avium*

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Keywords: nitrogen, phosphorous, potassium, macronutrients, fertilizers, maximum yield

ABSTRACT

The paper presents mathematical models and agrochemical tables and nomograms which serve in order to settle the Technically Optimal Rates (TOR) of N, P_2O_5 and K_2O in fruiting sweet cherry tree, on plan and terraced terrains, depending on the maximum expected yield, Y_m, and soil agrochemical indexes on 0-40 cm soil depth: IN (nitrogen index), P_{ALc} (mobile P), K_{AL} (mobile K). TOR allows obtaining the maximum yield in given conditions concerning the soil supply with the regarded nutrient and allowing a sustainable horticulture. The TOR system uses the same equations for nutrients action coefficients and soil nutrient supply as the Economically Optimal Rate (EOR) system. TOR has some advantages versus EOR. FERTEXPERT software, version 3, has been used in order to compute TOR. The practical agrochemical tables and nomograms allow the farmer to operatively settle TOR. The mathematical models have to be used when exact TOR values are needed. The agrochemical tables and nomograms will be accessed online, on a specific website.

Mathematical models, tables and nomograms to settle the technically optimal rates (TOR) of N, P_2O_5 and K_2O in fruiting sour cherry tree, *Cerasus vulgaris*

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Keywords: nitrogen, phosphorous, potassium, macronutrients, fertilizers, maximum yield

ABSTRACT

This paper presents the mathematical models, 3 agrochemical tables and 3 nomograms which can be used with the aim to calculate or evaluate the Technically Optimal Rates (TOR) of N, P_2O_5 and K_2O in fruiting sour cherry tree cultivated on plan field and terraced terrains. TOR is calculated/evaluated as function of the maximum expected yield, Y_m, and the relevant soil chemical properties (in 0-40 cm soil depth): nitrogen index: IN, mobile P: P_{ALc}, mobile K: K_{AL}. FERTEXPERT software (version 3) has been used for TOR calculations; the calculated results served to build the agrochemical tables and nomograms, useful tools for horticulturists in practice, for fertilization with N, P and K.

Electronic nose discriminate seven types apples, after maturity grade

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Key words*:* Multivariate statistics (PCA, DFA, SQC), maturity indices, climacteric stage

ABSTRACT

An electronic nose (E-nose) was used to classify apple samples based on their smell, depending on maturity grade. Seven varieties of apples from Romania, Golden, Starkrimson, Jonathan, Gala were from Reghin region and Pinova, Fuji, Golden, too, from Însurăței area, were used. All the samples were analyzed using the E-nose FOX 4000 with 18 metal oxide coated or uncoated sensors. The resulting E-nose intensities were analyzed by Principal Component Analysis (PCA), Discriminant Factor Analysis (DFA) and Statistical Quality Control (SQC), which resulted in grouping the used varieties of apples or in grouping the types of samples (peel, homogenate or diluted homogenate from the same apple). The obtained results indicated that E-nose could discriminate successfully among varieties of apples (% of variance >> 90; percentage of recognition ≈ 100 %) and can be helpful in optimum harvest period determination.

Determination of patulin content of apples juice, through high performance liquid chromatography

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Keywords: mycotoxin, validation, method, limit of detection

ABSTRACT

In the paper are presented results of performed researches for patulin determination from apples juice, through high performance liquid chromatography. Patulin extraction was achieved in acetonitrile, and cleanup of the obtained extract using C.U. Patulin columns (MycoSep®228). The obtained solution is evaporated to dryness under nitrogen and redissolved. Patulin was separated on chromatographic column C18, 150 x 4 mm, 5 µm (*high performance liquid chromatograph Thermo Finnigan*), eluted in mobile phase (acetonitrile/water) 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 6.25 µg/l – 400 µg/l, the average recovery is 90.50%. Limit of detection (LOD) is 2.91 µg/l, and limit of quantification (LOQ) is 9.71 µg/l. It was evaluated contamination degree of apple juice from commerce, using high performance liquid chromatography. Patulin concentrations of apple juice samples, analyzed are under 50 µg/l, the maximum allowed limit by the legislation in force *(Order 530/2007)*.

Studies regarding the implementation of food safety management system on minimal processing horticultural products

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Keywords: CCPs, HACCP, ready to eat

ABSTRACT

HACCP is the abbreviation for the English expression "Hazard Analysis Critical Control Points". To obtain high – quality products, capable of meeting the consumer's demands and complying with the Food safety standards, it is recommended that certain risk-prevention and control methods should be applied. In the minimal processing of horticultural products industry, the application of a HACCP system allows the identification of the key-elements of the technological process. The system analyses the hazard related to the product and the process, indicating the critical control points to the hygienic quality of the product. During the technological process, there is a large number of factors affecting the safety of the horticultural products. Starting from the fact that these products are ready to eat, there are major concerns regarding the level of pesticides and other chemical contaminants, as well as the maintenance of hygiene during harvesting, handling, processing, storage, and commercialisation. In order to prevent or reduce the above-mentioned hazards, the big specialised companies and small producers must apply HACCP prevention methods, not methods based on the final product control (which may affect consumer's health and may lead to important economic loss).

Some particularities of Global GAP certification process

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Keywords: quality, standards, certification, good practices

ABSTRACT

In order to obtain high quality agricultural products corresponding to the retailer's requirements it's necessary to implement a set of rules, knowing worldwide, as GLOBAL GAP, starting September 2007. GLOBAL G.A.P. is a private sector body that sets out voluntary standards for the certification of production processes of agricultural (including Aquaculture) products around the globe. The objective of GLOBAL G.A.P. certification is to form part of the verification of Good Practices along the whole production chain. GLOBALG.A.P. is an open system, where any producer can apply and receive certification when complying with the objective criteria set out. This normative document GLOBAL GAP General Regulations Integrated Farm Assurance V3.1-Nov09 Parts I to V is obligatory starting on 1st March 2010.

Research regarding the dynamics of some physiological processes during nectarine and peach fruits storage

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ABSTRACT

Peaches and nectarines fruits ripening process is mainly biochemical and hormonal coordinated. Thus, before maturation giberelines prevailing as against the abscisic acid, ethylene synthesis and respiration rate are maintaining at a reduced intensity, and fruit maturation is hindered. During the maturation process, ethylene synthesis is enhanced and maturation is stimulated. As the climacteric fruits began to mature, there is registered a rapid increase in ethylene biosynthesis, and it decreases as climacteric is established, being greatly influenced by storage conditions. Peaches and nectarines fruits ethylene emission, in the immediate phase and final harvest storage in different environmental conditions, revealed the dynamics of this parameter, confirming the direct influence of air temperature and relative humidity of storage space. Thus, for the fruits stored in ambient conditions, the emission of ethylene has increased as against to the harvesting stage, while in the case of the fruits preserved by freezing, as semi-permeable film, it has declined compared with post-harvest phase

Some specific features of investment promotion in high density culture system in apple

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Keywords: high density system from apple, specific investment, varieties with genetic resistance to disease.

ABSTRACT

The researches performed at the Tree Growing Research & Development Station Voineşti, by the creation in the year 2007 of an apple tree plantation in the high density system, with an disease resistant assortment, open new perspectives for the extension of modern orchards in the private farms of our country's dedicated tree growing zones, which will reach the remarkable performances of the countries with a developed tree growing. The investment at the setting up of an apple tree hectares in the high density system, which raises to 135.000 lei (without the anti-hail system), can be recovered in a relative short time, respectively until the year 6 after plantation, having in view that the maintaining expenses are partially covered from the year 3 – and totally from the year 4 after plantation, due to the remarkable productions registered at the cultivated assortment. The results obtained at the Tree Growing Research & Development Station Voineşti, recommend the extension in culture of the high density apple tree system, due to the high economical efficiency and also for the fact, that it permits the rapid adaptation of the assortments and of the technologies, in accordance with the requirements of the consumption and with the steady increasing general technical level.

The reduction of the environment pollution level and the economical effects by promoting in culture the disease resistant apple tree breeds

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Keywords: genetic disease resistant breed, environment pollution reduction, increased economical efficiency.

ABSTRACT

The researches, performed at the Tree Growing Research & Development Station Voineşti in the period 2006-2008, point out the economical and environment protection effects of some genetic disease resistant apple tree breeds, respectively: Florina, Redix, Iris, Irisem, Real, Remar, grafted on the graft bearer MM 106, cultivated in the intensive system (1250 trees/Ha). These are represented by the production potential of the breeds (25-40 t/Ha), the cost level of performing the phyto-sanitary treatments, which is reduced by over 55%, as compared with the sensible assortment (Ionathan, Golden Delicious, Starkrimson) and by the environment protection, following the reduced level of pesticide residues. Also, the maintenance of the fallow soil on the interval and the grasses covering on the trees row are ecological methods of weeds combat, which maintain a high humidity in the roots zone and a temperature with minimum oscillations, determining the increase of the soil content in organic material, due to the decomposition in time of the vegetal material resulted from the grasses' mowing from the interval between the trees rows.

Evaluation of the biological potential of some pear early hybrids in area Bucharest area

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Keywords: tree vigour, productivity, fruit quality

ABSTRACT

The breading of the pear cultivars is a basic activity in fruit-growing research taking into account the **great importance of this specie in nourishment, but which has only 4,3% from the total fruit production in our country. Taking into account the necessity of the perpetual renewal and improvement of the pear cultivars, both for consumers and farmers, we proposed to study three early pear hybrids (H1-13/28, H2-18/28, H3-19/28) from the point of view of the trees vigour, their phenology, production capacity and fruit quality. The researches took place between 2004-2006, in a pear orchard set up in 1997, with trees of one year old, planted at 4/2m distance (1250 trees/ha). The pear trees were grafted on the quince tree rootstock, with a small vigour of growing. Observations were made regarding the permanent structure of the early pear hybrids, the ramified and formation crop capacity, the phonology of floral organs, binding capacity of fruit, productive efficiency, the relationship between the leaf' surface and growing level of the sprouts, fruit quality. The obtained results show the high productive potential of early pear hybrids studied, grown in Bucharest area, an zone which assures the development of physiological and biochemical process at a sustained level, giving a strong long life and a corresponding vegetation state to this species. From the three hybrids, a remarkable evolution has the hybrid H2-18/28, with a superior potential above the other two.**

Studies on the existence of mineral elements in buds of valuable biotypes of *Pruns cerasifera* Ehrh.

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Keywords: mirobalan, macro elements, spectrometer, micro elements.

ABSTRACT

***Prunus cerasifera* is a more rustic plant which grows almost everywhere, yields more regularly than plum, gives high yields, of course mostly lower quality, but still usable for consumption and fresh food. Also, *P. cerasifera* has other qualities, because that is one of the most widespread rootstock of the world nurseries (70% of rootstocks for stone fruits). Biological material is formed of nine biotypes of *P. cerasifera* from South Romania, collected and placed in the National Collection of the genus Prunus, of the University of Craiova – SCDP Vâlcea, and Working method were used as equipment: mass spectrometer with inductively coupled plasma, ICP-MS, Perkin-Elmer Elan 9000. In nature there are elements favourable or unfavourable plant, everything depends on the amount available to plants, same element can exert favourable or unfavourable effects if there are insufficient or too much.**

Physiological changes in some apple cultivars under Oltenia's conditions

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Keywords: environmental, factors, photosynthesis, stomatal conductance, processes.

ABSTRACT

In order to obtain good quality crops it is necessary to know the interaction between plants and environmental factors (light, temperature, the CO_2 concentration in the air, soil humidity, soil fertility, etc.). This paper's aim is to study the physiological processes (photosynthesis rate, transpiration rate, stomatal conductance of CO_2) of apple cultivars to environmental factors (temperature, light). Determination of the intensity of the physiological processes in accordance with climate factors has been carried out by using L Cpro+ portable photosynthesis system.

Preliminary researches on the behaviour of different varieties of raspberry remount in the Bucharest area

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Keywords: Raspberry, relocated, production, quality, mulch

ABSTRACT

The surrounding area of Bucharest is assuring optimal conditions for growing and fructification of the raspberry. The comparative study done with four genotypes for the mulched soil on turns with two organically materials, highlighted the influence of some biological peculiarities regarding the growth and the capacity of production and on the other hand the influence of the mulching material. Generally speaking the same variety had a better behaviour when mulched with pine bark in respect of the mulching with sawdust. In the second year of life the plants had a good fructification capacity. The number of the fructifying runners was between 16 and 25 runners per plant at the summer harvest and between 18 and 21 runners at the autumn harvest. The number of inflorescence fruits has been around 12 and 14 at the first harvest depending on the mulching material and 13 to 20, at the autumn harvest. The productivity at the plant level was of 530- 600 g/plant at the first harvest and 630-1140 g/plant at the second harvest. The quality of the fruits was influenced more by the variety and les of the mulching material.

The influence of altitude and irrigation on the fruit production and quality for apple species, in Sergaia Valley, Syria

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Keywords: apple, irrigation, production, quality, biometric index

ABSTRACT

The apple culture in less favourable conditions imposes the adjustment of the culture technology in order to obtain good results. The comparative analysis of two batches situated at different altitudes and with different water supply conditions showed the different reaction of the apple trees from the growth and fructification point of view. The area with an additional share of water stimulated the growth and fructification of the apple trees, with an increase in production of 20%. The higher area, even if it did not determine a high growth, it ensured conditions for satisfactory growth and fructification, the production and especially the fruit quality being satisfactory for an area atypical for apple culture. The percentage of extra fruits and first ciliated class was with 2-3% higher for the higher area, which sustains the capitalization of these terrains through the planting of apple trees.

Preliminary results regarding the storage capacity of some new apple scab resistant varieties

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Keywords: *Malus domestica*, fruit characteristics, sensorial analysis

ABSTRACT

Five scab resistant varieties: Ariwa, Gold Rush, Golden Orange, Rubinola and Topaz cultivated in a superintensive orchard in the Romanian plain, were planted at 3.5 x 1.0 m and led as vertical axe. At the end of the first year in October and then monthly during the storage, fruits main physical and biochemical characteristics were analyzed: fruit weight (g), fruit calibre (mm), flesh firmness (kgf/cm^2), soluble solids etc. Fruit starch content was determined, based on the conversion level in soluble solids by coloration of the fruit transversal section. In February, fruit sensorial analysis have been realised by appreciating the external and internal fruit characteristics by a group of students and teachers using a descriptors list for the "Level 1" of the "Eurofru" fruit test. The average fruit weight varied from 173.3 g at Gold Rush, 181.5 g at Rubinola and 183.3 g Topaz. Fruit firmness at picking moment, varied between 9.5 kgf/cm² for Ariwa and 6.9 kgf/cm² for Rubinola, giving an important indication on the fruit earliness and ability to storage. During the storage period the content in soluble solids increased in all the analyzed varieties, reaching a maximum at Gold Rush (16%) and Rubinola (16.8%) after four months of storage. Analyzing the fruit coloured section with iodine in potassium iodide, was possible to see that, at the picking moment some of the studied varieties, were already ripped (Ariwa and Golden Orange). Gold Rush had the best appreciations from the taste quality point of view, 54.54% of the tasters considering it of good quality and 22.72% of them, of excellent quality. From the five studied varieties, Gold Rush had the best storage life and has been appreciated on the first place by the taste panel.

Studies upon the influence of manual thinning of Jonathan apples in conditions of Timișoara

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Keywords: weight, production

ABSTRACT

Manual thinning of fruits is a very important process in fruit culture because it is a method of obtaining the optimum quantity of fruits, which have high physical and chemical qualities. At the same time it is a way of reducing the alternation phenomenon, very frequent in apple tree culture. Manual thinning can be done din different stages of fruiting development. It can be applied early in the season to mixed buds, flowers or fruits that have a diameter of 1 cm. This early thinning has a good impact upon the quality of fruits, but it also stimulates the buds differentiation, having and indirect influence upon alternation Jonathan is an apple tree variety also known as "the king of apples", being very appreciated for its qualities. The thinning was done in June, after the physiological fall of apples, leaving only one apple in the group. While doing the manual thinning there is taken away the small, damaged, attacked and inadequate apples and there are left the healthy and large ones in the group. Normally one leaves only one apple in the group at a distance of 10-20 cm between them. The research done in the didactic plot of Fruit Culture Department of our University showed that the manual of Jonathan apples had a big impact upon fruits' weight, but not that much upon the production.

Hazards analysis at production of fruit-based concentrated products, fortified with iron

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Keywords: hazards, apricot, plum, critical control point

ABSTRACT

In this paper are presented study results concerning hazards analysis at production of fruit-based concentrated products, fortified with iron. On the process flow chart there were identified and evaluated microbiological, chemical and physical hazards, depending on their gravity and probability to occur. There were established suitable control measures for prevention, elimination and/or reduction of an important hazard, at an acceptable level of its likelihood occurrence, for apricots and plums processing as concentrated products, fortified with iron. Critical Control Points (CCPs) on the process flow chart of fruits (apricots, plums), were determined by successively following of questions from „Decisional Tree", and established by Codex Alimentarius. Thus, it was established as critical control point pasteurization operation of fruit-based concentrated products, fortified with iron. In order to establish an efficient system for documentation and records keeping storage, it was achieved HACCP plan.

Personal contribution determining the main characteristics of wild cherry selections from experimental field of Sapientia University Târgu-Mureș

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Keywords: wild cherry, rootstock, genotypes

ABSTRACT

Wild cherry (*Prunus avium L. var. Silvestris*) is used as rootstock for sweet cherry growing in all countries. Varieties grafted on wild cherry have a long life of over 50 years, are vigorous and resistant to frost, with a deep-rooting, but are sensitive to drought and excess moisture temporarily. Wild cherry genotypes selection took place in an old cherry tree plantation 30 years of school and field grafting seedlings of Sapientia University Târgu-Mureș, where these specimens came from the nursery as grafted material, but actually seedlings were directed and capitalize on nursery stock. Sampling the selections marked fruit was held in late June 2007. Extracted seeds were kept until the final stratification in moist perlite at a temperature of approx. 10 ° C. Stratification took place in December in wet sand. Seeding was done on March 24, 2008, in separate rows for each genotype on a plot prepared in autumn sowing density was 70 pips per ml. Seedlings emergence took place in three weeks after sowing. Harvesting juveniles held in early November of 2008. During the experiment is made, there were conducted tests and observations regarding: the determination of kernel yield, 1000 kernel weight variability from all 18 selections, the percentage of emergence of seeds, growth vigour of seedlings. From the 18 selected genotypes of wild cherry, 5 types of seeds yield is between values from 15.17 to 19.31%, well above the average yield of seeds, wild cherry characteristic presented in the literature. In the case of the nine selections wild cherry, eastern shelling percentage exceeds 60% which is a particularly valuable attribute to the nursery. Seedlings from the most selections (except the three selections) falls into the category of middle force, with a thickness between 4.1 to 6 mm package. The thickness of the package selections fall in percentage over 50% in one category of value, which shows a great homogeneity of the material. Gathering the above problems, we conclude that wild cherry selections in the study have provided valuable generative lines, with important traits in terms of nursery, such as reduced growth and vigour in high school uniform seedlings.

Determination of the development of root system of wild cherry selections

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Keywords: wild cherry, genotypes,

ABSTRACT

Intensive growth culture of cherry and economic efficiency of cherry orchards is a priority of fruit growers and breeders worldwide and in Romania. Besides the classical gardens - tall tree, 600-700 trees per hectare - where it was harvested mechanically or by hand very hard, appearing and intensive orchards - 1000-1500 trees/ha - intensive tree crown, where harvesting is done by hand ground. Intensive orchards need to establish other rootstocks. Intensive culture increases the importance of rootstock, especially for the effect of reducing the waist, which correlated with an appropriate choice of ring shape, has a major influence on intensive growth culture of cherry. Selection of wild cherry genotypes occurred in a plantation of cherry Saplings School and field grafting of Sapientia University Târgu-Mureş, where 200 copies have reached the right nursery grafted material. Of this material were 18 genotypes selected by their characteristics have proved to be valuable as seed parent plants. Seedlings were analyzed characteristics of the selections from the best behaviour in school saplings were planted in field grafting. During the experiment there were performed the following measurements and observations on root system characteristics: number of roots, length of main and secondary roots. These determinations were made by harvesting seedlings, after which they started to sort - and tying their genotypes after stratification seedlings. Statistical data processing was done by Past program, significant role than previously established differences in the degree of freedom p <0.01 giving a 99% difference between genotypes. When examining the root characteristics were taken into account the number of roots, main root length and the secondary. In the number of roots, experience results demonstrate that in all selections, a few seedlings have roots whose thickness is 1.5 mm. For most juveniles is the number of roots of 2-4 pieces. On this character, seedlings derived from three selections (KM 1, KM 21 and KM 7) have values that differ from other families of juveniles significant. For most selections, the main root seedlings have an average length between 8-12 cm values. Seedlings of several selections were average length of secondary roots between 6-8 cm values. We found that the main root length is inversely proportional to the length of secondary roots. Gathering the above, we conclude that wild cherry selections in the study have provided valuable generative lines, with important traits in terms nursery, such as reduced growth and vigour high school uniform seedlings.

The effect of rootstocks on apple tree growth in the fruit nursery

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Keywords: Variety, Feathered trees, Two-year trees, Bench-graft.

ABSTRACT

There were conducted investigations during the period of 2008-2009years in Nursery Fruit Company. As objects of the investigation served three apple varieties and were bench-grafted on five rootstocks. As a result of the researches made it was established that in the first and second fields of the fruit nursery the main indicators of apple tree growth manifest significant increases depending on the increase of rootstocks' vigour of growth used in the process of grafting and the evidence obtained corresponds to the current standards.

Roots development capacity of gooseberry plants

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Keyword: gooseberry, variety, roots, weight, length.

ABSTRACT

Investigations on capacity development and location of barberry root system growing in new conditions were performed in the experimental field plantation located in the Institute of Pomology in 2000. Objectives of the study was to evaluate the development length and location of root mass in soil in plantations in four gooseberry varieties: Donetski krupnoplodnîi, Donetski perveneţ, Şcedrîi, Kolobok on the plantation distances - 2,5 x 0,75m 2,5 x 1,00m, 2,5 x 1,25m. Length and root mass in all species studied (Donetski krupnoplodnîi, Donetski perveneţ, Şcedrîi, Kolobok) were established maximum corresponding between 16320,6 – 12807,5 cm and 2410,4 -1881,8 g on planting distance 2, 5 x 1,25 m.

VITICULTURE&OENOLOGY

The flavouring of Fetească neagră wines with oak chips and tannin and its influence on the colour and sensory parameters of young wines

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Keywords: CIELab parameters, chips, lyophylized tannins, sensory analysis.

ABSTRACT

The wines obtained from the Romanian variety Fetească neagră are usually less structured and less coloured, due to insufficient accumulation of natural tannins. Treatments with alternative oak products were used to enhance the colour and sensory parameters of wines from this variety. Enological tannin and an oak chip product were chosen from the products available on the market to be tested. The wines treated were assessed while still young; therefore the results are only showing some trends for the future development of those wines. However, even at 6 months from their production and treatment, the wines showed some difference in the colour and improvement in the sensory profile, compared to controls. The oak chips treatment improves the aromatic profile, which becomes more complex, but has less influence on the wine colour. On the other hand, the treatment with enological tannin seems to make a difference in some colour parameters, while the aroma of the resulted wines is not improved, lacking the expected complexity. For the Fetească neagră variety the application of both products proved beneficial in comparison with the variants of non-treated wines, the chips treatment being preferred by the wine tasters for its effect in aroma enhancement.

The evaluation of the influence of the vine treatments with Nova and Atonik bioregulators on the wine quality of Fetească regală and Fetească neagră varieties

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Keywords: Romanian autochtonous varieties, bioregulators, sensory profile, electronic nose wine differentiation.

ABSTRACT

The wines resulted from Feteasca regala and Feteasca neagra varieties treated with foliar fertilizer NOVA or with biostimulator ATONIK were studied in the terroir of Pietroasa, Buzau county. Physico-chemical and sensory parameters for wines obtained in triplicates from each treated vine plot were determined and discussed comparatively. Significant differences in physico-chemical and sensory analyses parameters were observed in accordance to the type of treatment. The wines obtained from the lots treated with Atonik scored the best results in sensory analyses performed by a trained panel of wine tasters, followed by the wines from lots treated with Nova, in each variety group. The differentiation of wines using a GC-electronic nose and DFA (Discriminant Factor Analysis), as well as their sensory profiles, are also discussed.

Effects of vine treatments with Nova and Atonik bioregulators on the grape quality of Fetească regală and Fetească neagră

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Keywords: Romanian autochtonous varieties, bioregulators, grape full maturity, grape sensory analysis.

ABSTRACT

The Romanian autochtonous varieties, Fetească regală and Fetească neagră, treated with foliar fertilizer NOVA and biostimulator ATONIK were studied in the terroir of Pietroasa, Buzau county, by comparison with control lots. Parameters such as bud loading, grape weight, yield per vine, sugar and acidity accumulation, as well as sensory parameters of grapes at full maturity were recorded and discussed. The determinations in the vineyard were performed in triplicates for each type of treatment and bud load and the data were analysed statistically. The results show a clear effect of both biostimulators on the Feteasca neagră variety, NOVA having a more important influence on both quantitative and qualitative grape parameters, including the sensory ones. For the Fetească regală variety, the influence of biostimulators was more difficult to assess, since the bud load variation in plantations had a more important effect on all quantitative and qualitative parameters than the stimulation treatments. Further investigations need to be carried out in order to establish for each variety the best combination bud load-type of biostimulator.

The influence of the yeast strain selection on the colour parameters of the Pinot noir and Cabernet Sauvignon wines

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Keywords: CIELab parameters, yeast selection.

ABSTRACT

The trichromatic and CIELab parameters were determined for wines of Pinot noir and Cabernet Sauvignon obtained with various yeast strains isolated in Valea Călugărească viticultural centre in order to select the yeast strains that ensure good colour intensity, hue and chromaticity for the wines. Some selected strains stood out from the viewpoint of colour parameters leading to wines with a higher proportion of red and less blue in their colour, with higher values of chromaticity. The yeast strains that produced wines with significantly different colour parameters were PN III – 10 (sample wine PN-4) for Pinot noir and CSEC III-1 (wine CS-1), CSEC IV – 7 (wine CS-3), CSEC IV – 10 (wine CS-5) and CSEC IV – 11 (wine CS-7) for Cabernet Sauvignon. These differences in colour as compared to the control wines produced with a commercial yeast strain are not always for the better and they do not automatically recommend a strain for winemaking. Also, before recommending some of these selected yeasts other physico-chemical and sensory parameters of the resulted wines should also be assessed.

Evaluation of the growth rate of some yeast strains selected in Dealu Mare region for wine production

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Keywords: growth rate, winemaking, microbial calorimetry, yeast selection.

ABSTRACT

The growth rates of 10 yeast strains selected from the vineyards and wines of Valea Călugărească and Panciu were evaluated by the use of a calorimetric technique. The yeasts were selected in both conventional and ecological vine plantations, but also in various phases of must fermentation. A high rate of growth is important for selected yeast if it is to outgrow the other naturally occurring yeast strains in the must. Of all the 10 yeast strains evaluated the *S. cerevisiae* strains isolated, irrespective of the geographical origin or type of plantation (conventional or ecological) proved to have the best potential for winemaking, as far as the growth rate constant is concerned, being included in a group with statistically similar growth rates. The growth rates of these *Saccharomyces* selected yeasts were higher than that of the control yeast, EC 1118. The non-*Saccharomyces* strains grew more slowly, the lowest growth rate being recorded for a strain later identified as *Kloeckera spp.* The studies will continue for the strains that showed rapid growing with the evaluation of ethanol tolerance and then for the determination of the sensory and chemical profile of the wines obtained using these yeasts.

Evaluation of Feteasca neagra wine from Murfatlar vineyard by new sensorial methods and physico-chemical analysis

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Keywords: sensory analysis, olfactory profile, taste profile.

ABSTRACT

Sensory profile of wine is very important information for the wine consumer. It is found in the literature, in brochures or presentation of wines, or in summary form on their label. Among red high quality wines like Pinot Noir, Cabernet Sauvignon and Merlot, has been made recently noted Feteasc㠠neagră wines, provided from one of the oldest Romanian varieties. In this paper we have studied four varieties of Feteasc㠠neagră wines obtained in autumn 2008 in three centres of Murfatlar vineyard: Murfatlar, Medgidia and Cernavodă. These were sensory examined by a group of specialized tasters and authorized members of the Association of Certified Tasters in Romania. To express tasting results it was used a points system based on the assessment after a scale from 0 to10, for a range of visual characteristics, olfactory and taste, the rating is directly proportional to the intensity of the analyzed character. Based on scores given by each member of the tasting jury the arithmetic mean was calculated for each character and the physico-chemical analysis were achieved by standard methods and were conducted in the laboratory of SCDVV Murfatlar. The characteristics analyzed by the new methodology of sensory analysis are more explicit, is not giving differential notes, the scale is the same for all of the examined characteristics. By using this system, we can reproduce very well the sensory profile of wine - in this case, the Feteasc㠠neagră wines from Murfatlar vineyard.

Morphological characterization of local grapevine varieties using fractal analysis of the leaves

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Keywords: Fractal dimension, HarFA soft, Box - Counting Method, ampelography

ABSTRACT

The shape of the leaf is one of the most important morphological characteristics of the Vitis Genus. The characterization of leaf architecture through the fractal analysis method is a modern research alternative, which coupled to new tools in the shape analysis of leaves opens interesting prospects for ampelographic research.

This paper presents a morphological evaluation of eight local grapevine varieties (Vitis vinifera L.), through determining the fractal dimension of the leaves contour and the degree of section. The results show that the leaves of varieties with sectional leaves, with rare and elongated teeth, are characterized by great fractal dimensions compared to leaves of varieties with entire or shallow lobed leaves with small and sharp teeth. The fractal dimension of the leaves and the degree of section are invariable descriptive parameters which can be used together with other ampelographic descriptors in the characterization and discrimination of grapevine varieties.

Research on relations between growth-yield balance indices and grape yield quality on some varieties created at S.C.D.V.V. Blaj

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Keywords: Ravaz index, growth-yield balance index, renewed dry matter of vegetative vine part, sugars

ABSTRACT

In terms of 2009, at SCDVV Blaj over Astra, Blasius, Selena and Fetească regală varieties determinations were made to calculate growth-yield balance indices. The highest value of the Ravaz index had the variety Fetească regală, 8.11 and smallest variety Selena, 3.56 assigned values within the normal range. Gowth-yield balance index stands out with the maximum variety Selena (21.94), and the minimum at Fetească regală variety (10.97), which expresses an imbalance between growth and fructification. The variety with the highest renewed dry matter of vegetative vine part is Fetească regală (941 g/vine) and the minimum is at Astra (358 g/vine), expressing a variety production below potential. It have highlighted the positive correlation between growth-yield balance index and the accumulation of sugars and negative correlations between Ravaz index, renewed dry matter of vegetative vine part and berries sugar content.

Buds viability and carbohydrates canes content of some varieties created at S.C.D.V.V. Blaj during winter 2009-2010

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Keywords: grapevine, starch, canes, low temperature, carbohydrates

ABSTRACT

Low temperatures during dormancy of grapevine is the main stress factor affecting plant growth and development and the quantity and quality of grape yield in next year as well. In this work paper, it have make observations on the level of critical temperatures in winter 2009-2010, the amount of carbohydrates and bud viability in varieties Astra, Blasius, Selena and Fetească regală. Critical period for vines, in wine growing centre Blaj was in January when there were seven consecutive days of frost, with temperatures of -22°C. The carbohydrate content ranged from 17.78 g % (Blasius) and 13.09 g % (Fetească regală). Most viable buds showed the variety Fetească regală, 50.95 % and the lowest Astra, 36.12%. Duncan test was used to test for significant differences between varieties. It have been highlighted insignificant correlations between buds viability and canes diameter, carbohydrate canes content and cane diameter and significant correlation between buds viability and carbohydrate canes content.

The study of new elite of Cabernet Sauvignon for obtaining red choise wines

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Keywords*:* elite, red choice wine, fertility, productivity

ABSTRACT

The study was performed in the Comparison field during the period 2004 – 2008. There were carried out observations and taken samples from the 7-14-23 elite (clonal selection of Cabernet Sauvignon) and from the control Cabernet Sauvignon cl 7 Drăgăşani, created in 1976 by the researchers M. Neagu, P. Baniţă, Daria Basamac, M. Mărculescu. There were studied: the phenological data, the fertility coefficients, the productivity indices, the physiologic characteristics and the technological characterization. It was observed that the elite were more valorous than the control. This important elite is in course of admit in culture.

The determination of some physical and chemical characteristics of wine using spectrophotometer methods

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Keywords: spectrometric technique, content of methanol, content of citric acid, antocyans, color, quality

ABSTRACT

In this paper are presented the advantages of use the spectrometric method in the characterization of wines. The content of methanol, citric acid and antocyans are evaluated by using a spectrophotometer UV/VIS Perkin Elmer Lambda 25, with double-beam. The color and the absorption spectrum of different sort of wine: red, rose and white (Pinot Gris and Cabernet Sauvignon – Valea Călugăreasca area and Rose – Drăgăşani area) from the same year (2008) were investigated.

Physical – chemical and microbiological analysis of different Romanian wines

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Key words: quality, limits OIV, local producer, yeasts

ABSTRACT

In this paper are presented the analysis results of two wines: Fetească Albă and Rose from Drăgăşani area. These wines were produced in 2008 by a local producer. We chose to study these Romanian wines because we intended to check if their parameters are within limits imposed by International Organization of Vine and Wine (OIV). In the same time, study of wines from certain wine growing region is very important for fermentative processes and for insurance of wine stability.

Morphological and biochemical modifications in grapevine in the presence of fleck virus

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Key words: *Vitis*, GFkV, sanitary status, farm

ABSTRACT

The paper presents the influence of fleck virus (GFkV) infection over the growth and development of grapevine variety Chardonnay, in a farm. The results of TAS-ELISA testing confirmed the precarious sanitary status of this genotype in all viticultural areas of the world. During of active growing period of grapevine plants were made records on shoots length and fertility, and the content of assimilating pigments in leaves was analyzed. The results regarding the growth components were correlated to the heterogeneous agrotechnical conditions and any the less to the phytosanitary status of grapevine plants. Thus, the visual sanitary selection as the first step of selection with the aim of multiplication of virus - free grapevine biological material is not sufficiently and should be supplemented with laboratory tests. The study is useful in the case of field inspections, for symptoms observation, clonal and sanitary selection of valuable genotypes identified in degraded viticultural plantations (aged and/or found on soils subjected to natural erosion process). In order to investigate the influence of viral infection on the grapevine growth and development processes, it is recommended that further researches in the plantation of infected vines with virus/virus complex, compared with healthy plants to be made under uniform conditions of culture.

Studies regarding the chemical composition of grape stalks of local varieties of Fetească with applications in obtaining bioethanol

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Keywords: crop wastes, renewable energy, biofuels

ABSTRACT:

The issue of renewable energy from agrochemicals sources is still studied.

As energy crops affect the balance of natural ecosystems recovery of energy from waste crops is required. Cereals, especially straw, were used as models, but their quantity is insufficient. Therefore it is recommended to identify new sources of energy.

The purpose of the paper is to study the chemical composition of plant material from two grape stalk local varieties: Fetească Regală and Fetească Neagră.

Grape stalk is an untapped agricultural waste which possesses significant quantities of energy. It was found that native varieties of Fetească show considerable amounts of chemical composition in starch, cellulose, hemicelluloses and lignin.

Discrimination of Băbească neagră wines from different winegrowing area using electronic nose

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Keywords: sensory analysis, red wine, gas chromatography

ABSTRACT

The methodology for food products discrimination is not very clear definite, priority being sensory analysis. 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. Heracles analyzer (Alpha MOS) provide an unique impress for each product using two different polarity separation columns, which provide a specific response for each wine volatile component, similar to human nose. The instrument is based on ultra-fast gas chromatography and the translation and interpretation process, specific to human olfactory sense, is substituted by powerful software (Alpha Soft ver. 11). The present study presents the assessment of some different discriminating methods of four Băbească neagră wine variants (V3 = selected yeast Lalvin BM 45 + enzyme, V4 = selected yeast Lalvin BM 45 + enzyme Lallzyme OE + chips, V5 = selected yeast Lalvin BM 45+ enzyme Lallzyme OE + tannin Limousine and V6 = selected yeast Lalvin BM 45 + enzyme Lallzyme OE + tannin Tostato) from Odobeşti, Pietroasa and Bucureşti wine-growing area using an electronic nose multiorganoletic analyzer. The applied analysis techniques were Principal Component Analysis (PCA) and Discriminant Function Analysis (DFA). The analyzed wine samples during this study were obtained at USAMV Bucureşti.

Strengthening brand „wine of Stefanesti" by extending in culture a new clones: Feteasca alba 97 ST. and Feteasca regala 72 ST. for white wine, and for red wine Feteasca neagra 6 ST.

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Keywords: quality, wine, productivity, virus free

ABSTRACT

Entry into the European Union beside main wine countrys, with highly developed viticulture, with technologies and machines for wine-preparation very modern and with a very efficient system capitalization, represents for Romania and separately for each vineyard challenge but also a very difficult barrier to past. Sustainable Development Strategy of Romanian viticulture "ORIZONT 2014" indicates at opportunity penetration in this system qualitatively almost perfect, wine made from traditional Romanian varieties and their clones, with known traceability and authorized from healthy growing plantations, free of major viruses and mycoplasma. To achieve this objective, INCDBH Stefanesti-Arges, created and approved clones of Feteasca regala 72 St. and Feteasca alba 97 St. for quality white wines, and Feteasca neagra 6 St for quality red wines.

Effect of spraying of *Thompson Seedless* grapevines with hydrogen cyanamide on morphological, biochemical characteristics and mealybug (*Planoccocus ficus)* control

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Keywords: table grapes; subtropical conditions; hydrogen cyanamide

ABSTRACT

Hydrogen cyanamide at 0, 2, 3 and 5% concentration was applied on *Thompson Seedless* grapevines planted at 2 x 2 meter in loamy clay soil on 1, 8 and 15 January. Application with Dormex increased weight of pruning weight kg/vine, while total carbohydrate of canes, meanwhile increased percentage of fruiting buds and yield. All treatments hydrogen cyanamide decreased number of mealy bug on canes. The best results were achieved with 5% in first January.

Boron application efficiency on horticultural plants on sandy soils in South Oltenia

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Keywords: fertilization, watermelons, peaches, vineyard

ABSTRACT

Additional fertilization with boron-based products contributes to the production and income increases in horticultural plants on sandy soils. In watermelons additional fertilization of boron-based products resulted in a level of profit of 8460 lei/ha and 9910 lei/ha, as against with the control variant, which was fertilized only before planting, and where the profit level was 7876 lei/ha. In the case of the peach culture, using the boron - based fertilizer, determined to achieve a level of profit between 2160 lei/ha and 4360 lei/ha, as compared with 2773 lei/obtained in the case of the foliar unfertilized variant. Vineyard crops with foliar fertilization of boron-based products at two times, contributed to an obtained profit between 431 lei/ha in variant treated with Cupribor, 5 l/ha and 1162 lei/ha in variant treated with boron complex 5 l/ha. Increased foliar treatments number to four moments determined a profit of 1182 lei/ha at variant treated with Folibor standard 5 l/ha, and 1619 lei/ha in variant treated with boron complex 5 l/ha.

Qualitative and quantitative performances of some table grape varieties when applying a different of buds/vine

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Key words*:* vineyard, climatical index, table grape varietes, precocity, carpometric parameters

ABSTRACT

Table grape varieties with their characteristics of quality, impressive variability, genetic diversity, appreciation and popularity is very known, offering new ways of study the scientific and practical research. The present study represent a comparative analysis regarding the behavior of some table grapes varieties with different maturation periods, from global range and also Romanian creations – Victoria, Muscat D'Adda, Afuz Ali, Xenia, raised in ecopedoclimatic conditions registred under the vineyard Ostrov, situated in viticultural region Danube Terraces. The experience is concerning the application of different loads of buds/vine and they were made detailed observations and determinations, regarding the agrobiological and technology reaction, but in particular, the production was evaluated in terms of physical and chemical characteristics of grape harvest for marketing. Eco-climatic conditions of Ostrov viticultural center demonstrated that they are very favourables for table grapes varieties growing and they are defining the maximum for grapes maturation precocity, impressing them a plus of organoleptic quality; these conditions are not founded in other viticultural region of our country.

Comparative study regarding the behaviour of some autochthonous clonal selections of the principal varieties cultivated in viticultural centre Pietroasa, to extend in culture

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Keywords: climatical index, multiplication, vineyard, varieties

ABSTRACT

For harmonious and balanced development of Romanian viticulture and wine-growing industry it impose a modernization stage, which assure a reorganization of varieties sorts, the extending into production of the valuable clones and selections of these varieties, by multiplication of certified biological material and by approaching a complex study on autochthonous clonal germo-plasma fund, in order to diversify the vine-viticulture products and to improve their qualitative performance. The present study is a preliminary indication of the clonal selections of varieties behavior, Grasa de Cotnari, Tamaioasa romaneasca, Fetească neagra, Babeasca neagra, Busuioaca de Bohotin,–varieties extremely valuable in terms of wine quality - in ecopedoclimatic conditions from Pietroasa vineyard. The study will determine the improvement and completion of current range, in terms of quantity and quality, because each clone, by cultural and quality skills for which it was selected (quantity, quality, mixed), contribute in a complementary manner to achieve quality production in order to obtain wines with denomination of origin.The eco-climatic conditions from Pietroasa vineyard have demonstrated that there are favorable for growing these varieties and defining the achievement of a maximum in terms of precocity ripening grapes and bring an organoleptic quality conditions which are not found in any other viticultural area of our country.

Quantitative and qualitative influence of Kelpak product, from seaweed, on vine varieties

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Keywords: ecology, grape, medium, Ecklonia maxima, health, Vitis vinifera

ABSTRACT

The study consisted of applying two treatments, during the growing season, with organic product *Kelpak* at five varieties of vine: Perlette, Augusta, Victoria, Chardonnay, Merlot. It was analyzed the influence of environmental product, obtained from seaweed, on sugar and acidity content in grape berries and have determined the average weight of grapes, the mass of 100 berries and vegetative growth. Vine varieties reacted differently: some have recorded growth at weight grapes, mass of 100 grape berries, acidity, length of shoots but a little lower in sugar content; others have recorded higher values regarding acidity, sugars and vegetative growth but in exchange for lower production.

BOTANY & PHYSIOLOGY

Researches concerning the chemical composition of essential oil from *Artemisia austriaca (Asteraceae)* Jacq.

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Keywords: *Artemisia austriaca* Jacq., *Asteraceae***,** essential oil, ecotypes, fresh *herba*

ABSTRACT

Several *Artemisia* species have been or are medicinally use and hence are of more or less commercial value. Analysis of the essential oil extracted by hydrodistillation was performed by GC-MS and emphasized the presence of some major compounds in *Artemisia aust riaca* Jacq. The main components of *Artemisia austriaca* Jacq. essential oil are: camphor, eucalyptol, borneol, camphen, myrcen, α-pinene and their quantities depends on the the period of vegetation and the ecotype. Camphor and camphene reached high values at the flowering stage, while α-pinene, myrcene and borneol at the maturation stage. The quantity of eucaliptol (1,8-cineole) depends on environmental conditions, so a dry climate (in Bucharest or Amara-Ialomiţa) decresed 1.2-1.4 times its values comparatively with a wet climate (in Slănic-Prahova or Corbii Mari-Dâmboviţa).

The secretory structures and volatile oil composition of *Mentha aquatica* L. from Danube Delta

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Keywords*: Mentha aquatica* L., watermint, *herba*, secretory cells, trichomes, peltate, volatile oil, menthofuran, eucalyptol

ABSTRACT

The soil humidity and temperature influence the morphology, anatomy and chemical composition of volatile oil of *Mentha aquatica* L. This research purposed to study the secretory structures present in stems and leaves of *Mentha aquatica* L., as well as the composition of the essential oils extracted from fresh *herba* of a Romanian watermint from Danube Delta. Both stems and leaves present secretory trichomes, peltate and small capitate trichomes - a plate or shield-shaped cluster of 8 cells attached directly to the surface or borne on a stalk of some kind. The main volatile compounds of fresh *herba* volatile oil are menthofuran (54.95%), β-trans ocimene (6.63%), D-limonene (6.33%), eucalyptol (4.93%), ledol (4.33%) and β-caryophyllene (3.30%).

The composition of volatile oils extracted from *Perovskia atriplicifolia* Benth flowers and leaves

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Keywords: essential oil, leaves, flowers, *Perovskia atriplicifolia,* eucalyptol, tau-cadinol, camphor

ABSTRACT

This studies relieved that volatile oil extracted from *Perovskia a triplicifolia* flowers presented a smaller monoterpenes content (57,71%) and a higher sesquiterpenes content (40,08%), compared with those extracted from leaves (65,59% and 30,63% respectively). Flower extracted volatile oil contained higher quantities of eucalyptol (15,83%), tau-cadinol (14,67%), α-pinene (10,88%), β-caryophyllene (7,99%) and α-caryophyllene (7,99% and 6,96% respectively), and the one extracted from leaves eucalyptol (21,36%) and camphor (14,31%).

Effect of applied fertilizer on the chemical composition and quality of potatoes

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Keywords*:* potato, tubers, starch, soluble solids, minerals, respiration rate, quality, NPK fertilizers, agrofond

ABSTRACT

The cultivar characteristic features, soil humidity and temperature influence increasing the potato yield also the applied fertilization. The potato-studied cultivars accumulate different mineral element amounts in function of the applied fertilizer. Cosmos, Tresor, Bellarosa cvs. accumulate the highest amount of K on Agrofond I: $N_{150}P_{50}K_{50}$. Phosphorous is absorbed and accumulated by all studied cultivars at high NPK concentrations characteristics for Agrofond III: $N_{250}P_{150}K_{150}$. Increasing the NPK doses inhibit absorption and accumulation of Mg in all studied cultivars. Calcium ion is preferentially absorbed and accumulated depending on the applied agrofond. Starch content depends on the cultivar, for the same applied fertilizers. Agrofond II: $N_{200}P_{100}K_{100}$ determined for all the studied cultivar an increasing of starch accumulation, while the Agrofond II: $N_{200}P_{100}K_{100}$ determined for all studied cultivars a decreasing of the soluble solids content. Also Agrofond II: $N_{200}P_{100}K_{100}$ influenced all cultivars by a decreasing of the respiration rate, so, increasing the potato storage capacity.

Contribution to knowledge the volatile oil from *Paeonia officinalis* L. flowers

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Keywords: Paeonia officinalis, volatile oil, floral scent, parfume.

ABSTRACT

***Paeonia officinalis* flowers have a weak scent, which contains a high quantity of terpenes. From these substances, monoterpenes are in majority, such: β-citronelol (22.24%), and eucalyptol (6.22%) and sesquiterpenes: β-cariophyllene (13.36%), dihydro-trans-farnesole (11.31%) and trans-farnesole (7.41% from the total content of the determined components). There were also quantified high quantities of hydrocarbons (25.70%).**

Ruderal vegetation, between option and necessity

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Keywords: ruderal vegetation, an alternative, aesthetic recovery, reduced management, avant-garde

ABSTRACT

The article argues in favour of spontaneous vegetation in urban areas that can be a viable alternative, even in relation to aesthetics, of traditional landscape facilities, taking advantage of its high adaptability to the specific environmental factors in the city, its reduced maintenance costs and superior margin of success. It is discussed in terms of both botanical, respectively phytosociological, and landscape.

Steviol glycosides: pharmacological effects and radical scavenging activity

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Keywords: ROS scavenging, hydroxyl radicals, steviol glycosides, steviol glucuronide, pharmacological effects

ABSTRACT

Steviol glycosides are sweeteners of *Stevia rebaudiana* Bertoni. Besides sweetening properties, they also possess interesting pharmacological effects such as lowering hypertension, lowering blood glucose in type 2 diabetes, anti-inflammatory as well as anti-carcinogenic and anti-atherosclorotic activities. A radical scavenging activity for hydroxyl radicals of steviol glycosides and steviol glucuronide has now been demonstrated *in vitro* . The activity was measured by the decrease of the fluorescence of hydroxyterephthalate that is formed from terephthalate in the presence of hydroxyl radicals (excitation at 315 nm, emission at 420 nm). Stevioside, rebaudioside A and rubusoside have about the same scavenging activity and were much better (20 x) than glucose or sucrose. It was demonstrated that steviol glucuronide, the excretion product in urine, also has strong ROS ($^{\bullet}$OH) scavenging activity (14 x better than sugar). This activity might explain most of the beneficial pharmacological effects of oral stevioside on ROS related diseases, such as high blood pressure, type 2 diabetes, insulin resistance, atherosleroris, inflammation and certain forms of cancer, as well as certain brain diseases like Parkinson or Alzheimer. More research is still required on this interesting topic.

Contributions regarding the biometrics and several biochemical aspects of two Salix species from Prahova river meadow (Pucheni)

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Keywords: willow, leaf, shape index, salicylic acid

ABSTRACT

For *Salix alba*, in April, leaf 4, located on the shoot, was characterized by the highest values of weight, length and width. In May, leaf no 6 had the highest values of weight, length and width and in June leaf no 5 had the highest values of weight, length and width. The foliar limb width was comprised between 11 and 18.5 mm and the shape index (the length/width quotient) was found within the range 2.81-7.81, with an average value of 5.31. The foliar surface was comprised between 148 and 1365 mm^2 . For *Salix fragilis*, in April, leaf 4, located on the shoot, was characterized by the highest values of weight, length and width. In May, leaf no 4 had the highest values of weight, length and width and in June leaf no 6 had the highest values of weight, length and width.

Biometrical and biochemical aspects of Salix triandra and Salix purpurea species, found on Prahova river meadow (Pucheni)

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Keywords: salix, annual branches, shape index, correlations

ABSTRACT

The maximum limb length reaches actually 110 mm, being comprised within the range 50-100 mm. For *Salix purp urea*, the biometrical variation of the leaves on the shoot was followed, in three different moments (April, May, June). The number of leaves varies from 15 to 13 and 9, respectively. The position of the leaves can be correlated to leaf weight, leaf length and leaf width. The foliar surface is found within the range 128-217 mm^2, representing aproximately 70.45% of a quadrilateral area.

Influence of alternative technologies for maintenance of soil on the vine hydric regime

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Keywords: soil management, soil moisture, transpiration rate, relative water content

ABSTRACT

Viticulture is a highly intensive, using technique with a high potential pollutant. Irrational use of resources can contribute to increased erosion on soil physical and chemical degradation through misuse or abuse of fertilizers and irrigation, pollution phenomena intense because of the use of pesticides widely. Under current conditions of great interest is the formation of a new thinking and action to prevent occurrence of serious ecological imbalances. The paper shows the advantages of using alternative systems of maintenance of soil on soil moisture, and the rate of transpiration and relative water content of vine leaves.

Investigation on suitability for modified atmosphere packaging storage of excelsior apricot cultivar

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Keywords: modified atmosphere packaging, *Prunus armeniaca L.*, post-harvest, color, ethylene

ABSTRACT

Apricots are climacteric highly perishable fruit and their short postharvest life is a problem for marketing. Extending of stone fruits shelf-life is very important for prolonged consumption period. MAP is an available technique for the improvement shelf-life and maintaining of apricot quality.

The objective of this study was to evaluate the suitability of two films packaging and low temperature storage for quality maintaining of Excelsior apricot variety and establish optimum storage time. Acoustic firmness, color (L*, a*, b*), dry matter, SSC/acidity ratio, weight were assessed for quality fruit at harvest and weekly during 15 days of storage. Physiological determinations (respiratory intensity and ethylene production) were also recorded. The results of this experiment indicated that Excelsior cultivar presents a good storability special through used unperforated films, and the end of storage (15 days) this cultivar having a pleasant commercial appearance.

The influence of environmental anthropic conditions on Non-Photochemical Quenching (NPQ) indicators of chlorophyll fluorescence at some of the most important synanthropic plant species in Piteşti, Mărăcineni and Mioveni

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Keywords: thermic dissipation, photoprotection, photoinhibition, photodamage

ABSTRACT

Chlorophyll fluorescence represents an indicator of the energy conversion in the photosynthesis process, offering information regarding the photosystem II (PS II) efficiency. Functioning of PS II is the most sensitive indicator of environmental stress in plants. Changes in PS II activity can be assayed rapidly and non-destructively by measurement of chlorophyll fluorescence. NPQ test was applied to the synanthropic plants analyzed, in order to highlight the photoprotection processes as a result of plant exposure to light excess. Thirteen indicators were calculated and interrelations were stated amomg. The experiments were carried out in 2009 for six dominant species on the wastelands around the cities Pitesti, Mioveni and Maracineni: *Cichorium intybus L.*, *Conyza canadensis (L.) Cronq.*, *Erigeron annuus L. (Pers.)*, *Lactuca serri ola T orn.*, *Polygonum avi culare L.* and *Echinochloa crus-galli (L.) Bea uv.*, by the use of FluorPen FP 100 fluorometer. The highest values of F_0 (210), F_M (756) şi NPQ_Lss (1.97) were registered at *Erigeron annuus L. (Pers.)*. The lowest values of NPQ_D_3 (0.06), QP_Ls (1.09) and R_{df} (0.66) were registered at *Echinochloa crus-galli (L.) Bea uv.*, which having a low NPQ is not affected by the light excess. The highest rate of QY_Lss (0.30) was determinated at *Conyza canadensis (L.) Cronq.*.

Anatomical changes of *Fraxinus excelsior* L. leaf exposed to urban traffic pollution

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Keywords: ash, epidermis, collenchyma, parenchyma, stomata, mesophyll

ABSTRACT

Urban traffic pollution differentially affects some plants species. Among them, *Fraxinus excelsior* is also included. From this species, leaves samples were collected from polluted and unpolluted trees, samples prepared as petiole, blade rachides and leaflets. Microscopic observations and measurements revealed many anatomical changes induced by the urban traffic pollution. Petiole and leaf epidermis recorded higher values in the case of pollutes samples, as against the unpolluted ones. Petiole tissues, excepting epidermal area, emphasized much lower values in polluted samples, compared with unpolluted ones. The average number of stomata per mm^2 was higher in unpolluted, compared with polluted samples. Leaf mesophyll significantly declined quantitatively at polluted sample, compared with unpolluted ones. The mesophyll leaf tissue has been affected by pollution: in most areas palisadic tissue was monolayer organized and at the lacunar tissue cells were disrupted, and resulted many collapsed cells.

Research results regarding the anatomy of *Momordica charanthia* L. specie

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Keywords: epidermis, collenchyma, parenchyma, bicollateral vascular bundle, stomata

ABSTRACT

The anatomical observations were made in the stems and leaves of *Momordica charantia* grown in the greenhouse. The anatomy of the *Momordica charanthia* specie is similar of the Cucurbitaceae family. The contour of the stem in a transversal section is polygonal with numerous tectorial and multicellular secretory hairs on the epidermis. There are 10 vascular bundles bicollateral opened in the fundamental parenchyma. The petiole is elliptic-semicircular with two protuberant wings, separated by a deep groove in transversal section. In the epidermis of leaf there are tectorial and secretory multicellular hairs. In the petiole there are 7 vascular bundles bicollateral opened disposed in an arc, with the same structure like in the stem and two lower vascular bundles in the both wings. The leaf blade is amphystomatic, with anomocitic stomata type. The number of stomata per square millimeter is much higher in the lower epidermis than upper epidermis. In the both leaf epidermis there are multicellular tectorial and secretory hairs. In the median nervure of the leaf blade there is only one vascular bundles bicollateral opened. The mesophyll type of leaf blade is bifacial.

Research on trace elements and heavy metal accumulation in eggplant organs depending on the applied technology

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Keywords: *Solanum melongena*, heavy metal, fruits

ABSTRACT

Vegetables represent a potential source of important nutrients and constitute important functional food. Nowadays, there are many research preoccupations for eggplant new cultivation methods, as for instance using of biodegradable plastic mulch. The purpose of the present study was to characterize the distribution of mineral elements between the different plant organs of cultivated eggplants, after a clean technology - with the sheet of biodegradable mulch - and to monitor the content of heavy metals in fruit. Mn, Fe and Na accumulated in roots and mature leaves. B, Ba and Cr accumulated in leaves, fruits and flowers. Their absorption has been dependent on the used technology, excepting Fe and Ba. The fruit content of the determined heavy metals (Al, Cu, Pb and Zn) was below the maximum limits allowed for vegetables. Aluminum and zinc accumulated mainly in roots, lead in aerial organs and copper distribution was relatively uniform among plant organs. Analyzing in terms of eggplant fruits quality, this clean technology using biodegradable film reduced or eliminated weeds, also there was obtained yields with a high content of mineral nutrients and low in heavy metals, under the maximum limits allowed.

Research on the accumulation of macro elements in eggplant plant organs depending on the applied technology

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Keywords: *Solanum melongena*, macroelements, mulch

ABSTRACT

Examining the five variants covered with mulch (V1 - Mulch non-degradable CERTEX; V2- Mulch biodegradable white 1; V3- Mulch biodegradable white 2; V4- Mulch biodegradable black 1; V5- Mulch biodegradable black 2) compared with the control it was found that the black film 2 recorded the highest accumulation of dry matter: 22.35% in roots, 25.65% in the stem, 22.29% in mature leaves, 21.06% and 15.27% in young leaves, and flower, respectively. A high mineral content was determined in roots and mature leaves (2.71%; 2.38% mature leaves and roots - V5; V2), and the lowest in flowers (eg 0.39% in control). Comparing the distribution of potassium between the different organs of plants, depending on the culture technology, it highlights the fact that potassium is a mobile ion and is generally present in tissues resulting in a higher content of water (the flower - control, V2 ,V4 of the root - the control and V1). Also, mature leaves have a high potassium content, which confers resistance to dehydration. The highest amount of calcium was determined in plant roots variants V2 (219.86 mg 100 g $^{-1}$ DW) and V3 (208.54 mg 100 g $^{-1}$ DW), and mature leaves from plants of variants V2 (212.66 mg 100 g $^{-1}$ DW) and, V1 and V4 (202.4 mg 100 g $^{-1}$ DW).The experimental data obtained in this experiment shows that phosphorus is transported rapidly by shoot organs and is generally accumulated in flowers, fruits and leaves. Distribution of magnesium is relatively uniform, being generally dependent on the mulch type used to cover the ground. There is a positive influence on the absorption of magnesium in plants at variants V3 and V2. The highest concentration of magnesium was recorded in flowers- V3 (35.98 mg 100 g $^{-1}$ DW).

Researches about the biochemical and physiological changes on the apricot, under the *Stigmina carpophila* Lev. M.B. Ellis pathogen agent's influence

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Keywords: the leaves' perforation, apricot, physiological and biochemical parameters

ABSTRACT

It is well known the fact that under the pathogen agent's action, which induces the fungal piercing of apricots, the entire metabolism of the plant is disturbed. This is the reason for which, in this present study we decided to discover in what way the biochemical processes -which take place inside healthy plants, in comparison with sick plants- are influenced. The analyses have been made on apricot fruits, healthy but also unhealthy, because on this species the symptoms on the fruits' levels were the most frequent, in comparison with other tree species. The results obtained are presented here, and they concern the respiration intensity, the amount of ascorbic acid (vitamin C), the ethylene emission, the amount of carbohydrates (glucose, fructose, sucrose) and the amount of total dry and soluble substance, the established acidity, the dosage of carotene and the anthocyans, also some mineral element content.

OTHER FIELDS

The study of lumbricidae fauna in three terrestrial ecosystems of Cândești Piedmont, Argeș County (Romania)

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Keywords: lumbricid, terrestrial, diversity, frequency, dominance

ABSTRACT

The work aims to study the lumbricid fauna in three terrestrial ecosystems of Candesti Piedmont, in the county of Arges (Romania). In the three studied ecosystems (deciduous forest, spruce forest and grassland), specific diversity is composed of 11 species of lumbricidae. The dominant species in three ecosystems are *Octolasion la cteum, Aporectodea ro sea ro sea* (Savigny1826) *Allolobophora ca liginosa caliginosa* (Savigny1826) and *Dendrobaena Byblica* (Rosa, 1893). In terms of frequency and constancy of species in the ecosystems studied, the above mentioned species proved to be constant, the other species being accidental. The highest densities in the three stations (Ruginoasa - deciduous forest, Cetate - spruce forest and Cetate - grassland) were recorded by the species *Allolobophora caliginosa caliginosa* (Savigny, 1826), *Aporectodea rosea rosea* (Savigny, 1826) and *Octolasion lacteum* (Örley, 1881). The highest relative abundance is represented by the species *Octolasion la cteum* (Örley, 1881) with 74.44%, followed by *Aporectodea r osea r osea* (Savigny, 1826) with 70.97% and *Allolobophora ca liginosa ca liginosa* (Savigny, 1826) with 50%. Relative humidity values in soil levels remain approximately equal in Ruginoasa and Cetate – spruce stations and slightly higher in Cetate – grassland station.

Horticultural products - an alternative carbon source for production of bacterial cellulose by *Acetobacter xylinum* strain

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Keywords: fruits, glycerol, cellulose membrane.

ABSTRACT

Bacterial cellulose (BC) is preferred over the plant cellulose as it can be obtained in higher purity and exhibits a higher degree of polymerization and crystallinity index. It also has higher tensile strength and water holding capacity than plant cellulose, making it more suitable raw material for producing high fidelity acoustic speakers, high quality paper, and dessert foods, pharmaceutical and medical applications. The present work investigated bacterial cellulose biosynthesis by *Acetobacter xylinum* DSMZ 2004, using horticultural products – fruits and glycerol as carbon source. Significant cost reductions are possible with improvements in fermentation efficiency and economics of scale, the lower limit of the cost of microbial cellulose being determined by the price of the raw material substrates. Thus, one of the many promising applications for the use of glycerol is its bioconversion to high value compounds through microbial fermentation. Horticultural products and glycerol are not only cheap and abundant. Production rate was also improved by adding ethanol 1,4% (v/v). The production rate of bacterial cellulose on flasks in static culture was between 2-9 g/L. It has been demonstrated that the bacterial cellulose production was enhanced by the addition of glycerol to fruit substrate. The bacterial cellulose pellicle obtained after fermentation were purified and the membrane surface morphology was revealed using SEM imaging. FTIR spectroscopy was used primarily to identify the chemical structure of the BC membranes. Thermal properties of produced and rinsed bacterial cellulose were studied by the TGA and DSC methods.

Achieving a pastry product, fortified with iron, destined to prevention and diet therapy of ferriprive anemia of children

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Key words: fortified, iron salts, cake, apricots

ABSTRACT

In present paper are presented results of the performed researches in order to achieve a pastry product fortified with iron: *"Cake with dehydrated apricots, fortified with iron"*. As fortification agents there were used ferrous sulfate, ferrous lactate and ferrous gluconate, and fortification levels were 40 mg Fe/kg flour and 60 mg Fe/kg flour. It was used white flour (type 480), because this has a low content of phytates. Taking into account role of phytase in hydrolysis of phytates and increasing of iron bioavailability into human body, in composition of pastry product it was added standardised fungal phytase. Product *"Cake with dehydrated apricots, fortified with iron"* was analyzed from sensorial, physic-chemical and microbiological point of view. The used fortification agents do not determine modifications of sensorial characteristics (appearance, colour, taste and smell), of product in comparison with control sample (cake without adding of dehydrated apricots and unfortified with iron). Iron content of the pastry product fortified with iron is in the range 2.49 – 3.12 mg/100g, and the control sample (cake without adding of dehydrated apricots and unfortified with iron), has an iron content of 1.32 mg/100g.

Sensorial analysis of food products fortified with iron

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Keywords: fortified, iron salts, score, evaluator

ABSTRACT

In this paper are presented results of the performed researches for sensorial analysis of food products fortified with iron, achieved within the National Institute of Research&Development for Food Bioresources – IBA Bucharest: bakery products (white bread, rolls with sun flower and sesame seeds, poppy sticks), fruit-based concentrated product (plums jam fortified with iron), pastry product (cake with dehydrated apricots). As fortification agents, there were used ferrous sulfate, ferrous lactate and ferrous gluconate, and fortification levels varied in the range 20 mg Fe/kg flour – 80 Fe/kg flour, in case of bakery and pastry products, and 4 mg/100g end product and 6.5 mg/100g end product, respectively, in case of fruit-based concentrated product.

In order to evaluate sensorial quality of food products fortified with iron, it was used *"Comparison method with unitary score scales".*

The used fortification agents do not determine modification of sensorial characteristics (appearance, colour, taste and smell) of food products fortified with iron in comparison with control samples (food products unfortified with iron).

The results obtained at maize green matter crop under different treatments from Lacu Sărat, Brăila

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Keywords: trial plot, treatment variants, yields

ABSTRACT

The maize is one of the plants with multiple uses including that of being used as fodder, not only as grains or processed feed, but as fresh green matter too. The maize green matter crop is sown after a previous crop harvested in late spring or early summer and it is used as fooder. Both maize green matter and silo crop are well agreed by all animal species, having a high coefficient of digestibility. Being a weeder plant, it leaves the land free for weeds and constitutes a good previous crop for many plants, it is a good user of mineral and organic fertilizers, and it reacts very strong to irrigation. In the natural background conditions of the trial plot, and taking into account the improvement scheme, the maize green matter crop responded well to most treatment variants, its yields obtained on different variants being significantly. The main purpose of the research was to pursue the influence of agrophytotechnical measures on soil and yields for the main field crops in the trial plot Lacu Sărat, Braila County, and, in this paper, the behaviour of the maize green matter crop has been observed.

Systemic plant defense against pathogens: an overview

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Keywords: systemic acquired resistance, systemic induced resistance, elicitors, PR-proteins

ABSTRACT

Plants are exposed to a variety of biotic stress factors and in turn have developed sophisticated mechanisms for the perception of the attack and its transduction into an effective adaptive mechanisms using constitutive or inducible biochemical, and molecular mechanisms. This article reviews the most significant findings from the theoretical and practical view point, in systemic resistance against pathogens research, with a focus on recent advances.

Pest insects in early cabbage in Băneasa – Giurgiu

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Keywords: cabbage, pests, damages, integrated control

ABSTRACT

Cabbage is one of the oldest plant cultures that has a significant share in our nutrition and in the range grown in our country. The staggered cabbage crops develop and grow on early summer or autumn and usually only in a protected area. In the early crop, the green area Baneasa is full of pest invasion: *Phyllotreta atra*, *Delia brassicae*, *Mamestra brassicae*, *Pieris brassicae brassicae* and *Brevicoryne brassicae*, the losses are huge and they are called *Delia brassicae* and larva of lepidopteres.

Biotechnique methods attract & kill to control moth pests in Romanian orchards and vineyards

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Keywords: pheromones, *Attract & Kill*, codling moth, summer fruit tortrix moth, grapevine moth

ABSTRACT

This paper presents the results from studies carried out during 2006-2009 in different Romanian apple orchards and vineyards to control codling moth (*Cydia pomo nella*), summer fruit tortrix moth (*Adoxophyes reticula na*) and grapevine moth (*Lobesia b otrana*) by *Attract & Kill* biotechnique. Romanian products which consist of specific pheromones of the pests and a piretroid, developed by Research Institute for Chemistry "Raluca Ripan" Cluj-Napoca, were used. The formulations were applied by hand, twice in the season – first time just after noticing first moths in pheromone traps and the second one about 6 weeks later. Males contacting a drop die within a few hours, reducing the reproduction and the level of populations.

The results showed good efficacy of the products formulated for *Attract & Kill* method with the percents ranging: 73.9-90.8% for codling moth, 84.6-91.8% for summer fruit tortrix moth, 73.0-89.4% for grapevine moth.

This strategy can be recommended in small orchards or vineyards where it can be applied by hand.

The establishment of *in vitro* propagation biotechnology for *Arnica montana* L. species

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Keywords: *Arnica montana* L., iniţiere, multiplicare, înrădăcinare, aclimatizare

ABSTRACT

The paper reveals the *in vitro* propagation biotechnology for *Arnica montana* L. species, as part of the project no. 32160/2008, regarding the chorological study of sozological categories for Argeş county flora, to restore endangered phytopopulations through conventional and biotechnological methods of propagation. The established biotechnology provides the usage of the next nutritive media, as follows: for initiation – base medium MS, with ½n, 0,005:2 mg/l auxins/citokinine, 20 mg/l NaFeEDTA, 20 g/l sucrose, 7g/l agar; for multiplication – base medium LF, with n concentration, 0,02:0,4 mg/l auxins/citokinine 0,02:0,4 mg/l, 32 mg/l NaFeEDTA, supplemented with 40 g/l dextrose and 7g/l agar; for rooting – the usage of ½n macro and micronutrients MS, n vitamins LS, 0,1mg/l AG_3, 0,2mg/l IBA, 38 mg/l NaFeEDTA 38 mg/l, 30 g/l dextrose, 7g/l agar and 0,3 g/l activated carbon.

Diaphania perspectalis (Walker, 1859) (Lepidoptera:Crambidae) a new pest of *Buxus* spp. in Romania

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Keywords: *Diaphania perspectalis*, introduced species, *Buxus* spp., distribution, damages

ABSTRACT

***Diaphania perspectalis* (Walker, 1859) (Lepidoptera:Crambidae) is a moth native to Asia causing severe defoliation on box (*Buxus* spp.). After an initial finding in Germany in 2007, it has been found in other 5 western European countries. This paper represents the first report of the presence of the pest in Romania. Aspects regarding the history of introduction and geographical distribution in Europe are presented. Also, species description and biology are discussed together with preliminary data about morphology of the pest, symptoms of attack and possibilities for detection and control.**

Landscaping and industrial archeology

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Keywords: postindustrial landscape, sustainable, Grand Hornu

ABSTRACT

The existing landscape which has resulted from the previous industrial activities has had a great contribution in deteriorating not only the urban environments located in its proximity, but also the public's opinion toward these habitable locations. In Grand-Hornu the landscape seems that it has not been subjected to father time's punishing effects. The houses were restored or preserved in different stages, the ex-colliery fosse was shut down permanently and a tower was demolished; the rest of the industrial complex was prepared to undergo a preservation process in order to be able to slowly attract the interest of potential investors. Now the field is vacated by houses, built in a distinct neoclassic architectural style, chimneys from factories and collieries and vacant strips of land which depict former buildings where various industrial activities took place are now mixed with spontaneous patches wild vegetation. This mix of vegetation and abandoned human establishments creates quite an unattractive landscape, which in turn generates a series of concerns to why has this area has been neglected for such a long time. The only chance for this area to recover its functionality would lie in the hands of young experts and visionaries, capable of taking the area architecturally and also functionally into the next century.

Soil erosion control by using an appropriate land cover and management

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Keywords: water erosion, runoff plots, alluvia, steep slopes, winter crops.

ABSTRACT

Soil erosion is one of the most important forms of soil degradation along with soil compaction, low organic matter, and loss of soil structure, poor internal drainage, salinisation, and soil acidity problems. Soil erosion is a naturally occurring process on all lands. In the mean time, soil erosion is also a result of anthropogenic activities, in excess of accepted rates of natural soil formation, causing a deterioration or loss of one or more soil functions, mainly its fertility. As it is known, a good status of land cover has an important role in reducing of runoffs and soil loss in the torrential agricultural watersheds. The effectiveness of land cover in reducing soil erosion depends upon the plants' density, height and continuity of the canopy. The paper presents some of the main findings of a study carried out at the Aldeni/Buzău Research Station on Soil Erosion and the adjacent torrential watersheds, concerning soil loss, mainly under different crops and climatic conditions. There were taken into account both cultivated and spontaneous vegetation, main crops as well as orchards and vineyards. Based on the long time field measurements conducted on the runoff plots, in the period 1993-2010, the role of the vegetation and crop factor from the USLE erosion model were checked. Also, some correlations were established between soil losses on different slope steepness.

Validation of procedures for extraction of fat from food and cleanup of extracts, in order to determine dioxins and furans content

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Keywords: extraction, quantification standard, cleanup, egg, oil

ABSTRACT

In this paper are presented results of the performed researches in order to validate procedures for extraction of fat from food and cleaning of extracts for determination of dioxins and furans content. Within experiments there were used two food matrices: oil and eggs. In order to validate procedure for extraction of fat from eggs and of it for cleanup of extracts from eggs and oil, there were used mixtures of standards of dioxins and furans labeled with ^{13}C (*standards for verification of extraction efficiency–S6 and quantification standards–S7).*

Fat extraction from eggs was achieved in much more steps with organic solvents (ethyl alcohol HPLC grade (99.7%, v/v), diethyl ether pico grade, n–hexane pico grade). Extracts cleanup was achieved on multiple columns, using different absorption materials (acid silica gel, aluminium oxide, florisil activated with ultrapure water). Concentration of cleaned extract was achieved under nitrogen flow, at 40ºC and pressure 5 psi, about 15 -18 minutes.

Separation, identification and quantification of different compound PCDDs/PCDFs were achieved with complex equipment: *System of two high resolution gas chromatograph in combination with high resolution mass spectrometer*.

Within the performed experiments, in case of standard S6 recovery was in the range 83.67% - 88.67%, and in case of standard S7 recovery was in the range: 56.83% - 99%.

The influence of Reldan 40EC and Actara 25WG insecticides upon gall-bladder structure in *Rana* (*Pelophylax*) *ridibunda*

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Keywords: chloropyrifos-methyl, thiamethoxame, gall-bladder, epithelial metaplasia

ABSTRACT

The histopathology of Reldan 40EC and Actara 25WG insecticide, on the gall-bladder in frog *Rana* (*Pelophylax*) *ri dibunda*, which is one of Romanian major frog species, were determined by light microscopy. The frogs were experimentally exposed to sub-lethal concentrations (0.01ml chloropyrifos-methyl/g body weight and 0.5mg thiamethoxame/g body weight) of these insecticides for 3 weeks at two thermic levels (4-6˚C and 22-24˚C). The toxic was administered by intraperitoneal shots, one shot every two days, in a scheme of 3 weeks. Tissues were normal in the control group. In both toxic substances investigated, one can notice the epithelial metaplasia in response to the harmful action of the toxic and the presence of leukocyte infiltrations at its base. The toxic effects of the two insecticides are more pronounced at the temperature of 22-24˚C, probably due to the more intensive metabolism of poikilotherms at this temperature. These pesticides cause morphological changes in the gall-bladder dealing especially with the covering epithelium.

Controlled cultivation of edible mushrooms on lignocellulosic wastes

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Keywords: edible mushrooms, semi-solid state cultivation, winery and vine wastes

ABSTRACT

The main aim of this work was focused on testing new practical procedures in order to optimize the efficiency of edible mushrooms cultivation by enhancing their fruit body formation during the semi-solid state cultivation on lignocellulosic wastes such as winery and vineyard wastes. According to this purpose, two mushroom species of Basidiomycetes, namely *Lentinus edodes* as well as *Pleurotus ostreatus* were used as pure mushroom cultures in experiments. The experiments of inoculum preparation were set up under the following conditions: constant temperature, 23°C; agitation speed, 90-120 rev min^{-1}; pH level, 5.0–6.0. All mycelia mushroom cultures were incubated for 120–168 h. In the next stage of experiments, the culture composts for mushroom growing were prepared from the lignocellulosic wastes as vineyard cuttings and marc of grapes in order to be used as substrata in mycelia development and fruit body formation. The tested culture variants were monitored continuously to keep constant the temperature during the incubation as well as air humidity, air pressure and a balanced ration of the molecular oxygen and carbon dioxide. In every mushroom culture cycle all the physical and chemical parameters that could influence the mycelia growing as well as fruit body formation of *L. edodes* and *P. ostreatus* were compared. In the final stage, the mushroom fruit bodies were harvested and weighted the results showing the percentage of 40-50% from the culture media weight.

Characterization of soil chemical parameters at *Arnica montana L.*

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Keywords: *Arnica montana*, soil, parameters, proprieties

ABSTRACT

According to the Red List of higher plants from the Romanian flora, this species is considered vulnerable and rare. *Arnica montana* is a long-lived perennial species, whose distribution is restricted to Europe. Formerly, *A. montana* was a common plant of nutrient-poor grasslands and dry heathlands. Research on soil analysis is part of the theme project called "Chorology study of the flora sozological categories Arges county to restore endangered by conventional methods of breeding and biotechnology". Analysis performed consisted in determining soil pH, hydrolytic acidity (HA), cation exchange bases sum (BC), total cation exchange capacity (CEC), cation saturation level (BS). Soil samples of the random selected plots have been analysed at a laboratory of Soil Science from University of Pitesti. The results of pH soil of *Arnica montana* species are part from strong soil acid reaction category. The average result of base cations was 12.42 meq/100 g. Results will be used to achieve a nutrient mixture on the propagation of rare medicinal species.

Geographic and climatic conditions specific to Urziceni area correlated with the biological monitoring as method of studying the pollution level of an area

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Keywords: witness sample, lichen indicator, transplanted bioindicators, micobiont, determinator

ABSTRACT

The urbanization and the industrialization have an influence on the natural environment, the air, sublayer, affecting and making lean the diversity of lichens species. The morphologic particularities of lichens are directly influenced by the natural conditions specific to the human presence. Thus, away from the city, where there are better living natural conditions for lichens, one can find various species having lamellar and other types of thalluses.

Theoretical and experimental aspects of determining bruise tissue volume resulting from impact apples with a hard surface

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Keywords: injuries, impact force, Golden Delicious, Jonathan

ABSTRACT

Keeping commercial quality of fruit is a priority in the processes of harvesting, handling, sorting and packing. More than 30% of Golden Delicious apples are affected by these processes. These lesions cause reduced quality and lower commercial value of fruit. Impact between fruit or fruit between storage systems, packaging is a major cause of occurrence of injuries. Injuries caused by the impact loading depends on each fruit tissue structure. Dense tissue, with a low volume of air-filled interstitial space, is susceptible to deep bruises that are typically not visible at the skin surface and will often develop internal cone-shaped and radial fractures when impacted. The research followed by analytical determination of tissue bruise volume based on the values of impact force, so the height of fall on a hard surface.

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