UNIVERSITATEA DE ŞTIINŢE AGRONOMICE
ŞI MEDICINĂ VETERINARĂ BUCUREŞTI

LUCRĂRI ŞTIINŢIFICE

SERIA B - LIII - 2009

HORTICULTURĂ

MINISTRY OF EDUCATION, RESEARCH AND INNOVATION
UNIVERSITY OF AGRONOMIC SCIENCES AND VETERINARY MEDICINE
BUCHAREST

SCIENTIFICAL PAPERS

SERIE B
LIII
2009

HORTICULTURE

INVEL Multimedia

Scientifical papers, USAMVB Serie B Horticulture	Vol. LIII	p. 1-775	Bucharest	2009

MINISTERUL EDUCAȚIEI, CERCETĂRII ŞI INOVĂRII
Universitatea de Ştiințe Agronomice şi Medicină Veterinară Bucureşti

Tehnoredactare: SC INVEL-Multimedia SRL
Maria SCURTU

ISSN 1222-5312

TABLE OF CONTENTS

PLENARY SESSION

VEGETABLE GROWING

ORNAMENTAL PLANT

LANDSCAPE ARCHITECTURE

FRUIT GROWING&TECHNOLOGY

VITICULTURE&OENOLOGY

BOTANY & PHYSIOLOGY

OTHER FIELDS

PLENARY SESSION

Kiwifruit, the fruit of XX^{-th} Century

Fl. Stănică
USAMV Bucharest

Keywords: *Actinidia arguta*, *Actinidia chinensis*, *Actinidia deliciosa*, 'Hayward', 'Hort16A', history, Production, plant description, varieties

ABSTRACT

Kiwifruit is a recent edible fruit diffused on the international market after 1950's. Being first time described more than 150 years before (1847), it was promoted by New Zealand that was for many years the most important producer. Nowadays Italy has the biggest kiwifruit production, but recently China enlarged the cultivated area. The most important kiwifruit species, here described: *Actinidia deliciosa*, *Actinidia chinensis*, *Actinidia arguta* have conquered step by step the market thru varieties as Hayward, Zespri Gold, Jintao, etc. Having a rich diversity of species and taxa Actinidia genus, offers to breeders good prospective for the future.

VEGETABLE GROWING

“In vitro” culture – research tools always current

Cornelia Atanasiu, Nicolae Atanasiu

Keywords: phytotron, meristems culture

ABSTRACT

The use of meristems „in vitro” knew a great spread in practice for obtaining planting material without viruses and other pathogen agents. Through „in vitro” multiplication were obtained information regarding some lines, varieties, species value in a very short time.

Water source management for cultivated tomatoes on different substrates in glasshouse - solarium

N. Atanasiu, D. Ghițescu, Mileva Chirică Barbu, Gh. Câmpeanu
Faculty of Horticulture – USAMV Bucharest

Keywords: tomatoes, water/nutritive solution consumptions, unconventional substrates

ABSTRACT

In Romanian specialty literature, the water consumptions are measured in mc/ha, without being established a precise rapport between those and productions. In the actual context, when the water for irrigation becomes a very hard to be assured and more expensive source, the economical use of it is a imperative request. A more efficient irrigating water use is realized in unconventional cultures, for which the water consumptions necessary for one tomatoes kilo are smaller than the specific one for cultivars on soil. This work paper presents water consumptions experimental determined for tomatoes cultures realized on unconventional substrates, in glasshouse/solarium.

Research and preliminary results on coconut substrate (coir) use to the tomatoes planted in cool greenhouses

N. Atanasiu, Mileva Chirica Barbu, Gh. Campeanu, C. Ardelean, F.C. Iacob
Department of Vegetable – USAMV Bucharest

Keywords: tomato, cold greenhouses, peat, coconut substrate.

ABSTRACT

This paper presents the results of production recorded in tomatoes grown in cold greenhouses on organic substrates (such as peat and coconut) and ground. By water and mineral nutrition of these crops was provided by fertirrigation, applying nutrients in open system solutions to variants grown on two organic substrates. Production results demonstrated qualities of coconut substrate which is a renewable material, whose production does not negative influence environment.

Study on lipid composition and energy potential of cardon and artichokes seeds

Eleni Balomenou
Department of Vegetable, USAMV Bucharest

Keywords*:* *Cynara cardunculus, Cynara scolimus*, artichoke and cardon seeds, lipid content

INTRODUCTION

Lately, the worldwide and European research aimed to use the cardon as energy plant, especially the seeds, but also the biomass serving as feedstock for obtaining biodiesel. The thermogenic power of wild artichokes oscillates between 14.53 MJ/kg dry weights and 24.73 MJ/kg dry weights of seed.

The seeds contain oil in quantities large enough (25%). Of the total biomass, approximately 10% is represented by the seeds. In Greece and Spain is expected in the future the use of seeds for extraction of bio-oil in order to obtain biodiesel. This will be used in the production of thermic and electric power (*** Rev. Agricon Ellas, Gebhardt, R., 2001).

This paper presents the results of a study on lipid composition and energy potential of the seeds of cardon and artichokes, as an indicator of their energy potential.

Economic efficiency of onion crop as effect of the application of various protection complexes for disease and pest control

Alexandra Becherescu
USAMVB Timişoara
alexandra_becherescu@yahoo.com

Keywords: onion yield, treatments, economic efficiency, cost

ABSTRACT

The analysis of crop efficiency studies, besides several factors with direct influence on profit (the quantitative and qualitative yield level, the mean sale price and consequently the incomes obtained, etc.), the structure of expenses, in order to establish which of these elements determines decisively the profit dimension, in terms of dimension, but especially with its influence on the application or not of some technological works or operations. In this situation, one of the structural elements of expenses is represented by the cost of the treatments applied in the onion crop. The influence exerted by these treatments on yield, in terms of quantity, per variants of the protection complexes applied, shows their efficiency, which will be retrieved in the profit achieved and in the differentiated profitableness rate.

The accumulation of pigments in the tomatoes fruits

P.M. Brezeanu
Sere Pipera Bucureşti

Keywords: carotene, lycopene, phenophase, culture cycle

ABSTRACT

The tomatoes fruits are consumed fresh or canned and are very famous for their flavour, and for their rich content in ascorbic acid. The analyzed physiologic indices were selected due to the importance that they have in the appreciation of their commercial quality. These indices are also vital for the evaluation of the fruit's maturity degree, their colour being important for the consumer's preferences.

The study of analog variants for mating disruption pest, cabbage moth

Maria Călin[1], Maria Feneşan[2], Tina Oana Cristea[1], Silvia Ambăruş[1], D.I. Avasiloaiei[1]
[1]Vegetable Research and Development Station Bacău
sclbac@legumebac.ro
[2]"Raluca Ripan" Institute for Research in Chemistry Cluj-Napoca

Keywords: Brassica, pheromone, noctuidae

ABSTRACT

The experimentations were accomplished at Vegetable Research and Development Station Bacău, during 2008-2009. In 2008, the hard infestation of eggs with *Trichograma evanescens* Westw from generations 1 and 2 determined a low attack degree (GA%) of 11,3% in generation 1 (over the economic damage threat attack (EDTA) and 2,1% in generation II (under EDTA). In 2009 the dispensers with analogue pheromones, for mating disruption, variant C4 were experimented in the autumn cabbage crop, in the second generation of cabbage moth. In conditions of a low population of *Mamestra brassicae* L., in the un-treated control a higher number of eggs (with 30.7% more, comparing with the variant Analog C4) were laid down. The percentage of larva apparition of cabbage moth was higher at the control variant - 67%, comparatively with 14,5% in variant Analog C4. As a result, the frequency of attack (AF%) surpassed the economic damage threat attack (EDTA) in control variant, its value being 11,9%. In variant Analog C4 the frequency of attack AF% was below the economic damage threat attack (EDTA), respectively 2,4%.

Ecological products obtained from plants used as pesticides used in vegetables culture (*Solanaceae Family*)

Elena Catana[1], Gh. Campeanu[2], N. Atanasiu[2], Gabriela Neata[2], Vasilica Zaharachescu[2]
[1]Oficiul Judetean de Consultanta Teleorman
elenacatana2009@yahoo.com
[2]Faculty of Horticulture - USAMV Bucharest

Keywords: ecological agriculture, bio food, durable agriculture

ABSTRACT

The paper presents the problems regarding the bioaccumulation of chemical products in food and environment, maintaining the genetically diversity of agroecosystems, obtaining vegetables with good gustative and nutritive qualities. Because of the applying of plants mixtures it could be observed a vigorously development of the cultivated vegetables. Also, the preventive use of these mixtures determined a superior resistance of the plants comparatively with control and an increase of the crop with 18%.

Assessment of accumulation potential of nitrates in leafy vegetables, grown in protected environments

Luminița Catană[1], Monica Catană[1], Liliana Bădulescu[2], Mioara Negoiță[1], Enuța Iorga[1], V. Ionescu[1], Alina Bâlea[1], Floarea Burnichi[3]
[1]Institute of Food Bioresources
lumi_catana@yahoo.co.uk
[2]University of Agronomic Sciences and Veterinary Medicine Bucharest
[3]Vegetable Research and Development Plant for Horticulture Buzau

Keywords: spinach, lettuce, fertilization, nitrates

ABSTRACT

In this paper are presented the results of performed researches for to determine the accumulation potential of nitrates in lettuce and spinach, grown within protected environments, depending on the applied fertilization level. In the culture technology of lettuce and spinach, they were applied the following fertilization variants (fertilizer being ammonium nitrate with 33% nitrogen): V1 = 0 kg nitrogen/ha; V2 = 25 kg nitrogen/ha; V3 = 50 kg nitrogen/ha; V4 = 75 kg nitrogen/ha; V5 = 100 kg nitrogen/ha. For each fertilization variant, they were realised 4 repetitions. For determination of accumulation potential of nitrates in lettuce and spinach cultivated within protected environments, it was used an enzymatic method. Lettuce, *Grația* variety, has a high accumulation potential of nitrates, in the range 1931.46 mg NO_3^-/kg – 3159.03 mg NO_3^-/kg, and spinach, *Românesc* variety, also has a high accumulation potential of nitrates, in the range: 1636.76 mg NO_3^-/kg – 2575.86 mg NO_3^-/kg.

Influence of fertilization treatments on nitrates content of some vegetable species cultivated in greehouses and solars

Luminița Catană[1], Monica Catană[1], Liliana Bădulescu[2], Mioara Negoiță[1], Enuța Iorga[1], V. Ionescu[1], Alina Bâlea[1], Floarea Burnichi[3]
[1]Institute of Food Bioresources
lumi_catana@yahoo.co.uk
[2]University of Agronomic Sciences and Veterinary Medicine Bucharest
[3]Vegetable Research and Development Plant for Horticulture Buzău

Keywords: tomatoes, cucumbers, fertilization, nitrates

ABSTRACT

In this paper are presented the results of performed researches, for to establish the influence of fertilization treatments on nitrates content of cucumbers cultivated within greenhouses and of tomatoes cultivated within solar. In the culture technology of cucumbers and tomatoes, they were applied the following fertilization variants (fertilizer being ammonium nitrate with 33% nitrogen): V1 = 0 kg nitrogen/ha; V2 = 100 kg nitrogen/ha; V3 = 200 kg nitrogen/ha; V4 = 300 kg nitrogen/ha; V5 = 400 kg nitrogen/ha. For to establish the accumulation potential of nitrates in cucumbers and tomatoes cultivated within protected environments, it was used an enzymatic method. Cucumbers, *Triumf F1* hybrid, obtained in culture within protected environments, through application of 5 fertilization variants, have an average accumulation potential of nitrates in the range: 53.35 mg NO_3^-/kg – 222.44 mg NO_3^-/kg. Nitrates content of tomatoes cherry type, *Capriciu* variety, and *Siriana F1* hybrid, cultivated within solar (through application of 5 fertilization variants), is very low, being in the range 3.54 – 12.33 mg/kg.

Liriomyza trifolii (Diptera: Agromyzidae) - some morphological characters for pest identification

Mirela Cean, Mihaela Coman
Central Laboratory for Phytosanitary Quarantine
mirela.cean@lccf.ro, mihaela.coman@lccf.ro

Keywords: Agromyzidae, American serpentine leafminer, quarantine pest, identification

ABSTRACT

The American serpentine leafminer *Liriomyza trifolii* Burgess 1880 is known as one of the most economically pest of ornamental and vegetable crops in many regions of the world. Also, this pest was recorded on weeds (Minkenberg, 1986). The larvae feed in leaf mesophyl tissue producing long and serpentine tunnels inside of leaflets which may cause reductions in crop values or yield (Spencer, 1973). In Romania this polyphagous pest is regulated as quarantine pests as well as other leafminers species: *Liriomyza sativae* and *Liriomyza huidobrensis*. According to data providing by Romanian Faunistic Checklist (2007) in Romania there are 12 species of Liriomyza. Due to the differences in phytosanitary measures applied to the leafminers detected on imported plant material or in the fields it is important to have precise species identification.

Variability of the main characteristics in a Romanian-French bean variety *Alena* during the process of conservative selection

Maria Cenușă, Georgeta Negru, Ghe. Marinescu,V. Miron
Research Institute Development Vegetable and Flower Growing Vidra, Romania

Keywords: dwarf variety, midearly range, green pod, broad-elliptical section, neither threads

ABSTRACT

The research works were carried out to R.I.D.V.F.G. Vidra, during the 2002-2004 period, on the field of prebase seed to the French green bean culture. Biological material was represented by a new Romanian variety: *Alena.* The object of this study was obtaing of the prebase seed stock. For determing the variability of principal caracters of biological material were made the following biological measurements: number of pods per plant, pod length, pod width, the number of grains in the pod, weight of one thousand grains during the dry stage. There were calculated the arithmetic mean, standard deviation, variability coefficient for integrating them in the variability limits of principal characters studied. *Alena* belongs to the middle early group French bean (57 days from the sprouting date to the technological maturity of the pods), with green pods, middle length (13,3cm) and broad-elliptical section. The flowers are white. The dry grain is of medium to small in size, having a white colour.

Napomyza (Phytomyza) gymnostoma – a new pest of *Allium* plants in Romania

Mihaela Coman, Mirela Cean
Central Laboratory for Phytosanitary Quarantine
mihaela.coman@lccf.ro

Keywords: Agromyzidae, morphology, damages, spread, control

ABSTRACT

In spring 2007, an allium leafminer was recorded for the first time in non-commercial onion crops (Mirela Cean, 2007). Typical feeding symptoms were observed, caused by the mining behavior of larvae, producing the formation of descending galleries. The pest was identifying as *Napomyza* (*Phytomyza*) *gymnostoma Loew.* based on morphological characters of the adults. This leafminer is a pest of *Allium* spp., particularly leek, onion (bulb and spring), garlic, and chive and also a potential pest of ornamental *Allium* plants.

Induction of "in vitro" regeneration of tomato plants (*Lycopersicon Esculentum* Mill.) through hypocotyl and tip explants culture

Tina Oana Cristea[1], Silvica Ambăruş[1], Maria Călin[1], Maria Prisecaru[2], D.I. Avasiloaiei[1]
[1] Vegetable Research and Development Station Bacău
tinaoana@yahoo.com
[2] Faculty of Biology - University from Bacău

Keywords: kinetin, zeatin, organogenesis

ABSTRACT

Tomato (*Lycopersicon esculentum* Mill.) is a major vegetable crop that has a tremendous popularity, being cultivated in almost every country of the world either for fresh market or processing. Due to its economic worldwide and due to the present and future potential of improving the crop through molecular techniques, improvement in the efficiency of regeneration is expected to have a positive impact on transformation results. Also, extending the technology to a wider range of commercial cultivars will speed up the introgression of new economic characters into the tomato germplasm. The present article describes high-frequency shoot induction and regeneration from a number of tomato cultivars that led to the production of normal phenotype fertile plants. Many concentrations and combinations of growth regulators were used to define an efficient regeneration medium. The best reaction - direct bud formation was observed on explants cultured on MS medium added with KIN and IAA. The combination of zeatin with IAA also increased the percentage of organogenesis and the development of the explants.

Manufactured textile cover meant for plant protection in the cold season

Maria Dan[1], Emilia Visileanu[1], Iuliana Dumitrescu[1], Ana-Maria Mocioiu[1],
Hortensia Clara Radulescu[1], R. Radulescu[1],Viorica Luchian Lagunovschi[2]
[1]The National Research - Development Institute for Textile and Leather (INCDTP)
certex@ns.certex.ro
[2]Faculty of Horticulture - USAMV Bucharest
vluchian@hotmail.com

Keywords: plant development, textile composite, polyethylene, parameter, salad

ABSTRACT

INCDTP accomplished a new textile composite material for applications in horticulture, for plant protection (as manufactured cover) against cold and weathering, in the cold season. The CERTEX-C textile composite was entirely made of UV resistant polyethylene, as reinforced woven fabric and special formulated top and bottom laminated films. The functionality of the composite material and that of the manufactured cover, for plant protection against cold and weathering, was established at USAMV Bucharest, through experiments achieved under real utilization conditions, in field, in the cold season of 2008-2009, on two lettuce varieties (Withe Boston; Embrace). The positive evolution of the weekly measured agro-technological parameters (air and soil temperature, air humidity, light intensity, soil pH) and plant development parameters (average height, average leaf number, average plant mass) confirmed the functionality of the textile composite material, by comparison with the uncovered crops. The periodical direct observations of the manufactured cover during experimenting also confirmed their functionality, as material, structure, dimensions, in correlation with the plant dimensions, airing openings, zip closing system and revealed the necessary modification of the cover (side access openings) and of the sustaining system (fixing straps).

The Cropmax ecological biofertilizer influence on the production of solarium grown cucumbers

Maria Dinu[1], P. Savescu[1], Gabriela Mihaela Bita[2], Valeria Ghivercea[3]
[1] Faculty of Horticulture, University of Craiova
dinumariana@hotmail.com
[2] Faculty of Chemistry, University of Craiova
[3] Technical College Food Industry Craiova

Keywords: biofertilizer, cucumbers, sun, productions

ABSTRACT

Obtaining vegetables in biological system allows for several aspects including: the use of some solariums with a very high biological potential the use of and ecological biostimulators for a better protection of the environment and for the achievement of good quality productions with high sensorial properties. The biological material used in this study consisted of three hybrids of cucumbers: Mathilde F1, Bianca F1 and Motiva F1 which following the Cropmax treatment, recorded early production increases between 11,1-12,9% in the treated version and between 6,6-10,4% in the entire production.

Study regarding the influence of soil multch at brocolli culture grown in unwarm greenhouse during september-october period

Elena Maria Drăghici
Department of vegetable crops and the ornamental plants, Faculty of Horticulture Bucharest

Keywords: broccoli, mulch, fertilized

ABSTRACT

The study was realised as part of the didactic field of vegetable greenhouses at Faculty of Horticulture, Bucharest. The Calabrese Precocious type was cultivated in unwarm greenhouse. The study contained 9 experimental variants, 4 unmulched variants and 4 variants mulched with black biodegradable leaf. Both Unmulched and mulched variants were fertilised at planting with Agroblen in doses of 15g (V2 şi V6), 20 g (V3 şi V7), 25 g (V4 şi V8) şi 30 g (V5 şi V9). The obtained results showed that there were differences between the mulched experimental variants and those Unmulched, the total productions being bigger in case of the mulched and fertilised variants.

Preliminary study regarding the effect of fertilization with organic fertilizer B5A on early and total crop of tomatoes

Elena Maria Draghici[1], Gabriela Neață[1], Gheorghița Hoza[1], Guvenel Umut[2]
[1]Faculty of Horticulture, Bucharest, Romania
[2]Elit Engineering, Turcia

Keywords: organic fertilization, ecological product, tomato

ABSTRACT

Preliminary study was made at the Vegetables Department from the Horticultural Faculty at University of Agronomical Sciences and Veterinary Medicine Bucharest in the period June-September 2009. We test the ecological product, B5A, applied on the soil with three days till planted and in the vegetation period after 15 days from transplanting. We had remark differences regarding the vegetative growth in all variants were applied the ecological product. Also, the number of fruit formed on the plant was biggest comparatively with Control.

The partial studies regarding the production of the carrot mother plants with different development stage

C.N. Florea[1], Elena Ştefănescu[2]
[1]Vegetable Research and Development Station Buzău
[2]Research and Development Institute for Vegetable and Flower Growing Vidra

Keywords: variety, periods, weight, mother plants

ABSTRACT

The studies were part from a bifactorial experiment (A – varieties and B – period), in the process of carrot mother plants production with different development level. The bifactorial experiment was a 6x4x4 type, meaning: 6 varieties (Uriaş de Berlicum, Nantes, Nantes Bantop, Chantenay Red Core, Chantenay, Danvers 126), 4 sowing crops (10, 20, 30 July and 9August) and 4 repetition stage (table 1). The influence of every factor (A, B) and as well as the influence of interaction between those two factors are distinctly significant regarding the weight of mother plants.

The phenophase study of one carrot range for obtaining production seed in the environmental condition at SCDL Buzău

C.N.Florea[1], Elena Ştefănescu[2]
[1]Vegetable Research and Development Station Buzău
[2]Research and Development Institute for Vegetable and Flower Growing Vidra

Keywords: mother plant, seed plants, vegetation period, biological phase

ABSTRACT

The studies established to every range phenological observations and determination regarding the period (days) and the average of the temperature degrees for every phenophase and also for vegetation period. The researches lasts two biological cycle "from seed to seed" specific for 6 different varieties, as shape, color, size and precociousness.

Influence of the methods of crop arrangement in protected field under the application of modern crop technologies on the productive potential of some watermelon hybrids

A. Horgoş[1], Alexandra Becherescu[1], D. Popa[1], Marcela Moţ[2], O. Ţîru[1]
USAMVB Timişoara
horgos_a@yahoo.com
[2]Asociaţia Familială, com. Şofronea, jud. Arad

Keywords: technology, field, crop, potential, seedling.

ABSTRACT

The field crop technology applied to watermelons, with its improvements, has become a „modernized crop technology in down tunnels of polyethylene foil", compared with the „improved classic crop technology". The methods of crop arrangement, important technological steps, influence dramatically the level, quality and earliness of yield. The simplest of them is the method of direct seeding in open field (classic field crop technology), in antithesis with the method of seeding below mulch of polyethylene foil, drip irrigation and fertirrigation (improved classic field crop technology). The method of crop arrangement through planting of seedling in open field, crop protection with down tunnels of PE foil, mulch of PE foil, drip irrigation and fertirrigation, represents the advantages of crop technology modernization. This work presents the influence exerted by the methods of crop arrangement on the productive potential of the hybrids studied.

Possibilities of growing tomatoes with minimum intervention on the ground

Gheorghița Hoza

Keywords: *bio-composite mulch, tomatoes, no-tillage system*

SUMMARY

Worldwide, particularly in the U.S. a new method is experimented that promotes vegetable cultivation in a "no-tillage" system offering the benefits of protecting the soil structure and reducing production costs. Studies in this direction had so far led to progress in crop quality, quantity and earliness.

This research aims at developing an alternative system of mulch for growing tomatoes. With the technology of growth in bio-composite mulch it is desired to overlap the benefits of mulch in vegetable growing with the advantages of a bioactive film. The objectives were: to develop a technology for obtaining bio-composite mulch (vegetal mulch with bioactive film), developing a technology for growing tomatoes in this alternative system of mulching, and perform studies on the multiple effects of alternative agriculture in the bio-composite mulch regarding tomato production and quality of crops.

Results reveal the role of the bio-composite mulch on tomatoes growth and fructification, thanks to the nutrients from its decomposition. Flower formation in inflorescences was very good to floret IV, after which there has been a setback due to high temperature. Per plant, were formed between 27,2 flowers to witness and 33,8 flowers to V5, which shows the combined influence of microorganisms used in the bio-composite layer of vetches mulch and bioactive film. The fructification percentage in all variations of mulch was higher than the reference group, being between 59,5% in V4 and 68,2% at V3, while for the reference group it was 58.5%. Regarding the fruits production, the best results were obtained in the V2, 10,4 kg/m^2, followed by V3 and V5 with more than 9 kg/m^2. Fruit production was lower in the reference group, as it was grown without mulch, reaching 6,4 kg/m^2.

Effect of culture technique upon pickling cucumber hybrids in solarium tunels in the Tărtăşeşti-Răcari area (Dâmbovița County)

F.C. Iacob, Gh. Campeanu, N. Atanasiu
University of Agronomic Sciences and Veterinary Medicine Bucharest, Romania

Keywords: *Cucumis sativus L.*, density, evaluation, production, quality.

ABSTRACT

The *Cucumis sativus* quality is highly influenced by the culture techniques and hibryds in solarium. Solarium experiment was conducted in 2009 using the next density: 48.000 plants/ha witch coresponde to row spacing 70 cm and 30 cm between plantes inside the row, grown for manual harvest. Profitability its directly linked to hibryd used, selling price and period of selling. On this experience we try to show the optimum density required to maximize the revenue. Results of this study suggest that hibryd Kybria have the bigest production at the density of 4.76 pl/sq.m, (48.000 pl/ha).

Researches regarding the possibility of reducing the disease attack and pests on tomatoes by protecting the crops with photoselective foils

Mali-Sanda Manole, Elena Dobrin, Ruxandra Ciofu
The University of Agronomic Sciences and Veterinary Medicine Bucharest, Romania
malismanole@yahoo.com

Keywords: cultivars, protection, photoselection, foil, attack

ABSTRACT

Through the experiences evolved, we searched and determined the care in solar tomato plant's response, by applying some modern technological sequences-the use of this technique for proctecting the crops of some photoselective foils which were anti-condense, with addition of UV and IR, produced in Romania– on a modern biofond, represented by two different assortment varietes-classic, Cindel F1 and cherry-type, the Cerise variety.

Enzymatic determination of nitrates content, in case of some vegetable species cultivated in the field

Mioara Negoiță[1], Luminița Catană[1], Monica Catană[1], Enuța Iorga[1],
Aurelia Dobrescu[2], V. Ionescu[1], Alina Bâlea[1], Floarea Burnichi[3]
[1]Institute of Food Bioresources Bucharest
mioaranegoita@yahoo.com
[2]University of Agronomic Sciences and Veterinary Medicine Bucharest
[3]Vegetable Research and Development Plant for Horticulture Buzău

Keywords: onion, bell peppers, carrots, cabbage, fertilization

ABSTRACT

In this paper are presented results of the performed researches, for to establish the influence of fertilization treatments on nitrates content of some vegetable species, cultivated in the field: cabbage, carrots, bell peppers and onion. In the culture technology of these vegetables, they were applied the following fertilization variants (fertilizer being ammonium nitrate with 33% nitrogen): V1 = 0 kg nitrogen/ha; V2 = 100 kg nitrogen/ha; V3 = 200 kg nitrogen/ha; V4 = 400 kg nitrogen/ha; V5 = 800 kg nitrogen/ha. For to establish the accumulation potential of nitrates in vegetables cultivated in the field, it was used an enzymatic method. In the case of the high fertilization level, cabbage has the higher nitrates content (698.19 mg NO_3^-/kg), and bell peppers the lower nitrates content (61.70 19 mg NO_3^-/kg).

Batat use for achievement of some food products, with high nutritional value, destined to individuals with gluten intolerance

Mioara Negoiță[1], Monica Catană[1], Luminița Catană[1], Enuța Iorga[1],
Liliana Bădulescu[2], Gabriela Lilios[3], V. Ionescu[1]
[1]Institute of Food Bioresources
mioaranegoita@yahoo.com
[2]University of Agronomic Sciences and Veterinary Medicine Bucharest
[3]University Ovidius, Constanța

Keywords: batat, gluten-free bread, gluten-free cookies, iron

ABSTRACT

In this paper are presented the results of performed researches for achievement of some gluten-free products, competitive on the internal market and comparable with products from other countries, optimized from nutritional point of view, without alergen factor, but containing the necessary nutritive principles for correction of malabsorptive deficiencies, done by disease, reponding thus to the consumer special requirements. For the increasing of products nutritional value it was used batat piuree or it was done iron fortification (fortification agent – ferrous sulfate). The achieved gluten-free bakery products excell through sensorial characteristics and nutritional value.

Technological elements for enhancing sweet corn earliness

F. Orosz[1,2] , Katalin Slezák[1]
[1]Department of Vegetable and Mushroom Growing, Faculty of Horticultural Science,
„Corvinus" University of Budapest
[2] Department of Horticulture, Faculty of Technical and Human Sciences,
"Sapientia" Hungarian University of Transylvania Tîrgu Mureş
ferenc.orosz@uni-corvinus.hu

Keywords: Sweet corn, growing season, earliness, propagation method, propagation time

ABSTRACT

In our trial we compared the effect of propagation method and time on the growing season, yield and some valuable properties of sweet corn. The following technological variations were compared with the help of the variety Spirit (normal sweet, very early ripening): 1. transplanted plants with floating row cover (with 2 planting dates) 2. transplanted plants with no row cover 3. direct seeded plants with floating row cover (with 2 sowing dates) 4. direct seeded plants with no row cover. The application of direct seeding and floating row cover increased the earliness by 2 days in respect of germination and by 4 days in respect of the total growing period as compared to the treatment with no row cover. The 21 day transplant growing period reduced the growing period by 14 to 21 days. Earliness had a negative influence on fruit size, but this diminishment was not so great as to affect marketable ear numbers. Covering the seedlings in the early season was clearly beneficial, as the floating row cover provided protection for plants against lately spring mild frost. The combination of seedling grown plants and floating row cover resulted in a 28 day earlier harvest as compared to the traditional technology.

Contribution for onion seed production technology improvement

N. Popandron
Research-Development Institut for Vegetables and Flowers Vidra, Romania
inclf@mediasat.ro

Keywords: seed, density, fertilizers, quality, cultivar

ABSTRACT

One important aspect in onion cultivation is the seed production.

The onion seed production level depends on the cultivar (for some cultivars the obtained quantities are big, for others are small), as well as on the applied technology, in which case an important role is played by the determination of the best doses and periods of administration of the fertilizers.

Following the performed experiments, two inland varieties being used (Briliant and Delicioasa), two densities and three fertilization variety, very interesting results have been obtained. We came with the conclusion that the onion seed production depends on the used cultivar, on the density and on the quantity of azoth inflicted by the implementation of the chemical fertilizers. The biggest production has been obtained for the density of 138 thousand plants/ha for the Briliant variety (830 kg./ha), while for the Delicioasa variety the biggest has been of only 363 kg./ha. The differences between the two fertilization varieties have not been big. There have been obtained production differences between 115 kg./ha and 150 kg./ha between the two experimented densities.

Comparative study of some Bulgarian tomato cultivars under high plastic tunnels

Gabriela Şovărel, M. Costache, V. Lăcătuş
Research Development Institute for Vegetable and Flower Growing Vidra, Ilfov

Keywords: *Lycopersicon esculentum*, high plastic tunnels, cultivar

ABSTRACT

The research carried out in 2009 at the Research Development Institute for Vegetable and Flower Growing Vidra. The purpose of this experiment was to study the behavior of some tomatoes cultivars (Balkan F1, Jar F1, Kom F1, Prekos F1 and Nazareth F1) from Research Institute for Vegetable Growing Plovdiv, cultivated under high plastic tunnels. The best results were gave Prekos F1, Kom F1 and Nazareth F1 hybrids with a yield higher than 75t/ha.

Improved methods of obtaining lettuce and tomato seedlings

Florentina Stanciu, V. Popescu, Elena Dobrin, Liliana Bădulescu
Department of Vegetable Crops, Faculty of Floriculture and Landscape Architecture
University of Agronomical Scinces and Veterinary Medicine Bucharest
floristanciu@gmail.com

Keywords: tomato seedlings, alveolar pallet, Jiffy pot, Jiffy 7

ABSTRACT

Improving the methods of obtaining vegetable seedlings is a necessity for the growth of their quality.

The present research presents the results obtained in 2008 within an experience with tomatoes. As biological material there has been used the tomato hybrid Cristal F1. The variants which resulted were the fooling: V1Mt -5/5cm nutritive cubes; V2 - 7/4/6.5cm plastic pot; V3 – 5/5cm alveoli pallets, V4 - 4/7.5cm Jiffy seven, V5 - 3.8/4cm Jiffy seven, V6 - 7/4/8cm Jiffy pot.

At the moment of planting there were differences between the variants, the seedlings produced in larger pots having superior phenological and physiological indexes.

Kristin – a new tomato variety obtained at SCDL Buzău

C. Vînătoru, E. Neicu
Vegetable Research – Development Station Buzău, Buzău, Romania

Keywords: tomatoes, amelioration, segregation, genotype,

ABSTRACT

The necessity to enrich the inland tomato variety with special destination (fresh consume, industrialization, juice, paste etc.) leaded to the initiation of new research themes with precise amelioration objectives. Even from the establishment, the institution showed a great interest in what it concerns the amelioration of this specie. In the same time with the initiation of these research themes, that started in 1996 in collaboration with ICDLF Vidra, besides the valuable germoplasma base detained by the institution, there were bought new genotypes. Thus, our institution detains nowadays the most rich and valuable germoplasma base for tomato in our country. Nowadays S.C.D.L. Buzău collection field has over 200 tomato cultivars de, and the work field has 32 Sp cultivars and 23 SP which are in an advanced stage of amelioration. After the researches made, there was obtained and homologated Kristin – a tomato variety used for industrialization and appreciated as well by cultivators and processators.

Bush bean variety with yellow pod “Ioana” obtained at SCDL Buzău

C. Vînătoru, E. Neicu
Vegetable Research – Development Station Buzău, Romania

Keywords: bush bean, wax bean – yellow, variety, line, genetic potential

ABSTRACT

In order to vary the bean variety with valuable Romanian creation, there has been improved a new amelioration strategy for these species. As a result of the amelioration works that took place in the Amelioration Laboratory at S.C.D.L. Buzău, in 2006 was obtained the “Ioana” bean variety, that represents a part of the bush beans with an yellow and extra soft pod.

The researches that were done mark out the high potential of yield and quality of “Ioana” variety (over 16t/ha), surpassing the control variant, Maxidor with 8,3t/ha.

Because of its proved plasticity, this variety can be successfully cultivated all over the country, in principal culture, and as well in successive culture, being an excellent precursory culture for most of the vegetable cultures.

The exceptional genetical habit detained by this variety offers the possibility of being cultivated as well in an ecological system, but also a great technological flexibility according to the machine system and the cultivators possibilities.

Research concerning the influence of the hybrid, the density and the module of shading in the summer crops of broccoli

Roxana Zăvoianu, V. Popescu
Faculty of Horticulture, USAMV Bucharest

Keywords: *Brassica oleracea L., convar. botrytis L. var. italica, Plench (1808),* shading, space of nutrition, production, hybrids

ABSTRACT

Our research has followed the behaviour of three hybrids of broccoli of the summer crops, in tunnels covered with shading net of different colours, in comparison with an unshaded witness, and under the influence of four variants of densities. The biologic material consisted of the hybrids Chevalier, Milady and Belstar. The tunnels were covered with a dark green shading net, a green shading net with white stripes and a light green shading net, while the witness remained uncovered. We used several distances of planting: 57142plants/ha (70/25cm), 79365plants/ha (70/18cm), 40816plants/ha (70/35cm) and for the witness variant 31746plants/ha (70/45cm). The biggest mean main productions were obtained for the hybrid Chevalier, 28,717 t/ha (in the tunnel shaded with dark green net), 28,339 t/ha (the tunnel shaded with the green net with white stripes), 27,786 t/ha (the tunnel shaded with light green net), 22,309 t/ha (the unshaded witness), followed by the hybrid Belstar with 27,343 t/ha (the tunnel shaded with dark green net), 26,957 t/ha (the tunnel shaded with the green net with white stripes), 26,225 t/ha (the tunnel shaded with light green net), 20,499 t/ha (the unshaded witness) and Milady with 25,644 t/ha (the tunnel shaded with dark green net), 25,311 t/ha (the tunnel shaded with green net with white stripes), 24,580 t/ha (the tunnel shaded with light green net), 19,319 t/ha (the unshaded witness). The mean main production (t/ha) of the three hybrids cultivated in the dark green shaded tunnel was the biggest (27,235 t/ha), followed by the tunnel shaded with green net with white stripes (26,869 t/ha) and, finally, the light green shaded tunnel (26,197 t/ha), while the unshaded witness had the smallest production (20,709 t/ha).

ORNAMENTAL PLANT

The use of ornamental grasses in designing green spaces

Maria Băla, D.N. Berecici, D. Ordodi
Department of Horticulture, USAMVB Timişoara, România

Keywords: weeds, decorating, gardens, landscape

ABSTRACT

Ornamental grasses are highly robust plants, fussy and easy to grow. The species and varieties used for decorating gardens, yards and parks have been chosen for their beauty and for the great adaptation of different physical and ecological conditions that vary. All the grasses, both small and tall ones have smooth stalks that don't have woody structure as trees and shrubs. That's why most of the grasses get dry over the winter and during spring they regenerate from the root buds. For the research there were selected the most decorating and used ornamental weeds. So, for shady gardens different species of Carex, Luzula and Sesleria are best to use in small groups of weeds or as focal points. It is also recommended to use them in small gardens. Wet soils, swamps and ponds are ideal for Gliceria maxima, Molinia caerulea and Scirpus as they love water. For sunny and dry areas, Festuca, Leymus and Sesleria are ideal as they thrive best in these conditions. Some ornamental weeds are perfect for growing in pots on a terrace as they are used in landscape designs as "star plants" for example Pennisetum, and others due to the colorful leafs and spikes can decorate all the year round (Miscanthus).

The behaviour of some new freesia varieties, cultivated in the conditions of a modern greenhouse at the didactic base of the Faculty of Horticulture and Forestry in Timişoara

D.N. Berecici, Maria Băla
Department of Horticulture, USAMVB Timişoara, România

Keywords: Blue Sky, Calgary, Purple Rain, Texas, Troubadur

ABSTRACT

A tradition among the flower growers, appreciated for the beauty and delicate and unique perfume, Freesia enjoys a continuously growing cultivated surfaces, so that today it is one of the most cultivated cut flower worldwide (place 7). The culture is relatively simple and the big production on unit area makes possible the full recovery of the investment and guaranteed profit. A priority is keeping and attracting for cultivation the valorous varieties, far superior to the old varieties, with a great virus resistance. In terms of the actual research I mention that 20 new varieties of Freesia were placed at the Didactic Base of the Faculty of Horticulture and Forestry in Timisoara, all of them taken in research but in the following I will present data taken from 5 of them: Blue Sky (blue), Calgary (white), Purple Rain (purple-fuchsia), Texas (yellow) and Troubadur (reddish - orange). Data was taken of the inflorescence length, number of flower bud in inflorescence and the diameter of the first 3 flowers in inflorescence. The results show that between these facts there isn't a very tight relation so the varieties with a big number of buds in inflorescence didn't default the biggest inflorescences.

Studies of vegetative multiplication of *Aucuba japonica* Thunb.

Erzsebet Buta, Maria Cantor, M. Buta
University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca
ebuta2008@yahoo.com

Keywords: peat, perlite, rooting, stem cutting

ABSTRACT

Aucuba is a genus with three species but the Flora of China accepts ten species (seven endemic), now placed in the family *Garryaceae*, although formerly classed in the *Aucubaceae* or *Cornaceae*. The name of this genus is derived from Japanese "aoki" means "blue-tree" because the original unvariegated wilds form of this shrub has blue leaves. The most popular cultivars are "Variegata", "Maculata", "Crassifolia", "Crotonifolia", "Dentata" "Goldiana"and "Picturata".

Some species are used medicinally in folk remedies. Japanese laurel (*Aucuba japonica*) is a shrub (1-2m) native to woods in lowland and mountains all over Japan and China. In rich forest soils of moist valleys, dense forests, thickets, by streams and near shaded moist rocks in China. The leaves are opposite, elliptic to ovate, 5-8 cm long and 2-5 cm wide. *Aucuba japonica* has separate male and female plants. The flowers are small, 4-8 mm diameter, with four purplish-brown petals; they are produced in clusters of 10-30 in a loose cyme. The fruit is a red berry with 1 cm diameter. Birds often avoid them.

The *Aucuba* propagation is performed by growing stem cuttings in spring or semiripe cuttings in summer (August) and also by sowing seeds in containers in a cold frame in autumn. Cuttings can make from sprout apex, from fragments with 1-2 knots and fragments with a single leaf (Șelaru, 2006). The rootedness takes 3-4 weeks to ensure that the temperature of 20-22°C and high relative humidity (Cantor, 2008). In our researches a study was conducted to determine the best rooting substrate (peat, perlite+peat and perlite) and cutting length (6cm and 12 cm) for vegetative propagation of *Aucuba* genus.

Selection of new Gladiolus hybrids at USAMV Cluj

Maria Cantor, Erszebet Buta, A. Zaharia
University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca
marcantor@yahoo.com

Keywords: breeding, cultivars, ornamental characteristics, corm

ABSTRACT

Low cost and ease of culture are reasons glads are popular today. Gladiolus can add an air of beauty to any room in the house. They can also be used in landscape designing, holiday and other activities as ornamental plants. The modern gladiolus cultivars offer a diversity of colours, shapes, and sizes available in few other flowering plants. It is cultivated in almost countries of the world where spring and summer conditions are favorable.

In the last period, in many countries the production value of gladiolus cut flower was increased. The cultivated area of new gladiolus cultivars will expand since gladiolus demand is increasing, encouraged by more stable production of high quality flowers.

This paper describes the new 6 *Gladiolus* hybrids (‘H9/10’, ‘H 12/10’, ‘H16/2’, ‘H 17/1’, ‘H215/5’, and ‘H514/1’) obtained at U.S.A.M.V. Cluj-Napoca, department Floriculture by breeding activity. These hybrids where observed in our Transylvanian behaviors and recorded for the following morpho-decorative characteristics: blooming time, colour of florets, plant height, spike length, number of florets per spike, media florets diameter and number of florets open in the same time.

In 2009 the hybrids H 215/5 were certified under the name ‘Coral Pasion’ and hybrids H 514/1 were certified under the name ‘Medina’ and the others hybrids following to be monitoring in comparative field and will be tested at ISTIS Bucharest for homologate.

Researches regarding the phenology of some allium species and cultivars in the condition of Craiova city

Constantina Ciurlin (Ghiță), Doina Anton, Carmen Nicu
Faculty of Horticulture, University of Craiova
ciurlin_c@yahoo.com

Keywords: rustic bulbous, umbellas, phenophases, the duration of the decoration

ABSTRACT

Allium gender comprises various species of rustic bulbous, also called geophytes, very interesting considering the decorative aspect. There are over 700 perennial and biennial species of Allium, with flowers disposed in inflorescences, umbella, spherical type (A. albopilosum, A. schubertii) or tassel type (A. molly, A. oreophilum). The phenology of some species and cultivars' hybrids of Allium gender was studied in the ecological conditions of Craiova city during 2008-2009 period. The biological material came from Holland and it was made up of four species: A. albopilosum (syn. cristophii), A. schubertii, A. oreophilum, A. molly and three cultivars: A. 'Mars', A. 'Mount Everest' (new hybrid), and A. 'Purple Sensation'. The main phenophases (emergence, the appearance of the flower bud, the coloration of the bud), the period of flowering and the decorative characteristics of Allium species and cultivars were studied. According to the decorative characteristics, it was established the duration of the decorative period and the means of usage of the studied species and cultivars. The decorative Allium is easy to be cultivated and it becomes perennial very fast because of the various and large number of species and cultivars, distinctive through the colour of the inflorescences (umbrellas) and height. These species of geophytes plants of Allium gender are less known and used by floricultors in our area. That is why in this paper there are presented the results of the research regarding the phenology of some species and cultivars (new hybrids) of ornamental Allium in the cological conditions of Craiova city.

The determination of the decoration period regarding some species and cultivars of Tulip gender

Constantina Ciurlin (Ghiță), Doina Anton, Manuela Mandă
Faculty of Horticulture, University of Craiova
ciurlin_c@yahoo.com

Keywords: geophytes plants, species and cultivars, the decorative period

ABSTRACT

Tulips are one of the most important species of rustic bulbous known since the Persians (1200) because both the scientific name of *Tulipa* gender and the popular one of the tulip flower are originating from Persia. These beautiful decorative plants are geophytes, plants which have underground storage structures called 'bulbs'. The behavior of some species and cultivars of *Tulipa* gender was studied in the climatic conditions of Craiova city, during the period 2007-2009. The biological material came from Holland and it was made up of 3 species: *T. gesneriana, T. tarda (syn. dasystemon), T. turkestanica* and 4 cultivars: *T. greigii 'Quebec', T. viridiflora 'Hollywood Star', T. 'Heart's Delight' and T. 'Queen of the Night'*. There were studied the main phenophases (the spring, the appearance of the flower bud, the period of blooming), the morphological characteristics and the decorative qualities of the studied species and cultivars. The decoration period was established and recommendations were made regarding the way of use according to the decorative qualities. The rich and varied assortment of species and cultivars makes the tulip suitable for almost any kind of floral arrangement. Tulipa gender comprises perennial species of rustic bulbous which bloom at spring(March-April) and become part of some beautiful decorative combinations. There are used in the decoration of green spaces, in groups of plants on greenswards, and they can also be planted in flower spots, in forced cultures or for apartments decoration. Small size species with coloured flowers an be used in alpin spaces or in the foreground of mixt borders. But the tulip is mainly cultivated for simple bouquets or in combination with other spring flowers. During the last years, the competition on the bulb market has permanently grown, emphasizing the demand of flowers and bulbs of high quality in the majority of the European countries. In this paper are presented the results of the researches regarding the behaviour of some species and cultivars of Tulipa gender, in the ecological conditions of Craiova city, during the period 2007-2009.

Study of anatomical particularities of foliar limb at succulent flower plants

Mihaela Cristescu, Doina Anton, C.G. Simeanu
Faculty of Horticulture, University of Craiova
cristescu_miha@yahoo.com

Keywords: cuticle, stomata, protective hairs, mesophyll

ABSTRACT

The succulent flower plants present some morphological and anatomical particularities which constitutes a criterion of taxonomic identification as well as a clue concerning their biological behaviour (the succulent plants are plants little pretentious as far as the water regime is concerned).The leaves are specialised in storing water, the *crassulacean* type structure (leaves with homogeneous mesophyll) characterizes the representatives of this group of plants. In this work are presented the results of my own observations regarding some anatomical structures of the foliar limb (mezophyll cells, epidermic cells and formations) at 9 species of flower succulent plants belonging Sedum (*Sedum linearum, Sedum mexicanum, Sedum morganianum, Sedum pachyphyllum*) and Senecio genra (*Senecio articularum, Senecio kleiniformis, Senecio piramidatum* and *Senecio rowleyanus),* establishing some differences existent among species and genra.

Preliminary results regarding cultural behaviour of some peony cultivars

Elena Ioana Cucu, Elena Şelaru
Faculty of Horticulture, USAMV Bucharest

Keywords: yield, quality, cut flowers, *Paeonia*

ABSTRACT

The purpose of this study was to identify from a large number of cultivars those with best behaviour regarding the yield and its quality, in the south area of the country. Most of the cultivars studied here coresponds to the quality standards for peony cut flowers, regarding both the average shoot length and the average diameter of floral bud. In this respect, the best results were obtained by cultivars of *Paeonia lactiflora* specie and some herbaceous hybrids.

Preliminary results regarding the in vitro initiation and multiplication of *Prunus serrulata* var. *Kanzan*

Magdalena Duta[1], Mihaela Ileana Oprea[2], Manuela Elena Concioiu[3]
[1]Faculty of Sciences Horticulture, University of Piteşti
[2]Public Domain Administration, Piteşti
[3]Brătianu Highschool Drăgăşani,Vâlcea

Keywords: *Prunus serrulata*, in vitro culture, explants, ratio of multiplication

ABSTRACT

The purpose of the research effectuated was to study the *Prunus serrulata"Kanzan"* variety behavior during the phases of initiation and in vitro reproduction. In view of the initiation of the culture there have been drawn explants, in the vegetative repose phase. The nutritive media used had a different content of substances in relation to the in vitro culture phase. In order to observe the initiation of cultures, was tested the influence of benzylaminopurine in concentrations of 0,5; 1; 1,5 mg/l. During the micro reproduction phase on a constant level of indolebutyric acid and gibberellic acid (0,1 mg/l), was tested the influence of benzylaminopurine (1; 1,4; 2 mg/l). In the room designated for growth were assured controlled temperature conditions (22 - 24^{o}C), photoperiod (12 - 16 hours) and luminosity of 3500 lucs. The observations and registered data emphasized the influence of BAP over the growth and micro reproduction of explants. During the initiation phase of cultures were obtained 95% grown explants with normal aspect. Depending on the increase of cytokinin concentration from 1 to 2 mg/l, the rate of reproduction increased from 10,6 to 20,3 micro young shoots/explants. The reduction of the photoperiod to 12 hours determined the decrease of the percentage of plants growth and of the rate of reproduction.

Study of cation exchange regularity in marc grape compost substrate used in some ornamental plants culture

Roxana Madjar, Velicica Davidescu
Department of Agrochemistry, USAMV Bucharest
rmadjar@yahoo.com

Keywords: container culture, organic substrate, nutritive ions, exchangeable bases, pH

ABSTRACT

For the potted species, the case of ornamental plants the soil has been gradual substituted, into the cultural technologies, with substrates, in principal organic materials. Each nutritive substrate has a certain capacity to provide nutrients to the roots. This capacity depends on the nutrients which are present on the substrate not only in the solid phase but also in the liquid phase. The nutrition capacity depends on the following factors: chemical composition of solid phase, cationic change capacity, C/N ratio of the components in the substrate, ionic composition of liquid phase, and aeration condition in substrate, which assure a certain microbiological activity. The nutrition capacity of a substrate vary also with the cultural system, which differ with the cultivated species and the fertilizers used.

The substrates with low cationic change capacity, respectively with low retention by change of nutritive ions are more exposed to the nutrient leaching. This is the case of mineral and artificial substrates on which the acidification or alkalinization action of chemical fertilizers also increases. At the solid phase and liquid phase interface, a retention (adsorption) take place through the change with other cations present in the liquid phase, till an dynamic equilibrium is establish. The majority of nutrients retain are cations like potassium (K^+), calcium (Ca^{2+}), magnesium (Mg^{2+}), aluminum (Al^{3+}), iron (Fe^{3+}), which play an essential role in this change.

The plant culture on "active" substrates require information about the quantity of H^+ ions (pH), the quantity of adsorbed ions in substrate – the sum of potentially exchangeable cations (S_B), the level of base saturation (V%).

The research following to establish the cation exchange regularity in substrate variants with marc compost (waste resulted from vinification process) in mixture with forestry compost, leaves compost and peat in volumetric ratio of 1:1:1:0,5 (leaves compost: forestry compost: peat: marc grape compost). The substrate was used in some ornamental plant culture of *Tamarix tetrandra*, *Ligustrum ovalifolium* Aureum, *Chamaecyparis pisifera* Boulevard şi *Chamaecyparis lawsoniana* Stardust.

Study regarding the growth and the development of *Spathiphyllum walisii L.* depending on the substratum's type and volume

Manda Manuela, Carmen Nicu, Doina Anton
Faculty of Horticulture, University of Craiova
manda_manu@ yahoo.com

Keywords: *Spathiphyllum walisii* L., growth, substrate, duration of blossoming

ABSTRACT

Spathiphyllum is one of the best sold indoor plants, cultivated as a pot plant, being decorative through its leaves and flowers, having modest pretensions about the light, but also for the trade with cut flowers. Moreover, in accordance with a study made by NASA, it is a part of the 10 plants able to filter the noxes and to purify the air (it is very efficient for the removal of the alcohol steams, acetone, benzene and formaldehids). This paper follows to study *Spathiphyllum walisii* L. plants' behavior depending on the substratum's type and volume, with the aim of obtaining plants with a compact bush and with a period of blossoming as long as possible. From the researches that we have made, we can see that the best variant, from the number of inflorescences/ plant and of the length of the blossoming point of view, is the one in which the plants were cultivated in 12 cm pots in the substratum T+P 2/1 (V4).

Researches regarding the influence of the type and volume of the substratum on the evolution of *Anthurium andreanum Lind.* plants

Carmen Nicu, Manuela Manda, Doina Anton
Faculty of Horticulture, University of Craiova
alexa25nicu@yahoo.com

Keywords: nutrition space, reduced size plants, growth control, cultural methods, morphological characters

ABSTRACT

During the last years consumers' and producers' growing interest on the reduced size plants was noticed, interest justified by the numerous possibilities to be used in small spaces: apartments, family gardens, paved spaces, balconies and terraces, floral compositions. This paper presents the results regarding the obtaining small sized plants for *Anthurium andreanum Lind.*, a species with a big share in the cut flowers culture, but cultivated as a plant in pots. A cultural method was applied and observed, reducing the substratum volume (nutrition space) and the influence of the type of substratum on the growth and development of the plants. The main morphological characteristics observed were obviously influenced by the volume of substratum, the minimum values of the analysed parameters correspond the variant where the plants were cultivated in a reduced volume of substratum (7.5 cm diameter pots). As a consequence, reducing the nutrition space can be considered the cultural method in order to obtain the reduced size plants at *Anthurium andreanum Lind.*

Research on planting material production of *Petunia hybrida pendula*

Mihaela Petrescu
SC GARDEN SERVICES SRL

Keywords: germination potential, germination energy, growth and flowering phenology

ABSTRACT

This paper presents research results regarding sowing time influence on growth and flowering of *Petunia hybrida pendula* plants destined for planting in pots to design balconies and terraces. Petunia plants emergence start was recorded at 8.12 days after sowing according to the sowing period. Emergence was completed in 16-20 days after sowing according to the assured conditions as regards as the sowing period and environmental conditions (heat and humidity). Germination potential of Deep pink seeds variety is influenced by the sowing period (100% the sowing period I - February 16 and 82.7% the sowing period IV - March 20). Seeds of this variety have high germination energy (after 3 days of emergence start there have appeared 52% of seedlings at V1 and 44% at V4). Sowing period influenced the number of the appeared seedlings and especially those chosen as viable, decreasing from the time I to time IV and plants growth phenology and flowering, also. Deep pink variety has proven to be very early and very receptive to good light conditions during plant production. Plants valorification time was different depending on the sowing period. Using the 4 sowing periods (February 1- to March 20) it is provided a phasing scale plant production within April 3 - to May 11, for a period of 38 days.

Research on the influence of the exposure location setting and the variety of flowering in some species flower

Mihaela Petrescu
SC GARDEN SERVICES SRL

Keywords: exposure, growth and development.

ABSTRACT

The paper presents results on the use of willow species *Petunia hybrida* flower (*Surfinia*) with two varieties, *Pelargonium peltatum* two varieties and *Verbena erinoides*, to the balconies and terraces design. There was studied the influence of the exposure site of the decoration with flower plants on willow plants flowering potential. The results highlight the positive influence of E and S-W exposure on the flowering plants of *Petunia h.p.* and *Verbena erinoides* and N and NW exposure on the flowering plants of *Pelargonium peltatum.* Some varieties have shown a greater number of flowers as *White Lime* for *Petunia h.p.* and *'Cascade Rot'* for *Pelargonium peltatum.*

The peculiarities of Picea glauca 'Conica' vegetative propagation from cuttings in plant trays in dependence on the rooting medium

I. Roshca
Botanical Garden (Institute), Academy of Sciences R. Moldova
roscasilva@yahoo.com

Keywords: rooting hormone stimulator, number and, length of roots.

ABSTRACT

Cutting propagation is one of most significant area of the modern horticulture. The data on the peculiarities of *Picea glauca* 'Conica' vegetative propagation from cuttings in plant trays in dependence on rooting medium is presented in the paper.

LANDSCAPE ARCHITECTURE

Proposed strategy for the development of an urban design in Astley Park

L. Butters, J. Challender, S. Hunter, L. Lupton
Myerscough College, England

Keywords: Urban design, parks, design concepts, design proposals

ABSTRACT

Astley Park in Chorley, Lancashire, is a Grade II listed park in the centre of the town. Third year degree students from Myerscough College were approached to develop a design for the redevelopment of an underused area of the park. Using local influences and historic information two design packages have been created to meet the design brief and overcome the challenges associated with the site. Building a working partnership with the client's early concepts has been developed over a six month period to produce 2 distinct designs for the same area.

Landscape maintenance - Aviatorilor Boulevard – Bucharest assessment of the vegetal components, analysis of the current situation and guidelines setup for a rehabilitation strategy

Diana Lavinia Culescu
ATU - The Association for Urban Transition

Keywords: Romania, green space, urban,

ABSTRACT

Romania has at this time an inadequate system of landscape maintenance. The main problem consists in the lack of an accurate database for the public green spaces. In order to implement a coherent landscape maintenance strategy it is mandatory to lay-out a foundation by gathering data about different aspects regarding the green areas such as: dimension, soil characteristics, vegetal components, etc. Furthermore, besides the inventory, it is equally important to evaluate the vegetal fund. This action can allow a better use of resources in order to implement a viable landscape maintenance program. The present study aims to do “a radiography” of a given site – the north part of Aviatorilor Boulevard form Bucharest – in order to be able to do an accurate analysis, supported by data and to setup some guidelines for a possible rehabilitation strategy in order to preserve the landscape. An important aspect of this demarche relays in the fact that all the work evolves around the impact that vegetal element problems or changes will have in the overall image of an ensemble.

Research regarding green area problems in the big parking plots

Monica Dumitraşcu, Ana Felicia Iliescu, F.Stănică, Cristina Mănescu
University of Agronomic Sciences and Veterinary Medicine Bucharest
monicad71@yahoo.co.uk

Keywords: planting, maintenance, plant growth, physiological stress, climatic conditions

ABSTRACT

The present paper proposes to establish the determinant factors in the designing and realization of the parking plantations. A series of data have been studied among which: the general plan for traffic and parking areas systematization; the technical solutions for infrastructure, the depth and the practical volume for the plantations, the area climate and the microclimate generated by the constructed area. The present study is the first step in a program that proposes to analyze and to elaborate the criteria for establishing the types of plantations for parking areas (trees rows, hedges, shrub mass plantings), for selection of the varieties and the characteristics of the planting material (root ball or bare root plant material, high, trunk diameter). A case study have been done regarding the behavior of varieties planted in the parking areas of two large commercial centers in North and East of Bucharest, respectively conditions of planting and maintenance have been analyzed; the effect of the physiological stress; pollution effect, mechanical degradation.

Petrila – it exist life after the mine is closed

R. Georgescu, A.M.A. Simionescu, A.I. Vasile, I. Tudora
Faculty of Horticulture, USAMV Bucharest

ABSTRACT

This paper aims to present part of our research project on the post-industrial site-recovery in the case of Petrila, in Valea Jiului. The research project was developed between 2006 and 2008, considering not only the particular case of Petrila but the post-industrial ecological and social issues in general. In the following chapters we will try to explain our interdisciplinary approach that touch socio-economic, urban, architecture and heritage, territorial development, land use and other problems form the landscape point of view. The proposal that resulted from this research try to integrate various solutions for the complex problems, already present or that will occur after the mine closing, in a landscape conscious vision.

The research project will be divided into 2 major chapters: The first chapter presents syntactical-morphological analysis of the site and the second chapter, the presentation of the solution, which is divided into 2 subsections: the general proposal and the proposal off on site.

The historical survey of Transylvanian (Romania) Castle Garden
An historical survey of Brâncoveneşti Castle Garden

Lóránt Kovács[1], Albert Fekete[2], Endre Kentelky[1]
[1]"Sapientia" University Tg-Mureş, Romania
[2]"Corvinus" University Budapest, Hungary

Keywords: castle gardens, Brâncoveneşti, the Kemény family, Helikon, protection of national monuments, Albert Wass.

ABSTRACT

The aim of our research is the evaluation of Brâncoveneşti Castle Park, assessing its actual stage as well as drafting its revitalization plan. The park's dynamical changes were studied using 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. We also took measurements of every reference point of the studied area on the investigated site. Our geodesic assessments, together with the park's present state, contain the most important restoration and revitalization dates. The article also contains our conclusion and references about the investigation.

The historical survey of Transylvanian (Romania) Castle Garden. An historical survey of Gorneşti Castle Garden

Lóránt Kovács[1], Albert Fekete[2], Endre Kentelky[1]
[1]"Sapientia" University Tg-Mureş, Romania
[2]"Corvinus" University Budapest, Hungary

Keywords: castle gardens, Gornești, the Teleki family, protection of monuments, landscape design science

ABSTRACT

The aim of our research is the evaluation of Gornești Castle Park, assessing its actual stage as well as drafting its revitalization plan. The park's dynamical changes were studied using 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. We also took measurements of every reference point of the studied area on the investigated site. Our geodesic assessments, together with the park's present state, contain the most important dates of the restoration and revitalization. The article also contains our conclusion and references about the investigation. Gornești is situated on the left bank of Mureș River, on a plain near the Bongor hillside along the road from Tg-Mureș to Reghin. The settlement has a long history; the earliest documents mention it from the beginning of the 14th century. Its name first appears in 1319 as 'Knezeg' (Bíró 1938). At this time the settlement becomes the property of the Széchényi family, and then King Sigismund's donation letter (1405) testifies that it is the property of Antal Erdélyi. The charter from 1477 mentions Gornești protected fortified castle as "Castellani castelli Gernyezegh". King Mátyás mentions it in his charter from 1478 as a royal castle ("Castrum Nostrum regis Gernyezegh", Keresztes 1995).

Local community in the land of Buzău landscape

C.E. Olariu, M. Dobre, I. Tudora
Faculty of Horticulture, USAMV Bucharest

Keywords: landscape, rural landscape, geo-park, tourism, local communities.

ABSTRACT

The landscape plays a very important role in the human life (physical and psychological), being modified continuously by their activities (conscious or unconscious) in their evolution. The landscape also represents part of the heritage of the future generations, fact that leads to a continuously monitoring need of the existing landscape and also to anticipate and to make long term scenario.

The present work presents a complex field research concerning the identification of certain existent typologies witch aims the optimum intervention principles for Buzău geo-park.

"The Land of Buzău" is situated at the intersection of three bio-geographical zones: alpine region in north, continental region in centre and the steppe region in south. All of these regions have specific elements of flora and fauna, thus results a dynamic character of the territory.

New trends in public urban parks - garden in motion theory

I.M. Panțu
Landscape Department, USAMV Bucharest

Keywords: public park, garden in motion, Herăstrău Park

ABSTRACT

In this paper, I will briefly present the ecological theory developed by the French landscaper engineer Gilles Clément, called garden in motion (*jardin en movement*) and argue for the desirability of applying the above-mentioned theory to an almost derelict area of the Herăstrău Park, in Bucharest. The concept of garden in motion is inspired by waste grounds, places where plants growing spontaneously are allowed to develop freely. The garden and the landscape are always changing, they are not permanent. The plants, the seeds are always moving and thus are transforming the spaces where they end up being implanted. The landscape architect or the gardener has to choose between leaving the nature develop freely and interfering. His task is to interpret the plants' interactions and then to decide where and how much to interfere in order to maintain and to improve biodiversity (.e.g. he has to decide how to balance light and shadow, to decide on the arbitration between different species etc). The concept of garden in motion is well known and very well received all over the world. It is its ecological importance that makes me propose its application in Romania too, in Bucharest, in the northern area of the Herăstrău Park.

Cişmigiu Public Garden in Bucharest urban context and the role of horticultural maintenance in preservation of historic gardens

Violeta Răducan
Landscape Architecture Department, Faculty of Horticulture, USAMV Bucharest

Keywords: preservation, conservation, restoration, legislation, national heritage

ABSTRACT

Cişmigiu Public Garden has evolved a long way, from a hunting and fishing public place into a central public garden, the place for one of the most important cultural, political, civil society activities, the place of various happenings, protest meetings linked to the evolution of the city, in other words to urbanism, preservation and conservation of historic public spaces and green spaces too. The cultural landscape has to be preserved and historic gardens are one of the most important components of it. This garden was designed in three stages starting in the middle of the 19th century. For the first stage, landscape architect Wilhelm Friedrich Carl Meyer (1814-1852) was helped by the gardener Franz Hörer. Wilhelm Knechtel, for the end of the 19th century, and Friedrich Rebhuhn, for the first half the 20th century, was other great creators of this Garden. Their work completed and improved Meyer's design. They opened the garden to the city. Cişmigiu Public Garden became an important part of the city, linked with it along all its sides. The mixed character of the Garden composition was preserved along its whole evolution. In our days, the historic character of the Garden is in a great danger to be lost or seriously damaged, as a result of incomplete legislation, of lack of specialists in preservation and conservation of Historic Gardens and mostly, as a result of the fact that the landscape architects are not represented in the decisional structures of the municipalities and of the Romanian Ministry of Culture, Cults and National Patrimony (MCCPN). Horticultural techniques have to support preservation and conservation of the historic vegetal compositions, which are an important part of historic character of this Garden and of any Historic Garden.

Cişmigiu Historic Garden - a manifest

Violeta Răducan
Landscape Architecture Department, Faculty of Horticulture, USAMV Bucharest

Keywords: patrimony, protection, preservation, conservation, restoration, ephemeral installation

ABSTRACT

The interest in protection, preservation, conservation and restoration of Historic Gardens is not a priority in Romania, partially as a consequence of the political and economical context and partially as a consequence of lack of legislation in this field. As a result, all the Romanian Historic Gardens are in a poor condition and in a great danger to loose their historical character. Cişmigiu Public Garden, one of the most loved and well-known Historic Gardens in Bucharest is an exemplar case for the importance of protection, preservation, conservation and restoration of the national patrimony. Cişmigiu Public Garden, one of the oldest public gardens in Bucharest, is part of the Romanian List of Historic Monuments (LMI: B-II-a-A-19655). However, it is in danger of becoming an ordinary garden, because of the multitudinous of unfortunate interventions which damaged its historical character. The garden was established in the first half of the 19th century and it was modified several times. Starting with 1960, a lot of features were added, affecting the appearance and the consistence of this Historic Garden, even if it is placed just in front of Bucharest City Hall. We have already completed the inventory of all artifacts and features of historic and artistic interest, which are still alive in Cişmigiu Public Garden, including vegetal compositions and a list of urgent interventions to save them. On Saturday the 18th of July 2009, on the alleys of Cişmigiu Public Garden, we exhibited three hundred sketches, analyses and proposals. These activities were accomplished by the students of Landscape Architecture Department, Bucharest Faculty of Horticulture, as practical activity in Restoration of Historic Gardens. That was the day when the mayor of Bucharest invited us to collaborate with the Mayoralty in the field of Historic Gardens.

Case study of a rural area in South-Western Dobrogea

M. Silvaş, S. Moumene
Faculty of Horticulture, USAMV Bucharest

Keywords: rural landscape, sustainable development,

ABSTRACT

Romania starts on the road of reaching a free market with a considerable disadvantage. We are 20 to 50 years behind the Western Europe countries in numerous ways. None the less, this handicap must bring some advantages: traditions, customs, occupations, values that constitute the way of life of the Romanian country-side dweller. In search of progress and of a superior life standard, we need to combine new technology and E.U. Politics and strategies with the lessons that these advantages can still offer to the future generation.

The case study refers to a rural area in the South-Western Dobrogea (the historical territory of the country, situated in the vicinity of the Black Sea).

The study, divided in two parts tried to accomplish the following:

-the first part was dedicated to an interdisciplinary assessment of the physical, social, cultural and economical territory, and to the formulation of the conceptual guide lines of intervention and of the general strategy.

-in the second part of the study four targeted solutions were formulated addressing the landscape potential usages: as a base for touristic activities, as means of increasing the public appreciation of landscape and environmental issues, as base for sustainable rural development; the case study also offered a general draft of the management methodology.

Landscape revival towards the intergration of the Magheru-Bălcescu boulevards in the N-S green axis of Bucharest

I. Streza, I. Tudora, C. Voinescu
Faculty of Horticulture, USAMV Bucharest

Keywords: urban landscape, public space, axis, diversity, alternative, environment

ABSTRACT

The present article proposes to present an alternative vision regarding the public spaces in Bucharest, beginning with the specific case of the city centre and its main axis: the Magheru-Balcescu boulevards. The town's historic development led to a peculiar urban landscape, whose particularities tend to dull, becoming almost imperceptible in the last couple of years. This situation is merely determined by the urban environment being dominated by the more and more aggressive presence of the car and, simultaneously, by continuous loss of public space, the only one to refresh the sense of collectiveness and communal life. On the other hand, even though the issues concerning urban ecology increase their harshness, the revival policies of Bucharest remain stuck in a decorative approach, that ignores the problems of urban environment and ecology. Given all this, the project that is being discussed in this article is set to offer an alternative approach on the recovery of urban public space.

Les effets des politiques urbaines du XIX-e siècle sur les jardins bucarestois comme éléments du paysage urbain

I. Tudora
Département du Paysage, Faculté d'Horticulture, USAMV Bucarest

Motsclef: Paysage urbain, jardin, politiques urbaines

RESUME

Cet article se propose d'étudier le rôle des cours et des jardins bucarestois dans la création du paysage urbain de la deuxième moitié du XIXe siècle. Il suivra le fil de leur évolution, guidé par les législations et les réglementations urbaines modernes, et analysera leur structure, image et usage en tant qu'espaces d'habitation. Notre étude prend en compte les jardins des faubourgs (*mahalale)* bucarestois, devenus désormais des quartiers centraux. Quant à la chronologie choisie, la période est marquée par une série de transformations radicales de la structure urbaine opérées dans un contexte d'influences culturelles multiples, ayant aussi touchée le mode d'habitation.

Ornamental species used for landscape design in South Korea

A. Zaharia[1], D. Zaharia[1], Maria Cantor[2], Erszebet Buta[2]
[1]Department of Landscaping, [2]Department of Floriculture
University of Agricultural Science and Veterinary Medicine Cluj-Napoca

Keywords: landscape, ornamental species, South Korea

ABSTRACT

In South Korea, woodlands are considered to be the most important biotope type for biodiversity conservation. However, they are suffering loss and degradation under strong pressure from urbanization and agricultural expansion. In a period of 30 years it was modified the spatial characteristics of the woodlands at the landscape level. The famous Maisan (Horse Ears) Mountains provide a dramatic backdrop for nearby dwellings and temples. Many hillsides and mountains in South Korea have been replanted with trees to reverse the effects of past deforestation, such as severe erosion. Farmers cultivate the lands in the river valleys and on the hillsides within this predominantly mountainous country. Scattered residential developments and roads were the main causes of woodland loss and fragmentation in the urban and urban fringe landscapes, while the expansion of agricultural activities reduced the average size of woodland patches in the agricultural landscape, like in our country. Traditionally an agricultural nation, South Korea has invested heavily in landscaping and mining to diversify its economy. So, they found the potential and specific needs for landscape planning in a rapidly developing urban region in South Korea. In this paper we observed the ornamental species which they used in their landscaping plans for using them in our own country, Romania.

FRUIT GROWING&TECHNOLOGY

The behaviour of some local walnut biotypes from Voiteg, Timiş county

Aurelia Blidariu[1], Olimpia Alina Iordanescu[1], Roxana Elena Micu[1], C. Blidariu[2]
[1]Faculty of Horticulture and Forestry, [2]Faculty of Agriculture
USAMVB Timişoara

Keywords: biometrical features, physico-mecanical composition, kernel

ABSTRACT

The long time culture of walnut and its wide spread in different climatic and soil conditions in the world made up the conclusion that the walnut is a very plastic species, easy adaptable. Because of its heterosexual pollination, within the species *Juglans regia* L. there are some trees resistant to frost and others very sensitive, some with late flowering and others with early flowering, resistant to diseases in different ways, productive or less productive. This variability has an advantage because it is possible to choose the most representative biotypes proper for the soil, climatic and economical conditions of each region.

The behaviour of some insecticide products in the control of the afides (*Aphis pomi)* in the conditions of the Dâmbovița tree growing region

Cecilia Bolbose
The Tree Growing Research & Development Station Voineşti
statiuneavoinesti@gmail.com

Keywords: species**,** apple tree, *Aphis pomi*, new insecticides, attack degree

ABSTRACT

The green apple tree louse (*Aphis pomi De Geer*.) represents a dangerous pest for the orchards in Dâmbovița. The researches performed at the Tree Growing Research & Development Station Voinești in the period of the years 2007-2008, present results regarding the efficiency of some new products, besides the classical insecticides with a known biological efficiency in the combat of the green apple tree louse. A good efficiency was noted at the product CALYPSO 480 SC conc. 0.02%, with a mortality of 92.9% for the year 2007 – and the substances THIACLOPRID + TRIFLUMURON SC conc. 0.05% and DECIS 50 EW conc. 0.015% presented a mortalitaty of 94.5% and 91.4% respectively, in the year 2008.

Mathematical models, tables and nomograms to settle the technically optimal rates (TOR) of N, P_2O_5 and K_2O in fruiting apple tree and pear tree on flat and terraced terrains

G. Budoi
Department of Agrochemistry, USAMV Bucharest
E-mail: budoi_gh@yahoo.com

Keywords: soil nutrients, maximum yield, Fertexpert

ABSTRACT

For the first time it is published the series of mathematical models and agrochemical tables and nomograms to settle the technically optimal rates (TOR) of N, P_2O_5 and K_2O in fruiting apple tree and pear tree, as function of maximum expected yield, Y_m, and the specific soil agrochemical indexes (IN, P_{ALc}, K_{AL}). FERTEXPERT software version 3 has been used for TOR calculations. When operative settle of TOR are needed and the farmer does not have enough time for calculations, the practical agrochemical tables and nomograms can be used; when exact values of TOR are desired, the presented mathematical models have to be used.

Mathematical models, tables and nomograms to settle the technically optimal rates (TOR) of N, P_2O_5 and K_2O in fruiting peach tree and apricot tree on flat and terraced terrains

G. Budoi
Department of Agrochemistry, USAMV Bucharest
budoi_gh@yahoo.com

Keywords: soil nutrients, maximum yield, Fertexpert

ABSTRACT

For the first time it is published the series of mathematical models and agrochemical tables and nomograms to settle the technically optimal rates (TOR) of N, P_2O_5 and K_2O in fruiting peach tree and apricot tree, as function of maximum expected yield, Y_m, and soil chemical analyses: IN, P_{ALc}, K_{AL}. In order to compute TOR values, FERTEXPERT software version 3 has been used. The practical agrochemical tables and nomograms allow the farmer to operatively settle TOR when he does not have enough time for calculations. When exact TOR values are needed, the mathematical models have to be used.

Research concerning sensorial characterization of seven apple types stored in refrigeration and controlled atmosphere conditions, respectively for 7 months

Mirela Calu[1], Elena Pruteanu[1], I. Tofan[1], Denisa Duță[2]
[1]"Dunărea de Jos" University, Galați
[2]Institute of Food Bioresources Bucharest
mirelacalu@yahoo.com

Keywords: sensorial analysis, volatiles, electronic nose, quality of apples

ABSTRACT

Freshness represents one of the main characteristics of consumer choice of fruits and vegetables. Freshness will be presented to relate the attributes associated with like crispiness, hardness and juiciness, chewiness, after taste, flavours, odour. The apple storage by refrigeration and controlled atmosphere is a technique for quality fruit preservation involving careful control of temperature, oxygen, carbon dioxide and humidity. During storage in controlled atmosphere storing rooms for a long period fruits lose their freshness and some of their characteristics depreciate but market differences appears in refrigeration conditions. In this article we characterized seven types of apples stored in these conditions concerning carbohydrate content and their sensorial attributes. The objective evaluation of the quality of fruits is a difficult task, mainly due to the fact that every single person is not necessarily influenced by the same attributes and that the quality scale may vary strongly from one person to another. The perception of volatile compounds by the human nose is of great importance in evaluating quality of foods; therefore, similar principle as the human nose, the electronic nose, was used.

Studies regarding the influence of some pre and postharvest treatments upon the quality of peach and nectarine fruits

Lenuta Chira[1], A. Chira[1], Liana Dumitru[2], Constanta Alexe[3],
Elena Delian[1], Elena Savulescu[1], Alexandra Costea[1]
[1]University of Agronomic Sciences and Veterinary Medicine Bucharest
[2]Fruit Growing Research Institute Valul lui Traian - Constanta
[3]Horting Research Institute - Bucharest

Keywords: quality, storage, perishable, pre and postharvest

ABSTRACT

The most important link in the postharvest technology is constituted by the physical treatment during the storage period.In the present paper we want to demonstrate the influence of the post-harvest storage conditions on the quality and shelf life of the peach and nectarine fruits. The experiment has been organized at the Research Institute of Fruit Growing-Constanta and at the Faculty of Horticulture Science of Bucharest with four peach and nectarin varieties: Cora, Delta,Southland and Cardinal. The lower moisture percent and loss weight, for all varieties has been registered at variant were the fruits are stored under modified and refrigerated atmosphere.In the case of fruits stored at 2 C and 85-90% relative humidity under modified atmosphere, the fruit storage capacity was better and the qualitative characteristics were higher as compared with the untreated control (stored in room conditions).

Effect of growth retardants treatment on plums yield and fruit quality

Viorica Chițu, Mădălina Butac, E. Chițu, Silvia Nicolae
Research Institute for Fruit Growing Piteşti – Mărăcineni, România
icpp_mar@geostar.ro, vioricachitu@gmail.com

Keywords: growth retardants, yield, fruit quality

ABSTRACT

The experiment was conducted to investigate the effect of some biorregulator applied to improve plums yield and fruit quality. The field experiment was designed in 4 treatments, disposed linearly and 4 replications with the plum trees cv. As factor A, biorregulator products application as factor B and the moment of application as factor C. Foliar application of bioregulators has induced a increased of plum yield with 25% at '*Stanley*' cv. (treatment with Paclobutrazol) and 15% at '*Tuleu gras*' cv. (Treatment with prohexadione calcium) versus control.

Elements of the specific investment for the promotion in culture of the high density apple tree system

D.N. Comănescu, Gh. Petre
Tree Growing Research & Development Station Voineşti
statiuneavoinesti@gmail.com

Keywords: the highdensity apple tree system, specific investment, genetic disease resistant breeds.

ABSTRACT

The researches performed at the Tree Growing Research & Development Station Voinești, by the creation in the year 2007 of an apple tree plantation in the 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 developped tree growing. The investment at the setting up of an apple tree hectar in the the high density system, wich 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 maitaining expenses are partially covered from the year 3 – and totally from the year 4 after plantation, due to the remarkable producțtions registred at the cultivatated assortment. The results obtained at the Tree Growing Research & Development Station Voinești, recommend the extension in culture of the the high density apple tree system, due to the 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 influence of the way of field fertilization and way of storage upon nectarines and peaches quality

Alexandra Costea, Lenuta Chira, A. Chira, Elena Delian
University of Agronomic Sciences and Veterinary Medicine Bucharest

Keywords: peaches, nectarines, quality, storage

ABSTRACT

The market studies underline the more increased consumer exigency for the products that they buy. On the other hand, the most efficient factories and farms are situating the quality in the middle of their strategy, that one becoming a main aspect in the concurrence context, and sometimes, even a surviving condition. In the agro-food domain, the investment in quality is one of the best that a company can do, being a privileged way for dropping the production price, for maintaining their clients, for winning new positions on the market. The final aim is to make the company more competitive. But the resulted costs from non-quality can represent even to 5-to 30% from the business number, so an inefficacy activity (that determines the non-quality) costs as much as a good one (the one that determines quality), but the last one reduces the cost price while the first one it increases.

Researches regarding the influence of some pre and post harvest technologies upon the quality and storage capacity of some peaches and nectarines fruits varieties

Alexandra Costea, Lenuța Chira, A. Chira, Elena Delian, I. Năməloşanu
University of Agronomic Sciences and Veterinary Medicine Bucharest

Keywords: peaches, nectarines, quality, storage

ABSTRACT

Analyzing the content of the notion "quality" for horticultural crops, we have in aur minds, first of all, the value of use which expresses the possibility of use of a product that make it capable of satisfying a social need. In fact, the value of use differentiates the products from the same specie and even from the same variety before being used in a technological process, before being raw material, good and even final product.

Taking in consideration the dynamic aspect, the quality represents the entire characteristics that a product have them for satisfying a specific time, very well established, the buyer requests, facilitating the purchase of that product in spite of other similar product. Must be added the fact that about quality can't be spoken without reminding the complex and dynamic characteristic of it. As much the product is more perishable the time increases the transformation speed of its characteristics.

The dynamic characteristic of products quality expresses also on the human evolution, so its content evolutes step by step with the practical needs.

A main component in real matter of quality is the time, not only as period of product use, but also as product life cycle. So, the values of product use have also a dynamic characteristic that manifests multiple according to entropy law, the use values are in movement under transformations (usual degradable – A. Gherghi, 1999).

For the agricultural crops and in special for horticultural crops, the processes are only in a temporary equilibrium, conditioned. In this equilibrium ongoing interferes its passing from one system – the one of obtaining, of products, in the other system – of capitalization. (A. Gherghi, 1979, I. Burzo, 1983).

The products quality and especially for final products, prepared as goods through direct rapport to requests, is expressed by characteristics. On these is founded the differentiation of products quality, their classification in classes and quality categories.

In the products and services quality law, the characteristics are grouped in: technical, economical, psycho-sensory, social and esthetical. Some authors (I. M. Juran, F. M. Gryna) differentiate the quality characteristics after the following groups: technical characteristics, psycho-sensory characteristics, of reliability grouping them after their destination, in media work and individual consume objects characteristics.

Behaviour of new apricot selection in conditions of Băneasa Research Station

Maria Dumitru[1], Cristina Petrisor[1], Adela Barbulescu[1],
Viorica Balan[2] Gh. Campeanu[2], M. Roman[1], Andreea Petcu[1]
[1]Research and Development Station for Fruit Tree Growing Băneasa, Bucharest
[2]University of Agronomic Sciences and Veterinary Medicine Bucharest

Keywords: apricot, breeding, quality, phenology

ABSTRACT

Apricot is a species less cultivated than other Prunus species, particularly peaches and plumps. This stonefruits species is a typical temperate fruit crop which has been dispersed and has become well adapted in the countries surrounding the Mediterranean Basin. Consequently, in spite of being spread geographically, apricots have not become pomologically important except in areas with special ecological conditions.

In our country although favorable climatic conditions of apricot culture there are only in south-west and west has become a important economical species.

The Research Station for Pomiculture Baneasa have an important role both implementation and extending valuable varieties from mondial collection but through breeding of new apricot cultivars.

Cultivars studied in this work were chosen as representatives of different flowering times, ripening date and productivity. Each selection is represented by five trees, considerable differences in time and in intensity of blooming, ripening period in other characteres were observed in two seasons.

Selections studied were very productive in the years of investigation. The biggest fruit were produced by 83.7.28 BI and 84.4.41 BIV selection. The influence of the cultivar was more determinant than the seasonal effect on fruit yield.

The rational use of the sprinkling machines in tree growing, in view of reducing the environment pollution

Gh. Erculescu
Tree Growing Research & Development Station Voineşti
statiuneavoinesti@gmail.com

Keywords: combat; pesticides; norm; diverting; parameter;

ABSTRACT

The pollution is a problem in all times, but especially in our time, because the magnitude and the gravity of the pollution processes, the scientific and technical achievements of modern man, permitted the development of the pollution risks – and consequently one forgets to take particular severe measures for the prevention and the combat of the degrading of the environment, with its three components – air, water, soil. Notwithstanding all the progresses realized in the direction of the biological pests combat, of creating diseases and pest resistant breeds and of perfecting the non-polluting combat means, until now the integrated diseases and pests combat in tree growing, without chemical treatments, is not realized satisfactory. The chemical combat continues to remain - with all the risks related to the environment pollution by using toxic pesticides with a long remanence – one of the major ways to assure and to increase the fruit production level. Due to the ease of applying, the dosage preciseness and the high productivity, applying the phyto-pharmaceutical products under the form of sprinklings continues to constitute one of the most efficient preventive and curative combat methods, used in tree growing. Applying the treatments for the diseases and pests combat with pesticides, using classical sprinkling machines with hydraulic or pneumatic spraying, leads to an efficient combat, when superior qualitative values are obtained – and it is a very precise one, regarding the distributed pesticide quantity per hectare. The paper proposes the knowledge of the main constructive and functional parameters of the sprinkling equipments in tree growing, on which it is necessary to intervene, in order to reduce the environment pollution

Evaluation of some apricot hybrids, regarding the resistence to PPV by molecular determinations

Ligia Ion[1], D. Hoza[1], Stela Popescu[1], Tudora Neagu[1], Cristina Moale[2], C. Nicolae[1]
[1]USAMV Bucharest
[2]SCDP Constanta

Keywords: Plum pox virus, PCR, DNA, resistance, molecular markers.

ABSTRACT

Plum pox virus is the causal agent of Sharka disease, considered to be the most devastating disease of stone fruit trees. The estimated number of infected trees is over 100 million apricot trees. This virus belongs to the genus potyvirus (family of the Pothyviridae), which is characterized by filamentous particles containing a monocatenary RNA. Virus developes by replication in the leading vessels (phloem) of host plants. Besides plum, the disease infects other Prunus species of economic importance, including: nectarine, apricot, peach, almond, cherry and some ornamental plants (Petunia, Zinnia) or vegetables (tomatoes, peas).

Evaluation of the resistance to PPV of some apricot hybrid combinations, at SCDP Valul lui Traian, improved under natural conditions of infection in the field with PPV, is a first step to start the implementation of the molecular markers' assisted selection (MAS) in these genotypes; the next step is to test this hybrid in conditions of artificial infection in greenhouse.

Researches concerning the influence of late frosts upon the production of different apricot varieties in conditions of the Banat Plain area

Olimpia Alina Iordănescu, Roxana Elena Micu, Isabela Szonyi (Rechițean)
Faculty of Horticulture and Forestry, USAMVB Timişoara

Keywords: fruits, binding degree, production differences

ABSTRACT

The apricot is a species recommended to be cultivated in the plain area of Banat because of the favourable climate, but we have to mention that the appearance of late frosts in spring has a very significant negative impact upon the production. The apricot varieties in our country are diversified, including at the same time local and foreign varieties, varieties having quality fruits, very productive, some of them having a good resistance to low temperatures during pause period, but also to late spring frosts, which, in the past years, are more frequent in the western part of Romania. There were studied 12 apricot varieties: Earlyryl, Dana, Neptun, Saturn, Cea mai bună de Ungaria, Venus, Callatis, Sulina, Favorit, Selena, Silvana and Olimp cultivated in conditions of the Didactic Station of our University concerning the fruit binding degree and productivity of the varieties in 2008. The late frosts in spring affected the flowers and diminished the number of bind fruits. Correlated with the physiological fall of fruits, the percentage of harvested fruits had lower values than normal. The production obtained in 2008 was compared with the medium production obtained in 2005-2007 and the differences were pretty high. For the mentioned area we recommend for culture Favorit, Cea mai buna de Ungaria and Callatis varieties, which had a good production even though they were affected by the late frosts in spring.

The influence of the culture system on the content of strawberry leaves in macronutrients

Manuela Mandă[1], Cristina Anton[2], C. Mandă[3]
[1]Faculty of Horticulture, University of Craiova
manda_manu@yahoo.com
[2]Vocational High School „Traian Demetrescu" Craiova
[3]Vocational High School „Traian Vuia"Craiova

Keywords: *Fragaria sp*., culture system, leaf analysis, macroelements

ABSTRACT

From the pomicol species, the strawberry plant is one with a large habitat, having more modest requirements than the pedoclimatics factors and a culture technology not very complicated. It is one of the most profitable culture in case of applying a technology adequated to the biological and ecological particularities of the plant. Starting from the particularities of strawberry's growing, it is said that the first 2 or 3 runners and rosets formed in the planting's year can fructify in the the following year, when the culture has been established in spring, the runners having time enough to become vigorous plants until autumn for making possible the difference between the bud and the knot. In this paper we present part of results concerning the influence of culture system on the chemical composition of strawberry leaves. Excepting V6-band/125cm, the rhythm of accumulation in leaves, at the analyzed variants, reached higher values than the, in accordance with the average productions obtained.

Preliminary results concerning the weed control in apple orchards in conditions of the Didactic Station Timişoara

Roxana Elena Micu, A.Lăzureanu
Department of Agrotechniques, USAMVB Timişoara

Keywords: Generos variety, final weed filing, herbicides, manual, mechanical control

ABSTRACT

Despite of the progress registered in agriculture in the past years, weeds are still remaining present on cultivated and non cultivated areas and implicitly in orchards. The weeding degree in the orchard of the Didactic Station Timisoara in 2008 was over 95%, being present both dicotyledonous and monocotyledonous annuals and perennials. In order to have a good control of them, there was first done an initial weed filing and according to that there were use the most proper control measures. After that there was done a final weed filing, which helped to determine which method of control was the best for Generos variety floristic composition. It turned out that the best results were obtained in those variants where herbicides were combined with manual hoes.

Preliminary results concerning the weeding degree in apple orchards in conditions of the Didactic Station Timişoara

Roxana Elena Micu, A. Lăzureanu
Department of Agrotechniques, USAMVB Timişoara

Keywords: Generos variety, floral composition, weed filing

ABSTRACT

Weeds represent a permanent preoccupation in any culture as they compete with the plant culture for water and minerals' absorption. According to this, it is important to know the floristic composition of weeds in the orchard in order to apply the most efficient control measures. In the orchard of the Didactic Station Timisoara there are cultivated six varieties of apple trees, having the same culture technology, one of them being Generos variety, which gives very tasteful and good looking apples. The weeding degree in the orchard is over 95%, being present both dicotyledonous and monocotyledonous annuals and perennials. The predominant weeds, which cause severe damages, were those propagated through rhizomes *Agropyron repens*, *Cynodon dactylon*, or root shoots *Cirsium arvense*, *Convolvulus arevnsis* and *Sonchus arvensis*, as well as annuals like *Stellaria media* and *Veronica hederifolia*.

Nutritional qualities of some cultivars of red and black currants from Banu Mărăcine, Craiova

Violeta Nour, Mira Elena Ionică, I. Trandafir
Faculty of Horticulture, University of Craiova
vionour@central.ucv.ro

Keywords: anthocyanins, ascorbic acid, mineral composition

ABSTRACT

The cultivation of *Ribes* fruits (black- and redcurrants and gooseberries) is aimed at both fresh and processing markets, with the blackcurrant *R. nigrum* particularly important in the latter. Blackcurrants and other *Ribes* species are outstanding sources of antioxidants, both in the form of high ascorbate levels but also in the high concentrations of polyphenolic compounds that are contained within the fruit. The latter include flavonoids, such as anthocyanins and flavonols. The amounts of these compounds present in the berries varies with cultivar, environment and agronomic practices. The aim of our study was to evaluate total anthocyanin content, ascorbic acid content and other physicochemical properties of black and red currants collected from Banu Maracine Research Station, Craiova. Eight black currant (Ribes nigrum) and two red currant (Ribes rubrum) cultivars were investigated. For the quantification of total anthocyanins in fruits, a spectrophotometrical assay was performed. Also, it was evaluated the mineral composition by the method of atomic emission spectrophotometry, with inductively coupled plasma (ICP). The black currants were remarked by the higher dry matter content, titratable acid, ascorbic acid and anthocyanins content than red currants. The highest amount of anthocyanins in black currants was found in samples of Record and Tenah cultivars and twice lowest in Abanos, Bogatâr and Blackdown cultivars. Ascorbic acid content was higher in Tinker, Tenah, Abanos and Deea cultivars, with more than 200 mg ascorbic acid per 100 g and for 7 times lowest in red currants. Results showed that black and red currants have rich mineral composition, especially potassium and iron.

The quality of highbush blueberry (*Vaccinium corymbosum*) hardwood cuttings rooted in different substrates

A.G. Peticilă, F. Stănică, Monica Dumitraşcu
University of Agronomic Sciences and Veterinary Medicine Bucureşti

Keywords: rooting, hormones, basal heating

ABSTRACT

Cutting is one of the principal propagation methods of highbush blueberry (*Vaccinium corymbosum.*). The paper presents some new aspects of the basal heating techniques on hardwood cuttings rooting. Cuttings of *Vaccinium corymbosum* varieties (Bluecrop, Blueray, Coville) were treated with alpha naphtyl acetic acid -NAA (1000 ppm), indolil butyric acid - IBA (1000 ppm) and NAA + IBA (1500 ppm). Composed rooting substrates, double layers and mixed with: wood flour + perlite; wood compost + perlite were used. The rooting percentage and the quality of formed roots were strongly influenced by variety, cutting moment, substrate type used and basal and atmospheric temperature.

Researches regarding the shortening of the period for obtaining genetic disease resistant apple tree breeds

Valeria Petre, Gh. Petre
The Tree Growing Research & Development Station Voineşti,
statiuneavoinesti@gmail.com

Keywords: new methods for obtaining of apple trere breeds, with shortening of the period, performing solutions with reduced surfaces and costs.

ABSTRACT

In the genetic improvement programs, conventional methods are used for obtaining of new breeds – namely the intra- or interspecific hybridation, characterized by a long duration (34-27 years) and high costs. The new method, with shortening of the period of obtaining genetic disease resistant apple tree breeds, replaces the hybrids selection field with a field of elites, selected in the juvenile phase from the fortification field, according to the growth and disease resistance pecularities, grafted on weak vigour layers (M9), planted on definitive places, at a distance of 3x0,5m. The possibility is created to select elites according to theri disease resistance character and their fruit quality, during 3-4 years - and their rapid transfer into competition micro-cultures. The researches performed at the Tree Growing Research & Development Station Voineşti in the period 2007-2009 point out the fact, that by promoting of chain loops for shortening the obtaining duration of genetic disease resistant apple tree breeds in the improvement process, the period is shortened by 30-35%, as compared to the conventional method (25-28 years), the surface destined for the selection fields is reduced by almost 5 times – and the costs for the creation and the putting into account of a new breed decrease to a considerable degree.

Preliminary results considering the fruiting phenophases development in the pedoclimatic conditions of the Didactic Station Timişoara

Isabela Szonyi (Rechițean), E. Drăgănescu
Faculty of Horticulture and Forestry, USAMVB Timişoara

Keywords: apple, varieties, flowering, fruit binding, harvest

ABSTRACT

In the Didactic Station of Timisoara we observed the development of the main fruiting phenophases of five apple varieties as it follows: a summer variety – Romus 2, two fall varieties – Generos and Pionier and two winter varieties – Jonathan and Florina. We observed and took notes of the beginning of each phenophase for all the varieties. The development of each phenophase is different for the mentioned varieties and it is directly influenced by the climatic conditions of the area. Knowing the fruiting phenophases is very important in fruit culture technology in order to know when and how to do the main technological works in the orchard.

Preliminary results concerning the influence of manual thinning of fruits of some apple varieties in conditions of the Didactic Station Timişoara

Isabela Szonyi (Rechițean), E. Drăgănescu, Olimpia Iordanescu
Faculty of Horticulture and Forestry, USAMVB Timişoara

Keywords: Generos, Florina, production, weight

ABSTRACT

In the climatic conditions of the Didactic Station of Timisoara there were studied five apple trees varieties having different maturation periods: Generos, Florina, Jonathan, Pionier and Romus 2. In this article we present the results obtained during 2006, 2007 and 2008 after doing manual thinning in different stages. The manual thinning was done after the physiological fall in June, not later than the firs decade of July, more precisely after 30-40 days since the fruit binding phenophase took place. This operation has a major impact upon the fruits' quality, mainly the weight of fruits, but it does not influence too much the production per tree because, in the case of those variants where thinning was more severely of 40-50% there were less fruits on the trees, but heavier, compared with the variants where the thinning was lighter (20-30%) and there were many fruits left on the trees with normal weight.

The creation and the promotion in the culture of some new genetic disease resistant apple tree breeds at the SCDP Voineşti

Gabriela Uncheaşu
The Tree Growing Research & Development Station Voineşti
statiuneavoinesti@gmail.com

Keywords: hybridations, selections with perspective, DUS test, breeds

ABSTRACT

The creation of genetic disease resistant apple tree breeds started in the years 1952 -1953, since the year 1970, this objective beining the exclusivity of the improvement program. Following the study of the elites with perspective, in the DUS test, in the period 1985-2006 were homologated and introduced into culture 5 disease resistant apple tree breeds: Pionier, Voinea, Generos (1985); Ciprian (1998), Luca (2006). Te continuation of the studies made possible the homologation and the promotion in culture of other 4 disease resistant apple tree breeds, namely Chindia, Pomona, Discoprim (2008) şi Dacian (2009), breeds that will comlete the resistent apple tree assortment.

Determination of lead and cadmium from apples using electrothermal atomic absorption spectrometry

G.Vasile[1], M. Artimon[2], M. Pele[2], F. Israel-Roming[2], O. Iordache[2]
[1]Department Agrochemistry, [2]Department of Chemistry
University of Agronomic Sciences and Veterinary Medicine Bucharest

Keywords: fruits, heavy metals, contaminants, food safety, ETAAS

ABSTRACT

Determination of chemical contaminants in food is important in environmental monitoring for the prevention, control and reduction of pollution. Heavy metals are one of a range of important types of contaminants that can be found on the surface and in the tissue of fresh fruits and vegetables. The presence of heavy metals in living organisms is harmful, undesired and it may create health problems. The aim of the study was to achieve lead and cadmium levels in apples collected from Romania. The measurements were performed using ETAAS technique. The lead concentration in apples varies from 0.001 up to 0.049mg/kg, with a mean value of 0.009 mg/kg. The cadmium content is between 0.0005mg/kg and 0.014 mg/kg, with a mean value of 0.005 mg/kg. The levels of lead and cadmium were correlated with those set by Commission Regulation 1881/2006 and Romanian legislation. Also, these levels were compared with those from previous published studies. The lead and cadmium contents obtained after chemical analysis showed that apples could serve as good dietary sources, the heavy metal levels being within safety baseline content for human consumption.

Researches regarding the establishing the favorability and suitability of the acid soils, situated in the western part of the country, for the seed fruit species

Aurora Venig
University of Oradea
venig_aurora@yahoo.com

Keywords: hidropedo-improving system, production capacity, land calibration.

ABSTRACT

The researches that were carried out in Bihor County highlight the favorability and suitability of the main acid soil types in order to establish new orchards. The studies resemble the favorability and suitability classes of the acid grounds from the county for the main seed species. The whole studied area refers to a surface of 272.236 ha, from which 251.816 ha were taken into consideration. This surface represent 92,5% from the entire area, including a number of 56 land territories, situated between Crişul Repede (North), the border to Hungary (West), Crişul Negru (South) and Munții Apuseni (East).

VITICULTURE&OENOLOGY

The influence of terroir on the chemical composition of Fetească Neagră red wines

Arina Oana Antoce, I. Nămoloşanu
Department of Viticulture and Enology, Center for the Wine and Vine Studies and Sensory Analysis
University of Agronomical Sciences and Veterinary Medicine of Bucharest
aantoce@yahoo.com

Keywords: physico-chemical analysis, colour analysis, winemaking technology, oenoclimatic suitability index, total polyphenolic index.

ABSTRACT

Grapes of Fetească neagră produced in three different viticultural centres (Pietroasa, Valea Călugărească and Odobeşti) were used to obtain a total of 27 batches of red wine, meaning 3 variants with 3 repetitions for each of these centres. Variants differed with respect to the oenological materials used (selected yeast, enzyme, colour enhancer). The wines obtained were subjected to standard OIV physico-chemical analysis as well as sensory analysis of colour. Interpretation of the results indicates the wide variation of the properties of Fetească neagră wines according to the terroir of the cultivation place. Moreover, the differences induced by terroir appeared to be more significant than any of the differences induced by the variations of the technology or materials employed during winemaking.

The influence of terroir on the sensory profile of Fetească Neagră red wines

Arina Oana Antoce, I. Năməloşanu
Department of Viticulture and Enology, Center for the Wine and Vine Studies and Sensory Analysis,
University of Agronomical Sciences and Veterinary Medicine of Bucharest
aantoce@yahoo.com

Keywords: sensory analysis, sensory profile, winemaking technology

ABSTRACT

Wines obtained by several variants of winemaking technology from grapes of Fetească neagră harvested from the viticultural centres of Pietroasa, Valea Călugărească and Odobeşti were subjected to sensory analysis using a specially designed score sheet in order to praise differences induced by terroir. Results show that, although the wines were obtained from the same grapevine variety, the effect of terroir is clearly discernable in the sensory profile of the wine. Moreover, the differences induced by terroir were more significant then any variations due to the factors related to the winemaking technology, under the experimental conditions used.

Volatile profiles of Fetească Neagră wines from three regions differentiated by the use of an electronic nose

Arina Oana Antoce, I. Năməloşanu
Department of Viticulture and Enology, Center for the Wine and Vine Studies and Sensory Analysis,
University of Agronomical Sciences and Veterinary Medicine of Bucharest
aantoce@yahoo.com

Keywords: electronic nose, Heracles, oak chips, sensory profile, fingerprint

ABSTRACT

Wines of Fetească neagră obtained from grapes harvested in 3 different viticultural centres (Pietroasa, Valea Călugărească and Odobeşti) using 5 technological variants for each viticultural centre and 3 repetitions for each variant, were assayed using an electronic nose (Heracles Analyzer, Alpha MOS, France). Results show excellent differentiation of wines based on their origin and/or technological variant used during winemaking. In particular, it was possible to discriminate wines produced using oak chips aromatization from those obtained without this technique.

Researches concerning the correlations between environmental conditions influence from the fruit buds differentiation period on grape yield levels in Odobeşti Vineyard

Marioara Bosoi, Gh. Mihu, Ionica Bosoi
Research and Development Station for Winegrowing and Winemaking Odobeşti

Keywords: bud burst differentiation, bioclimatic indicators, heliothermic, hydrothermic, fertility, interrelationsheep

ABSTRACT

Fertility, and thus level of annual grapevine yield are mostly determined by the evolution of flower induction and fruit buds differentiation processes, with the two periods (before and after bud burst) as well as conditions during flower bloom. In respect, a very important role in development of these processes is held by the favourability of the environmental factors of these periods. This paper aims to study the correlations between annual grape yields in the Odobeşti vineyard from 1999 to 2008, with main ecological indicators of synthesis from fruit buds differentiation period but also, with the main climatic factors from the blooming period. This study has highlighted a positive correlation with various degrees of intensity between the grape yield with the grapevine bioclimatic index (G.b.i.) and the heliothermic index (H.I.) from the fruit bud differentiation period, and also with useful thermal balance (U.T.B.) from blooming period. There has also, been noted a negative correlation, however insignificant, of grape yield with hydrothermic quotient (H.Q.) from differentiation period and also with precipitations (Pp.) during bloom.

Perspective elites obtained at SCDVV Blaj

C.C. Cristea, A. Comsa, St. Cristea, Maria Comsa
Research Station for Viticulture and Enology Blaj

Keywords: viticulture, grapes, homologated elite

ABSTRACT

The activity of improving vine types at the Research Station for Viticulture and Enology Blaj (SCDVV Blaj), is a 50 year old tradition. Ten cloning elites were homologated in the Târnave Vineyard and not only (Fetească regală - 21; Traminer roz- 60; Pinot gris- 34; Saugvinon – 9; Neuburger-10; Muscat Ottonel-12; Riesling italian -3; Rhin Riesling -72; Iordana-91; Feteasca alba -29.)

Through sexual crossbreeding there were homologated:

- Three types of superior white wines: [Astra,(1995 Moldovan S.D., Cristea St.,Bacila Al.), Blasius (1994, Cristea St., Moldovan S.D., Bacila Al.), Selena (1995, Cristea St., Moldovan S.D., Bacila Al.)].
- One type for red wines: [Amurg (1989, Csavossy Gh.)].
- Three types with biological resistance to diseases and frost: [Brumariu (1983, Toader M. Moldovan S.D. Cristea St.); Radames (1994 Moldovan S.D., Cristea St., Bacila Al.); Rubin (2007, Moldovan S.D.)].

Effects of climate change on dry matter accumulation and partitioning at grapevine

L. Dejeu[1], Diana Mereanu[2], Petruta Matei[1], Catalina Agavriloaei[1]
[1]University of Agronomical Sciences and Veterinary Medicine Bucharest
liviudejeu@yahoo.com; petruta_99@yahoo.com
[2]National Office for Vine and Wine Bucharest
dmereanu@yahoo.com

Keywords: climate change, pruning system, dry matter, sugar

ABSTRACT

The grapevine is a good plant indicator of climate changes. The climatic changes of the last years have significantly influenced the growth and the fructification at the grapevine. The aim of this research is to study the influence of climatic change on the dry matter partitioning and sugar accumulation at grapevine in the period 2006-2008. The research was carried out in Bucharest (N 44^0 $25^{'}$, E $26^0 6^{'}$) in a vineyard of Fetească regală cultivar grafted on Kobber 5 BB. Vines were spaced 2.20 x 1.20 m by using three pruning systems (Guyot on demi-high trunk, Cazenave cordon and spur-pruned cordon) and two levels of bud load (10 and 15 buds/m^2). As a consequence of the variability of the climatic conditions from one year to another, the accumulation of dry matter in the aerial annual organs of the vine (leaves, wood and grapes) registered high variations, according to the hydric and the heliothermic regime, the pruning systems and bud loads. The year 2007, the hottest in the last decade, with a pronounced deficit of precipitations from the interval May-August determined a predominance of a productive activity and high content of sugar (224.1 g/l in Guyot on demi-high trunk, 216.2 g/l in Cazenave cordon and 202.7 g/l in spur-pruned cordon). In the spur-pruned cordon, the dry matter accumulated in the pruning wood represented 27% and in the grapes 52%. The climate warming accentuated in the last years has influenced positively the quality of grapes allowing the acquirement of high quality wines.

The study of fertility and productivity at Vilarom and Alutus grape varieties in Drăgăşani Vineyard

D.G. Dinu, S.S. Gorjan, C.E. Farcas

Keywords: Grape variety, fertile copse percentage, fertility coefficient, productivity coefficient, grape weight average

ABSTRACT

The study was done in Dealul-Olt plantation belonging to S.C.D.V.V. - Drăgăşani, part of Drăgăşani vineyard. The study followed the coefficients of fertility and productivity of new two grape varieties, Vilarom (for obtaining flavour wines), and Alutus (for obtaining red superior wines) in the years 2007 and 2008.

Optical methods used for wines studies

Daniela Giosanu, Loredana Vîjan
Faculty of Science, University of Pitești

Keywords: colour, absorbance spectrum, authenticity

ABSTRACT

Optical methods are one of the favourite techniques for the inspection of wine quality, because are rapidly, simply and versatility. In this paper, the colour and absorbance spectrum were studied for different sorts of red wines (Fetească Neagră, Pinot Noir, Merlot and Cabernet Sauvignon) from the same year (2000) and the same place (Orevița). We choose to observe the same sort of wine (Fetească Neagră - Orevița) from different years (2000, 2001 and 2003), too.

Examination of phytotoxic effect of viricides on grapevine in controlled medium

I.C. Guță[1], E.C. Buciumeanu[1], R.N. Gheorghe[1], Al. Teodorescu[2]
[1]National Research&Development Institut for Biotechnology in Horticulture Ştefăneşti-Argeş
[2]University of Piteşti, România

Keywords: *Vitis vinifera*, GFkV, chemotherapy, *in vitro*, phytotoxicity

ABSTRACT

The aim of the study was to evaluate the phytotoxicity of antiviral drugs ribavirin and oseltamivir used in controlled medium, in various concentration and period of exposure in grapevine virus elimination by *in vitro* chemotherapy. Grapevine shoot cultures belonging to *V. vinifera* L., cv Canner infected by fleck virus (GFkV) were grown on M&S (1962) basic medium supplemented with antiviral chemicals for *in vitro* sanitation. Ribavirin or oseltamivir in increasing concentrations were added to the proliferating medium for several subsequent subcultures. In the end treatment, regenerated shoots were transferred on rooting M&S medium. Phytotoxicity was evaluated on *in vitro* drug-treated plantlets regarding multiplication rate and mortality for each antiviral agent. Leaf samples collected from regenerated acclimated plants determined as GFkV-free by enzyme-linked immunosorbent assay (ELISA) were subjected to biochemical analysis (polyphenols, soluble carbohydrates, assimilating pigments concentration) and variety identity analysis (polymerase chain reaction - PCR) of the studied grapevine genotype. The increasing of the exposure induced the significant decreasing of the multiplication rate for each chemical drug concentration. The phytotoxic effect has diminished with plant transfer on free-drug rooting medium. Not significant differences between drug treated and control referring to the biochemical compounds have been registered. The trueness to type was total. The phytotoxic effect should be correlated with viruses elimination efficacy and grapevine infected genotype.

Research concerning the behaviour of some new table grape cultivars in Huşi Vineyard

N. Irimia[1], L. Dejeu[2], Petruta Mihaela Matei[2]
[1]S.C. Vincon Vrancea S.A., Focşani, Vrancea
nelu_m_irimia@yahoo.com
[2]University of Agronomical Sciences and Veterinary Medicine Bucharest
liviudejeu@yahoo.com, petruta_99@yahoo.com

Keywords: table grapes, new cultivars, Huşi vineyard

ABSTRACT

This study presents the behaviour of some new table grapes cultivars (Azur, Tamina, Victoria, Napoca, Xenia and Moldova) in the climatic conditions of the Husi vineyard. The researches were performed between 2006-2008 in a plantation founded in 1989, by using the rootstock Kober 5BB and planting distances of 2.2/1.2. By comparing the main climatic indicators of the experimenting period to the multi-annual average, the existence of some higher heliothermal resources are found out, as well as an acute deficit of precipitations, the effects of global warming being noted. Out of the cultivars, Victoria and Xenia had the best behaviour.

The quality of Cardinal grape variety through the use of biologically-active substances

Gh. Nicolaescu[1], Antonina Derendovskaia[2], N. Perstniov[1], A. Stirbu[1],
Olga Tcaciuc[2], Ana Nicolaescu[3], T. Ciobanu[4], Silvia Josan[2]
[1]Department of Viticulture, State Agricultural University of Moldova
gh.nicolaescu@gmail.com
[2]Department of Plant Physiology, State Agricultural University of Moldova
[3]Department of Economics and Statistics, State Agricultural University of Moldova
[4]Sauron Ltd, Moldova

Keywords: table grapes, Cardinal, gibberellic acid.

ABSTRACT

The culture of table grapes has become a complex issue today; the settlement will depend on the correct choice of varieties for cultivation, harvesting, storage and selling of grapes. Worldwide, the vines' cultivation in the last decade, had subjected a changes of vine assortment but the high results obtain in developed countries now. Without knowing the basic laws of physiological growth and fruiting vines, and methods of adjustment can not be obtained high yields, stable and high quality with low cost and long-term use of the productive capacity of grapes. The objectives of the study include the identification of the influence of the treatment period, the optimal dose of gibberellin on the quantity and quality of grapes and efficiency of table grapes of Cardinal variety.

Gibberellin - as a determinant factor of grape's quality of Codreanca (Black Magic) variety

Gh. Nicolaescu[1], Antonina Derendovskaia[2], N. Perstniov[1], A. Stirbu[1],
Olga Tcaciuc[2], Ana Nicolaescu[3], Tudor Ciobanu[4], Silvia Josan[2]
[1]Department of Viticulture, State Agricultural University of Moldova
gh.nicolaescu@gmail.com
[2]Department of Plant Fiziology, State Agricultural University of Moldova
[3]Department of Economics and Statistics, State Agricultural University of Moldova
[4]Sauron Ltd, Moldova

Keywords: table grapes, Codreanca (Black magic), gibberellic acid.

ABSTRACT

The vine area and volumes of production of table grapes in the country are not stable. In the last 15 years the vineyards decreased by 8 thousand ha (from 28 thousand to 20 thousand ha). The harvest and total production of grapes decreased too. The quality of grapes and the structure of assortment are unsatisfactory. The technological methods, which have a substantial contribution to improving the quality of table grapes, represents: foliar fertilizer use; removal cauliflowers; growth regulators use, which are used little or not use in the vineyards. Growth regulator use in the vineyards is used to improve the appearance of the grapes, increasing the productivity of plants and improve their taste. The purposes of investigations include the identification of the influence of the treatment period, the optimal dose of gibberellin on the quantity and quality of grapes and efficiency of table grapes of Codreanca (Black Magic) variety.

Aspects concerning the influence of alcoholic strength on the insolubilisation of wine's tartaric compounds

G. Odăgeriu[1], C.I. Zamfir[1], V.V. Cotea[2], M. Niculaua[1], Otilia Chiriță[2], Cintia Colibaba[2]
[1]Oenological Research Centre, Iaşi Branch of the Romanian Academy;
odageriu@yahoo.com
[2]University of Agricultural Studies and Veterinary Medicine Iaşi;
vcotea@univagro-iasi.ro

Keywords: Must, wine, alcoholic strength, tartaric compounds, excess tartrates, saturation temperatures.

ABSTRACT

This study presents aspects concerning the influence of the alcoholic strength on the solubility of the tartaric compounds (acid potassium tartrate - KHT and neutral calcium tartrate - CaT), respectively these compounds' insolubilisation during wine processing. For obtaining as much data on the alcoholic strength 0÷20 % vol., an experimental process was realized in laboratory conditions, comprising the alcoholic fermentation phase as well as the mutage technique from the technological process of fortified wine process. At the same time with the increase of the alcoholic concentration during wine formation (fermentation of the must, mutage moment and after), the solubility of the tartaric compounds is practically shown by the diminishing of the main compounds (tartaric acid, potassium, calcium) involved in the insolubilisation and theoretically evaluated, in regard to the values of the concentration and solubility products (P_C, K_S) at -4 ºC, the KHT and CaT excess at -4 ºC and the theoretical saturation temperatures of KHT and CaT. Therefore, according to obtained data, in parallel with alcoholic strength increase, the stability state is more evident, due to tartaric compounds' insolubilisation (mainly of the acid potassium tartrate), fact proved also by the decrease of both the concentration and solubility products as well as diminish of the KHT and CaT excess. Theoretical saturation temperatures ($\mathbf{T_{TS}}$), of the KHT and CaT, mainly dependent on the alcoholic concentration, had a decreasing evolution during the alcoholic fermentation and slightly increasing evolution in wine samples obtained by mutage.

Studies on the useful and harmful fauna within the grapevine plantations of the Odobeşti ecosystem

Aurelia Podosu[1], Gr. Margarit[2], Gh. Mihu[1], V. Bratu[1]
[1]SCDVV Odobeşti
[2]ICDPP Bucureşti

Keywords: harmful, numerical abundance, relative abundance, useful fauna, harmful fauna

ABSTRACT

The paper presents data concerning the evolution and dynamics of the useful and harmful fauna within the Odobesti grapevine ecosystem for several varieties of grapevine. This paper continues the series of researches conducted by systematically observing the evolution over time of useful and harmful fauna, contributing with further information. Thus, the conclusions drawn after the research stated that the percentage of harmful or useful fauna was of 43.58% on the 20.08.2008 and 56.41% on 20.10.2008. Data resulted from this study prove useful for setting the prognosis on the incidence and evolution of populations and the prognosis of the dynamics and the virulence of the attacks of soil pests of interest for the useful and harmful grapevine fauna, meant to contribute to establishing the control plan together with the avoidance of crop loss and the prevention of needless expenses for phytosanitary treatments.

Characterization of oxidative enzymes from white grapes (*Vitis vinifera L. cv. Feteasca regala*)

Carmen Popescu[1], Elena Postolache[2], A. Ciubucă[2], Gabriela Rapeanu[3], T. Hopulele[3], M. Bulancea[3]
[1]"Elena Doamna" Food Industry College Galați
popescucarmen_18@yahoo.com
[2]Research and Development Institute in Viticulture and Vinification "Bujoru", Galați
postolache_elena2000@yahoo.com
[3] Faculty of Food Science and Engineering, "Dunărea de Jos" University of Galați
gabriela.rapeanu@ugal.ro

Keywords: tyrosinase, laccase, peroxidase, optical density.

ABSTRACT

The aim of this paper was to characterize the tyrosinase, laccase and of peroxidase from the white grapes. The research has been done at the Integrated Centre of Research and Education for Applied Biotechnology in Food Industry, Bioaliment Platform, at the Food Science and Engineering Faculty from Galati, during the period 2008-2009. The type of white grapes used for this research was *Feteasca Regala*, which were harvested at full technological maturity from the *Dealu Bujorului* vineyard. In the raw grape must the tyrosinase showed full activity at pH = 6.0 and 25^{o}C temperature by using 4-methyl-pyrocatechol as substrate, in 0,1 M citrate-phosphate buffer. The laccase showed maximum activity at pH = 4.8 and 30^{o}C temperature by using N,N-dimethyl-1,4-phenylendiamine as substrate, 1g/L in citrate-phosphate buffer. The maximum activity of the peroxidase from the grape must was obtained at pH = 6.0 and 25^{o}C temperature using 0.75% pyrogallol, 0.8% hydrogen peroxide as substrate in phosphate buffer.

The oxidative enzymes shown affinity for the specific substrates, fact proved by the value calculated for kinetic parameters (K_m and V_{max} from the Michaelis-Menten equation). Tyrosinase shown a good affinity for the substrate 4-methyl-pyrocatechol (K_m = 0.16129 moli/L and V_{max}= 22.85 OD_{420nm}/min). The laccase presented a good affinity for the N,N-dimethyl-1,4-phenylendiamine substrate (K_m = 1.66 mM and V_{max} = 31.25 OD_{520nm}/min) and the peroxidase had a good affinity for the pyrogallol substrate with an optimum hydrogen peroxide concentration (K_m = 23.2 mM and V_{max} = 4.54 OD_{420nm}/min).

Effect of hydrogen cyanamide (Dormex) on bud break, yield and quality of Thompson Seedless grapes under the Egyptian Nile Delta conditions

R.M.F.A. El Alem[1], L. Dejeu[2], Petruta Mihaela Matei[2]
[1]Hort. Res. Inst. Agric. Res. Center, Kafr El-Sheikh, Egypt
tabark2222@yahoo.com
[2]University of Agronomical Sciences and Veterinary Medicine Bucharest
liviudejeu@yahoo.com, petruta_99@yahoo.com

Keywords: table grapes; subtropical conditions; hydrogen cyanamide

ABSTRACT

This work studied the effect of hydrogen cyanamide on bud break and yield of *Vitis vinifera* L. cv Thompson Seedless. The grapevine was conducted on spur-pruned training system under subtropical conditions in the Nile Delta (Egypt). Dormex (49% hydrogen cyanamide) was spayed on vines in the winter of 2006, 2007 and 2008, right after pruning, in the concentrations of 2, 3 and 5%, at three moments (1, 8 and 15 January). Percentage of bud break, yield and total soluble solids were analyses separately. As a consequence, there was an increase in bud break percentage, yield and soluble solid in grape juice. It was observed that hydrogen cyanamide caused on earlier spouting. The results show that hydrogen cyanamide may be an efficient tool to promote grapevine bud break and yield table grapes in the mild winter conditions.

Study concerning authenticity and typicity of wines obtained from Fetească Neagră grape variety

C.I. Zamfir[1], G. Odăgeriu[1], V.V. Cotea[2], M. Niculaua[1], Cintia Colibaba[2], B.C. Nechita[2], O. Georgescu[2]
[1]Oenological Research Center, Romanian Academy - Iaşi Branch
czamfir@uaiasi.ro
[2]University of Agriculture and Veterinary Medicine „Ion Ionescu de la Brad" Iaşi
vcotea@uaiasi.ro

Keywords: Anthocyans, Fetească neagră, maceration, colour difference.

ABSTRACT

Wines' authenticity and typicity is a difficult but important problem that can be solved by a correct quantification of a large segment of aspects, starting with vine cultivation conditions and ending with ways of selling the wine. Establishing methods of wines' authenticity and typicity are represented by the complex of all experimental and sensorial techniques that, by data processing, confirm or infirm the characteristics of a certain wine. This study has as main objective obtaining data referring to the evaluation of authenticity and typicity of red wines obtained from Fetească neagră grape variety, of three Romanian vineyards (Panciu, Dealu Bujorului, Uricani-Iaşi and Copou-Iaşi), through different maceration-fermentation procedures (traditional maceration, thermo-maceration, roto-maceration and carbonic maceration). Identification of anthocyans in wines made from Romanian traditional grape variety Fetească neagră (*Vitis vinifera L.*) was carried out and their profile was determined by high-performance liquid chromatography using a HP 1100. The dependence of anthocyans profile and specific characteristics from different maceration treatments was investigated and results indicate that the different maceration treatments exert important differences on the anthocyans' content and important variations in the colour and composition of Fetească neagră wines. The different kinds of maceration and the vineyards' location determine different influences to the participation percentage of each anthocyan in the specific profile of Fetească neagră wine.

BOTANY & PHYSIOLOGY

Contributions to the knowledge of synanthropic flora from the Mioveni area

M. Andrei[1], Marinela Roxana Roşescu[2]
[1] Faculty of Biology, University of Bucharest
prof.marinandrei@yahoo.com
[2]National High School "Al. Odobescu" Mioveni, Argeş
marirosescu@yahoo.com

Keywords: taxonomic categories, life forms spectrum, phytogeographic elements, ecological groups, phytomass

ABSTRACT

The research of synanthropic plant species from the urban environment offers information about their relation with the anthropic environment in which they live, on one hand, and on the other hand, they can be used as indicators of the pollution level and pollution effect on the environment. The research was performed in the city of Mioveni from June 2008 to may 2009 to compile an inventory of the flora, to establish biological and ecological spectra, the phytogeographic elements and their economic importance. The fresh above ground phytomass of the synanthropic plant species from 10 sample location, was determined. It was identified 188 species (from 27 orders and 36 families). The most species are from the following families: Asteraceae (40 species), Poaceae (23 species), Fabaceae (16 species) and Brassicaceae (15 species). The biological and ecological categories spectrum shows the high percentages of hemicryptophytes (32%) and therophytes (25%), eutrophic species (56%), xeromesophilous-mesophilous species (30%) as well as **eurytherm** and euryacide species. The phytogeographic spectrum shows a high number of species from Eurasia (88 species). From the total number of identified species 55% are **polyploid** and 30% (55 species) present economic importance. It was found that the fresh above ground phytomass varies between 340 g m^{-2} (*Lactuca serriola*) and 20 g m^{-2} (*Setaria viridis*), for a number of 32 species; 6 species are dominant through their phytomass (average values between 340 g m^{-2} and 200 g m^{-2}). The results enable us to estimate the value of the synanthropic plants as ecologic indicators in the Mioveni area.

Contributions to the knowledge of species composition volatile oil from the leaves of *Juniperus sabina L. and Juniperus virginiana L.*

M. H. Baath[1], I. Burzo[2]
[1]Syria
[2]Department of Horticulture, USAMV Bucharest

Keywords: Juniperus, volatile oil

ABSTRACT

Volatile oil content varied according to species season, the largest amount being determined in leaves of species *Juniperus sabina*, in August. Volatile oil extracted from leaves of *Juniperus sabina* was characterized by the presence of significantly higher bornil acetate, which had an annual average of 36.73% of all components identified, with the share in the period from November – May. Characteristic of the volatile oil of *Juniperus sabina* species is the presence of β-thujone, which held from 10.40 to 11.70% of all components identified during noienbrie - February. Volatile oil extracted from leaves of *Juniperus virginiana* was characterized by the presence of significantly higher and lower seasonal variations of Safrol and Eugenol methyl, and elemol, with a maximum accumulation in the summer.

Biochemical research on fresh *Herba* of *Artemisia Vulgaris* L. and *Artemisia Absinthium* L. (*Asteraceae*)

Monica Badea, Liliana Bădulescu, I. Burzo, Aurelia Dobrescu, Mihaela Sima, Ioana Pădure, Elena Delian
Department of Botany and Plant Physiology, Faculty of Horticulture, USAMV Bucharest
monalisa@yahoo.com

Keywords: *Artemisia absinthium, Artemisia vulgaris, Asteraceae,* flavonoids, polyphenols, fresh *herba*

ABSTRACT

The family *Asteraceae* is very distinctive in its chemical attributes and several classes of plant compounds are characteristic of this family. Many of these substances are toxic or show significant physiological activity. Several secondary metabolites, like terpenoids and flavonoids, characterize the chemical composition of the genus *Artemisia*. This article presents a comparative study on dry matter content, water, ash, flavonoids and total phenols content of *Artemisia absinthium* L. and *Artemisia vulgaris* L. (Asteraceae). These species are considered medicinal herbs and are used in therapy in various diseases. The flavonoid and total phenolic contents of these studied species revealed a significant variation depending on the ecotype and species. The flavonoid content from *herba* of *Artemisia absinthium* L. is in inverse ratio to the total phenolic content, while the flavonoid content from *herba* of *Artemisia vulgaris* L. varies like the total phenolic content.

The physiological monitoring of biotic stress on strawberry plants during the treatments with immunostimulator extracts

Liliana Bădulescu[1], Elena Delian[1], Aurelia Dobrescu[1], S. Matei[2], I. Burzo[1]
[1]Department of Botany and Plant Physiology, USAMV Bucharest
[2]I.C.P.A. Bucharest

Keywords: *Fragaria x ananassa*, photosynthesis, transpiration, respiration, Elsanta, Marmolada

ABSTRACT

Strawberries represent one of the most widely grown fruit crops and *Botrytis cinerea*, the fungal agent causing gray mould or fruit rot is one of the most important fungi causing losses in strawberry production, also lead to a very limited post harvest live of strawberries. So, control of diseases is a subject of great importance for biotechnologists and the future of sustainable agriculture will increasingly rely on the integration of biotechnology with traditional agricultural practices. Therefore, the aim of the present study was to investigate the physiological changes in 2 strawberry cultivars (Elsanta and Marmolada) induced by chemical treatments with some contact and systemic fungicides, as well as the treatments with 4 extracts with immunostimulator properties, codified E1, E2, E3, E4.

Diagnosis possibilities of water stress in synanthropic plants

E. Chițu[1], Marinela Roxana Roşescu[2]
[1]Research Institute for Fruit Growing Piteşti – Mărăcineni (RIFG), Romania
emilchitu@gmail.com
[2]National High School "Alexandru Odobescu" Piteşti, Romania
marirosescu@yahoo.com

Keywords: crop water stress index, transpiration, ambient stress, anthropic conditions

ABSTRACT

The water stress indicator (crop water stress index, CWSI) is a measure of the transpiration rate of a plant, influenced by the leaf and air temperature difference from the plant's vicinity and the air pressure deficit of the water vapors from the atmosphere. The experiments were realized in July-August 2008 and 2009 for six species in the cities Pitesti, Mioveni and Maracineni: *Cichorium intybus* L., *Conyza canadensis* (L.) Cronq., *Erigeron annuus* L. (Pers.), *Lactuca serriola* Torn., *Polygonum aviculare* L. şi *Echinochloa crus-galli* (L.) Beauv. For those species we calculated the CWSI to estimate the water stress on the selected plants in the urban environment conditions. The detached leaf's transpiration intensity was determined in order to explain the adaptation mechanism through which the plants control their water loss. The analyzed species were exposed to a less accentuated water stress while vegetating in the soil and to a more intense one they were grown in the asphalt cracks. *Cichorium intybus* had the smallest CWSI value (0.26) while *Lactuca serriola* the highest one (0.44). The correlation between the transpiration intensity and the time elapsed from the leaf's separation from the plant for the analyzed plant species is graphically illustrated in the form of regression polynomial curves and the R^2 determination coefficient has also been determined. The species that has high level of transpiration rate in one hour after excision was *Polygonum aviculare* (665 mg dm^{-2} h^{-1}). The highest water loss through transpiration (883 mg dm^{-2} h^{-1}) was recorded during the first 15 minutes after the leaf's excision from the plant – the value was significantly higher than the loss recorded in any other recorded stage. After 30 minutes the transpiration intensity differences between species disappeared. The highest percentage of water loss (11% of total initial water content) was recorded on *Polygonum aviculare*. The percentage of water loss was significantly higher during the first 15 minutes from the water quantity lost in any other moment of the experiment (one hour).

The influence of gibberellic acid treatments on *Paeonia Tenuifolia* seeds germination, under controlled temperature conditions

Elena Ioana Cucu, Elena Şelaru
Faculty of Horticulture, USAMV Bucharest

Keywords: peony, seeds, dormancy, germination, stimulators

ABSTRACT

Two distinct experiments took place in different controled temperature conditions. In the first experiment, with preliminary warm stratification of seeds (28°C), the gibberellic acid treatment did not have any effect on seeds germination, not even after 13 weeks, as well as the control. Only the transfer of seeds to low constant temperature of 8°C determined seeds germination, after only 3 weeks, both in case of the control and of the gibberellic acid treatments. In the second experiment, when seeds were directly put into cold controled temperature of 8°C, the gibberellic acid treatment had an overwhelming influence. The maximum germination percentage (80%) was registered at V_3 (300 mg/l), comparated to the control, where only 35% of the seeds germinated. This fact demonstrates that the gibberellic acid can replace the warm stratification in case of seeds germination, but can not replace the cold stratification.

The influence of both petal thickness and ecological conditions on some peony cultivars flower resistance on plant

Elena Ioana Cucu, Mihaela Ioana Georgescu
Faculty of Horticulture, USAMV Bucharest

Keywords: *Paeonia*, petal structure, temperature, flower resistance

ABSTRACT

Four cultivars of two *Paeonia* species were studied in order to see if there is any connection between the flowers resistance on plant and the petal thickness, on the one hand, and between the flowers resistance on plant and the temperature recorded in the flowering period, on the other hand. The study was conducted by means of visual, phenological and microscopic observations. It was observed a positive correlation between the flowers resistance on plant and the petal thickness, as well as between the flowers resistance on plant and the temperature recorded in the flowering period.

Performance of the highbush blueberry cuttings in relation to the growth substrata conditions

Elena Delian[1], C. Bădescu[2], I. Burzo[1], Liliana Bădulescu[1], Aurelia Dobrescu[1], Elena Săvulescu[1], Lenuța Chira[1], Mihaela Ioana Georgescu[1]
[1]University of Agronomical Sciences and Veterinary Medicine Bucharest
[2]Research and Development Fruit Growing Station Voinești

Keywords: *Vaccinium corymbosum*, planting material, physiological parameters, vigour

ABSTRACT

Physiological behaviour of highbush blueberry cuttings was studied in 2008, in a pot experiment under natural orchard conditions of the experimental field of the Faculty of Horticulture Bucharest. The plants were transferred a year before in pots containing different percent of peat, manure, sawdust, litter, and distillation residues. Leaf dry matter, water and ash levels, leaf gas exchange responses and assimilatory pigments related to substrata composition was examined. Physiological indicators have been positively affected with organic substrata presence, as it was emphasised especially at V3 (75.00 % peat, 25.00 % manure), V6 (50.00 % peat, 50.00 % litter) and V8 (50.00 % peat; 50.00 % distillation residues). At the opposite pole there was situated V4 (50.00 % peat, 50.00 % sawdust). Plant growth and development was modified by substrata, ramification and branches length, also fructification was particularly affected.

The chemical composition of essential oils from some Romanian spontaneous species of *Lamiaceae* and their taxonomic significance

Aurelia Dobrescu, Liliana Bădulescu, I. Burzo, Elena Delian, Elena Săvulescu
Department of Botany and Plant Physiology, USAMV Bucharest

Keywords: volatile compounds, medicinal and spicy plants

ABSTRACT

The essential oils of ten Romanian spontaneous species of *Lamiaceae* family were compared in order to determine the main and the specific compounds of these aromatic plants and their taxonomic significance. There were 116 compounds identified by GC/MS in the hydrodistillates of the whole aerial parts of *Acinos alpinus* L., *Calamitha einseleana* F.W.Schultz, *Mentha piperita* L., *Marrubium peregrinum* L., *Marrubium vulgare* L., *Nepeta musimii* L., *Phlomis pungens* L., *Phlomis tuberose* L., *Salvia nutans* L. and *Melissa officinalis* L. All species contain, with a single exception (melissa), and with a great variability α-pinene, β-pinene, linalool, β-caryophyllene, germacrene D, α-cadinol. *Melissa officinalis* is an exception of this "*Lamiaceae*" rule, because of its volatiles: α-, β-citronellol, α-, β-citral, methyl citronellol. The other studied species contain particular volatiles as a species specificity: *Acinos alpinus*-germacrene D (29.33%), carvacrol, β-cariophyllene, *Calamitha einseleana*-piperitone (29.05%), eucarvone, *Mentha piperita*-piperitone oxide (61,93%), eucalyptol, *Marrubium peregrinum*-germacrene D(40.02%), germacrene B, *Marrubium vulgare*-γ-elemene (35.34%), β-cariophyllene, *Nepeta musimii*-germacrene D (26.71%), *cis* β-ocimene, nepetalactone, *Phlomis pungens*-germacrene D (79.54%), *Phlomis tuberose*-germacrene D (42.45%), β-caryophylene, *Salvia nutans*-germacrene D (66.56%), β-caryophyllene. A taxonomical dendrograme based on the principal component was designed and discussed.

Morphological peculiarities of the species *Polygala amara* L.

Mihaela Ioana Georgescu
Department of Botany and Plant Physiology, USAMV Bucharest

Keywords: bitter leaf, inflorescence branched, local form

ABSTRACT

Commonly found in calcareous grassland to 2,000 m, the *Polygala amara* populations have a variability of morphological characters in the corolla, wings and fruit, which determined its division into 2 subspecies: *P. amara* subsp. *amara*, and *P. amara* subsp. *brachyptera* (Chod.) Hayek. We found that plants of *P.amara*, occurred at 1650 m altitude on the eastern slope of the Furnica Mountain (Prahova district), are belonging to *brachyptera* subspecies, but them differ from the originating species by the presence of secondary axes of inflorescences, formed in upper third of the stem. This population was considered by some authors as *Polygala alpina* species (Poiret) Steudel (Kral, 1974).

The influence of the substratum on the blueberry leaf structure

Mihaela Ioana Georgescu[1], Elena Delian[1], C. Bădescu[2]
[1]Department of Botany and Plant Physiology, USAMV Bucharest
[2]Research and Development Fruit Growing Station Voineşti

Keywords: upper and lower epidermis, mesophyll, type of substratum

ABSTRACT

To provide the role of the substratum on the blueberry structure of the leaves were used 16 mixture types, *Blueray* cultivar – two years hardwood cuttings. The anatomical observations, conducted on cross-sections of the blade to the optical microscope, emphaciced that: the 16 combinations used for making the substratum had different effects on the structural components of the foliar limb, both from the point of view of their dimensions and of the structure of the tissue and the data can be compared by grouping the variants by the recipe of the mixture used.

Contributions to the knowledge of physiological and biochemical processes of the tobacco cultivar Virginia 180

A.D. Ionescu, I. Burzo, Salomeea Oana Ionescu
Department of Plant Physiology, USAMV Bucharest

Keywords: *Nicotiana tabacum,* chemical composition, respiration, transpiration, photosynthesis

ABSTRACT

This paper presents data concerning evolution of physiological and biochemical processes of the tobacco cultivar Virginia 180. A determination were made during vegetative growth and generative period, the analysed organs being the root, stem, leaves from the superior half of the plant, basal leaves and flowers. It has been determined the content of assimilating pigments from leaves, the intensity of the photosynthesis and transpiration, variance of respiration process in different organs, water content, total dried substance and mineral substances, also content of mineral elements of the tobacco plant organs. The chlorophyll quantity from leaves varied between 45,11mg /100 g and 151,48 mg/100 g and the carotenes varied between 10,03 mg/100g and 29,86 mg/100g. Intensity of the photosynthesis process and transpiration varied between 1,27 µmoles $CO_2/m^2/s$, respectively 1,52 mmoles $H_2O/m^2/s$ in the basal leaves and 3,66 µmoles $CO_2/m^2/s$, respectively 2,88 mmoles $H_2O/m^2/s$ in the leaves from the top of the plant. Respiration intensity varied between 312,09 mgCO_2/kg/h for the top leaves and 32,12 mg CO_2/kg/h for roots. The highest content in water was found in top leaves (86,85%), the total dried substance in roots and the highest amount of mineral substance was found in basal leaves. Among the mineral elements the most resulted was calcium, which content varied between 1157 mg/100g fresh substance (in the leaves from the base of the plant) and 148,68 mg /100 g (in flowers), potassium, which varied between 532, 59 mg /100g (in the flowers) and 350 mg/100g (in basal leaves) and magnesium with a maximum of 195,68 mg in basal leaves and a minimum of 69,11 mg in root.

The correlation between chlorophyll quantity and the intensity of the photosynthesis process of some *Pisum sativum* cultivars during vegetation period

Salomeea Oana Ionescu, I. Burzo, A.D. Ionescu
Department of Plant Physiology, USAMV Bucharest

Keywords: dry pea, photosynthetic pigments, croquetout, mangetout, afila

ABSTRACT

This paper presents data concerning intensity of the photosynthesis process and the amount of assimilating pigments from leaves of some *Pisum sativum* cultivars also it was made a correlation between the obtained data. The analyzed cultivars were: Oregon Sugar Pod („mangetout" cultivar type), Sugar Snap („croquetout" cultivar type), afila pea cultivar Dora and Diana cultivar. Determinations were made during the phenophases mentioned in literature. First one is the phenophases of vegetative growth that ends at the start of flowering; second one is between flowering and the final stage of seed abortion, the third period is equivalent of the time period between the final stage in seed abortion and the moment when the last pod on the plant contains one seed bigger than 6 mm. The final phenophases last until physiologic maturity of the seeds. The Total Chlorophyll quantity from leaves varied between 203,3 mg/100 g and 69,3 mg/100 g and the intensity of the photosynthesis varied between 18,74 µmoli CO2/m²/s and 6,34 µmoli CO2/m²/s. At the analyzed *Pisum sativum* cultivars Diana and Dora we found between intensity of photosynthesis ant chlorophyll amount a very strong correlation.

Morpho-anatomical changes in *Quercus rubra* L. leaf under pollution conditions

Elena Săvulescu, Elena Delian, Vasilica Luchian, Constantina-Lenuța Chira
University of Agronomical Sciences and Veterinary Medicine Bucharest

Keywords: Red Oak, pollution, leaf changes

ABSTRACT

Atmospheric pollution differentially affects some plant species. Besides resistant species to this abiotic stress factor there is *Quercus rubra* due to a specifically leaf cito-hystological configuration. For this specie, matured leaves were randomly collected from polluted and non-polluted habitats in Bucharest City and cross-sections have been carried out in leaf and petiole. Followings the microscopically observations and specifically measurements it can be noticed that: A higher stomata number on leaves epidermal of samples from polluted area. Leaf mesophyll was thinner in the case of polluted leaves. Leaf presents secondary formations in the principal limb nervure and in the petiole there are collateral-open type floem-xilem vascular fascicles. At some polluted leaves, in the median nervure there are two vascular fascicles, as opposite to others samples which had only one vascular fascicle. At some unpolluted leaves, in the median nervures there was observed lenticels, an uncharacteristic formation for leaves. There were not registered significantly differences between polluted and unpolluted leaves, as regard as leaf area.

Anatomical peculiarities of the vegetative organs in the species *Kleinia repens*

Liliana Cristina Soare, Codruța Mihaela Dobrescu
Faculty of Sciences, University of Piteşti
soleil_cri@yahoo.com

Keywords: stem, phylloclade, cortical bundles, xerophily

ABSTRACT

Kleinia repens is a succulent perennial plant having medicinal properties, which is cultivated in Romania as an ornamental plant. Both the stem and the phylloclades present a number of anatomical peculiarities that represent adaptations to the xerophyte environment. The well-developed cortex of the stem, made up of over 20 cell layers, is mostly constituted of aquiferous tissue. The vascular cortical bundles, which are characteristic of other xerophilous plants, too, have an important part in providing water for the very thick rind. The epidermis of the phylloclade is covered by the cuticle and a thick layer of wax, and the stomata are situated a little below the level of the epidermis, a location typical of all xerophilous plants. The central cylinder of the phylloclade exhibits collateral bundles that have the xylem strand is oriented towards the centre of the phylloclade, very much as in the stem; this proves the fact that this leaf-like organ is in fact a metamorphosed assimilating stem.

OTHER FIELDS

Assessment of oxidases activities in different parts of cereals

Daniela Balan, Florentina Israel-Roming, Gabriela Luta, Evelina Gherghina
Faculty of Biotechnologies, USAMV Bucharest

Keywords: superoxide dismutase, peroxidase, wheat, rye, oxidative stress

ABSTRACT

The human activities influence the soils in many industrial regions by contamination with various pollutants and affect the cultivated plants. In order to improve the plant's protection it is important to understand the mechanisms contributing to the stress tolerance. The molecular defense systems of the plants are composed of different metabolites and oxidative enzymes.

The purpose of this paper was to reveal the particularities of the activity of some oxidases in plants subjected to a stress treatment. Therefore samples of cereals harvested from heavy metals contaminated fields were analyzed in order to assess the activities and the distribution of these enzymes in different parts of the plants. The activities of superoxide dismutase and peroxidase and the content in proteins were measured in grains, stalks and roots of wheat and rye.

The obtained results showed that the specific activity of superoxide dismutase was higher than the peroxidase activity in the analyzed plants, both in grains, stalks and in roots.

The comparative study of the enzymatic activities in different parts of the cereals demonstrated that both superoxide dismutase and peroxidase were more active in roots than in the other analyzed parts. Moreover, the peroxidase registered very small values both in the stalks and in the grains of wheat and rye.

Long term effects of mineral fertilization upon Preluvosol and crop productivity at Sanandrei area

Vera Carabulea[1], C. Marinca[2], I. Tambota[3], Elisabeta Dumitru[1], Eugenia Gament[1], Georgiana Plopeanu[1]
[1]Agro-chemistry and Environment Protection, National Research and Development Institute of Soil Science Bucharest,
[2]USAMVB Timişoara
[3]Soil and Survey and Agro-Chemistry Office – Timişoara

Keywords: bulk density, humus content, crop yields.

ABSTRACT

Paper is showing data obtained in long-term experiments set-up more than 30 years ago in area of the country related to specific local conditions. The experiment has two mineral fertilizer treatments: N and P doses, in a split plot design. The experiment is under main crop rotations: winter wheat – barley – maize –soybeans, cultivated in conventional tillage. Is located in vest part of the country with dominant Preluvosol soils types, medium-fine texture, moderate to reduced contents of available nutrients, moderate climatically conditions with a relatively good distribution during the year. Soil sampling has done in summer 2007 under significant mineral fertilization doses according to yield obtained. Crop yields, as well as climatically conditions had annually recorded. Different data related to crop yield were obtained and a few relevant physical (soil compactness, soil water permeability, water retention and availability, soil structure aggregates hydro-stability) and chemical (reaction-pH in water, total nitrogen, available phosphorus and potassium content) properties under different main mineral fertilization treatments, at a few suggestive soil layers into soil profiles.

Achievement of some fruit-based concentrated products, with high nutritional value, destined to diet-therapy of iron deficiencies population

Monica Catană[1], Luminița Catană[1], Liliana Bădulescu[2],
Mioara Negoiță[1], Enuța Iorga[1], Gabriela Lilios[3], V. Ionescu[1]
[1]Institute of Food Bioresources Bucharest
mona.catana@bioresurse.ro
[2]University of Agronomic Sciences and Veterinary Medicine Bucharest
[3]University "Ovidius" Constanța

Keywords: fortified, iron salts, apricots, plums

ABSTRACT

In this paper are presented the results of performed researches for achievement of two fruit-based concentrated products (apricots, plums) fortified with iron. As fortification agents, they were used ferrous sulfate, ferrous lactate and ferrous gluconate, and the fortification levels were 4 mg/100 g end product and 6.5 mg/100 g end product, respectively. Increasing of iron bio-availability in the human body and, in the same time, assurance of an optimal acidity of fruit-based concentrated products had be done by adding of ascorbic acid in their composition. Fruit-based concentrated products fortified with iron were analysed from sensorial, biochemical and microbiological point of views. The used fortification agents do not modify product sensorial characteristics (appearance, colour, taste and smell), in comparison with control sample (jams non-fortified with iron).

Achievement of some bakery products fortified with iron, beneficial in nutrition of individuals with ferriprive anemia

Monica Catană[1], Luminița Catană[1], Mioara Negoiță[1], Enuța Iorga[1],
Aurelia Dobrescu[2], Gabriela Lilios[3], V. Ionescu[1]
[1]Institute of Food Bioresources Bucharest
mona.catana@bioresurse.ro
[2]University of Agronomic Sciences and Veterinary Medicine Bucharest
[3]University Ovidius, Constanța

Keywords: fortified, iron salts, poppy sticks, rolls

ABSTRACT

In this paper are presented the results of performed researches for achieving of two bakery products fortified with iron: rolls with sun flower and sesame seeds and poppy sticks. As fortification agents, they were used ferrous sulfate, ferrous lactate and ferrous gluconate, and the fortification levels were 20 mg Fe/kg flour, 40 mg Fe/kg flour, 60 mg Fe/kg flour and 80 mg Fe/kg flour, respectively. Taking into consideration the phytase role into phytates hidrolysis and increasing of iron bioavailability in human body, in bakery products composition it was added standardized fungal phytase. Also, because ascorbic acid is a promoter of iron absorption in human body, it was used in the composition of bakery products fortified with iron. Bakery products fortified with iron were analysed from sensorial, physic-chemical and microbiological point of views. The used fortification agents do not modify product sensorial characteristics (appearance, colour, taste and smell), in comparison with control sample (bakery products, non-fortified with iron).

Evaluation of biochemical changes induced by specific mycoflora in the wheat stored

Mirela Dana Cîndea, Antonia Ivaşcu
State Institute for Variety Testing and Registration, Romania

Keywords: wheat, store, carbohydrate, protein, lipid.

ABSTRACT

In this work it was intended behaviour in terms of quality of the Dropia variety of wheat during storage in bulk, in the period October 2008 - February 2009 in improper storage conditions (relative air humidity, temperature) and contamination with specific fungi. The study was conducted against a blank of the same variety of wheat, kept in optimal storage conditions (relative air humidity <75% and temperature 6ºC). During monitoring the deposit of wheat from 5 months (October-February) we noticed that although the beginning of monitoring, atmospheric relative humidity found in the normal range (40%), while it increased in some areas retention, leading to a partial degradation of the seed. Following emergence calefaction phenomenon in parts of the storage space was found increased contamination of wheat with specific deposit fungies (*Aspergillus terreus, A. flavus, Penicillium expansum, P. frsquentans, P. reprens, P. patulum, Fusarium graminearum*), which intensified the degradation processes at carbohydrate, protein and lipid of wheat. Thus, during the 5 months of storage monitored carbohydrate content decreased on average by 29%, 4% protein content and lipid level showed the largest decrease in average 60%.

Pedogenetical processes from Picior de Munte Field

Raluca Leotescu, Gh. Campeanu, Gabriela Neata, A. Basaraba
University of Agronomical Sciences and Veterinary Medicine Bucharest

Keywords: piemont and field, favourability, clay, freatic level, the human intervention

ABSTRACT

Picior de Munte Field is located in the Central- North part of Romanian field between Sabaru Valley at south, Cobiei at West and Dambovita at EST. Through morphometrical characteristics of that, relief unit represents a continuity of southeast Piemont Candesti from which is different through the mode of formation. The soils from field results of the in time actions of pedogenetical factors which are interpenetrated.

These soils were formatted in the condition of a piemont field, on parental materials rich in clay and in the temperate climate conditions, favourable to the solification process. These pedogenetical conditions follow some human interventions, which are necessary to improve the cultural capacity of soils. Therefore, the principal types of soils from the field are luvisoils, cambisoils, hydrosols, protisoils and pelisoils.

Researches regarding the genesis processes of Picior de Munte Field soils

Raluca Leotescu, Gh. Campeanu, Gabriela Neata, A. Basaraba
University of Agronomical Sciences and Veterinary Medicine Bucharest

Keywords: piemont plain, favourability, clay, phreatic level, human intervention

ABSTRACT

Plain Picior de Munte is located in north-central part of the Romanian Plain, between the valleys of south Sabar, Corabiei west and east Dambovita, presumed subunit of Plain Targoviste (Figure 1, Figure 2).

The morphometric characters it has, it is a continuation to the southeast of Piemont Cândești of which differ and formation module. So far, Plain Foot of the Mountain, as was defined, not subject to special works of physical geography, geomorphology, geology, and pedology pedogeografie.

The ultimate goal of soil research, to provide technical and scientific basis for improvement methods and measures for rational use of land, requires knowledge and deepen all natural and anthropogenic factors, aimed pedogenetical processes, with significant production, setting the terms of the occurrence and distribution of soils the territory.

Pedogenetical factors with important role in soil formation we have rocks, topography, climate, surface waters and ground waters, vegetation, fauna and time. In their investigation results have substantiated the existence of five types of soils: Luvisoils, Cambisoils, Hydrosoils, Protisoils, Vertiquesoils

Research on the systematic monitoring of potato storage losses for industrialization in the form of potato chips

Andreea Orzan, Gh. Campeanu, Gabriela Neata
University of Agronomical Sciences and Veterinary Medicine Bucharest

ABSTRACT

For industrialized processing as potato chips, potato kept in pre-processing a good time at temperatures between 7-10^{o}C to avoid the hydrolysis process of starch into sugars that can change colour and reducing the quality of the finished product. The research was conducted in 5 varieties of potatoes: Ostara, Desiree, Sante, Roclas, Romano on tubers of the same size (90-100g) and physiological age, therefore having the same potential (capacity) of sprouting, the same effect in 5 repetitions. The early varieties biggest loss recorded in the first months of storage, which requires an earlier processing them. Weight loss of tubers for processing industrialized can keep up only because successive spring during storage at 10-15%. Losses due to large physiological table potatoes for industrial processing that is required within each manufacturing plant to have a storage space where they can be controlled by keeping the main factors. The raw material will be stored at low temperatures and raising temperature for industrial processing will be made only about a month before processing. Losses are extremely serious and brown varieties if keep lasts more than a month.

The influence of Reldan 40EC insecticide upon physiological indices in Rana ridibunda

Alina Păunescu, Cristina Maria Ponepal, O. Drăghici, Al.G. Marinescu
Faculty of Science, University of Piteşti
alina_paunescu@yahoo.com

Keywords: chloropyrifos-methyl, eritrocytes, leukocytes, glicaemia, cholesterol, triglycerides

ABSTRACT

In our experiments we investigated the influence of the insecticide Reldan upon some physiological indices (number of eritrocytes, leokocytes, and glycaemia, cholesterol, triglycerides level) in Rana ridibunda at two thermic intervals (4-6ºC and 22-24ºC). Reldan 40EC is an insecticide from the class of organophosphates. The active substance of this insecticide is chlorpyrifos ($C_7H_7Cl_3NO_3PS$; O,O-Diethyl O-(3,5,6-trichloro-2-pyridyl) phosphorothioate). The animals used in the experiment were divided in four experimental lots: two lots of control individuals (first lot was kept at 4-6ºC, and the second at 22-24ºC) and two experimental lots in which the animals were treated with 0.01 ml/g body weight Reldan 40EC and kept at 4-6ºC, respectively at 22-24ºC. The toxic was administrated with intraperitoneal shots (one shot every two days, in a scheme of three weeks). At the end of the experiment we observe an increase of erythrocytes and glycaemia value, a decrease of leukocytes.

Quality and yield potential of eight sunflower hybrids studied at CTS Dîlga during 2007-2008

Elena Stoica
State Institute for Variety Testing and Registration Bucharest, Dîlga Centre for Variety Testing

Keywords: genetic potential, productivity, yield quality

ABSTRACT

Dîlga region represents the major sunflower growing area, with most favourable pedo-climatic conditions for this crop type. In this study we analyzed by comparison eight sunflower hybrids, four local Romanian and two foreign varieties. The study was conducted at Dîlga Centre for Variety Testing (named CTS Dîlga) and has as objective to identify the most performant and best adapted sunflower hybrids for this region. The results obtained demonstrate the difference in productivity and yield quality amongst the hybrids analyzed. Following this study, local and foreign hybrids have proven high adaptability with regards to pedo-climatic conditions of this region generating high quality and quality yields.

Agronomic performance of several sunflower hybrids at Centres for Variety Testing located in South-East plains of Romania

Elena Stoica
State Institute for Variety Testing and Registration Bucharest, Dîlga Centre for Variety Testing

Keywords: genetic potential, productivity, yield quality

ABSTRACT

Romania represents one of the major Sunflower growing countries, being sixth in 2006 from acreage perspective. Development in sunflower cultivation was fuelled by the increasing need for sunflower oil necessary in the food industry and other related sectors. Together with this increasing demand, new hybrids are being registered and marketed. Breeding programmes strive in obtaining sunflower hybrids targeted in providing higher seed production capacity and higher oil content. In the following study is presented the experimental results for several sunflower hybrids analysed in the south-east plains of Romania at the Centres for Variety Testing Dîlga, Cogealac, Râmnicu Sărat and Mircea Vodă.

Bioindicators, a method for investigating the existing pollution in an area

Valeria Stupcanu[1], Otilia Dumitru[1], Gh. Campeanu[2]
[1] I.S.J. Ialomița
[2]USAMV Bucharest
valeria.stupcanu@yahoo.com

Keywords: lichens, bioindicators, eco-monitoring, transplanted bioindicators, micobiont, phycobiont

ABSTRACT

An efficient method of monitoring the environment is the biologically active monitoring, which consists in observing the transplanted bioindicators, for the purpose of the ecological indication, mostly in the regions where bioindicators lack or which are poor in forest areas. The epiphyte lamellar lichens have been used, their thalluses together with the sublayer have been separated from the host-tree or branches with lichens have been collected, which have then been distributed in the examined area. Undegraded lichens samples were chosen, having approximately the same size, being in the same development stage, all of them growing in the same place. The choice of the area and the transplantation stations resulted from the real location of the green areas, taking into account the placement of the pollution sources, the wind rose and the perspectives of extending the afforested areas from the examined region.

Following the studies it has been noticed the great capacity of the lichens to accumulate the heavy metals existing in the air, which proves their use in the active monitoring of air quality. Under the influence of the pollutants, the transplanted bioindicators have decreased in size, have changed the colour and the aspect. Taking into account the results and the influence that the heavy metals might have on the people's health, the extension of the green areas would be very useful. The urbanization and the industrialization are affecting and negatively influencing the diversity of the animals. In the investigated areas 20 lichens species have been found. According to an evaluation made on the diversity, abundance and tolerance to toxicity, of all the examined areas, the indicatory species, the influence of the different geographical conditions, the placement of the pollution sources and their emissions spectrum leave their mark on the environment. The man only can improve the environment conditions and ecologically purify the environment and the nature.

The agriculture workforce in Bihor County

Aurora Venig
Universitatea Oradea
venig_aurora@yahoo.com

Keywords: human resources, agrarian holding, the male and young workforce drain.

ABSTRACT

This research represents an analysis of the population structure involved in the Bihor county agriculture. There are made some reproof of the 2001-2008 period, over the entire population occupied in the agriculture and on genders, over the incomes achieved by the population of the Bihor county and the workforce administration. Concerning the reproof, the workforce of this county beared the consequences of the feminization and aging process and there are necessarily taking measures of renewing the workforce of this national economical sector.

Correlation between the amount of active dry yeast and compressed yeast following the variation of the viable cells number

Victorița-Daniela Voica
"ROMPAN" The Romanian Employers League of the Milling, Bread making and Flour Products Industry
daniela_voica@hotmail.com

Keywords: active dry yeast, compressed yeast, autolised cells, autolisis level

ABSTRACT

The fermentative activity of the bakery yeast- an important parameter of quality in obtaining finished quality products- is mostly influenced by the viable cells number of the used samples. This number depends on commercial type of yeast that is used.

The aim of this study was to establish the corellation between the amounts of different commercial types bakery yeast in terms of the viable cells number. In this study 2 types of commercial types of *Saccharomyces cerevisiae* yeast were used for determination: active dry yeast and compressed yeast.

Studies regarding alcoholic fermentation of glucides extracted from Sweet Sorghum using *Zymomonas mobilis* different strains

Vasilica Zăhărăchescu[1,2], G. Câmpeanu[2], A. Tănase[3], Sorina Petrache[3],
Cristina Sturzoiu[3], Florentina Israel-Roming[4], G. Stoian[3]
[1]Chimico-Pharmaceutic Research and Development National Institute Bucharest
z18silvia@yahoo.com
[2]Faculty of Horticulture, USAMV Bucharest
[3]Departement of Biochemistry and Molecular Biology, University of Bucharest
[4]Faculty of Biotechnology, USAMV Bucharest

Keywords: fermentative sugar, bioethanol, growth curves, consumption curves.

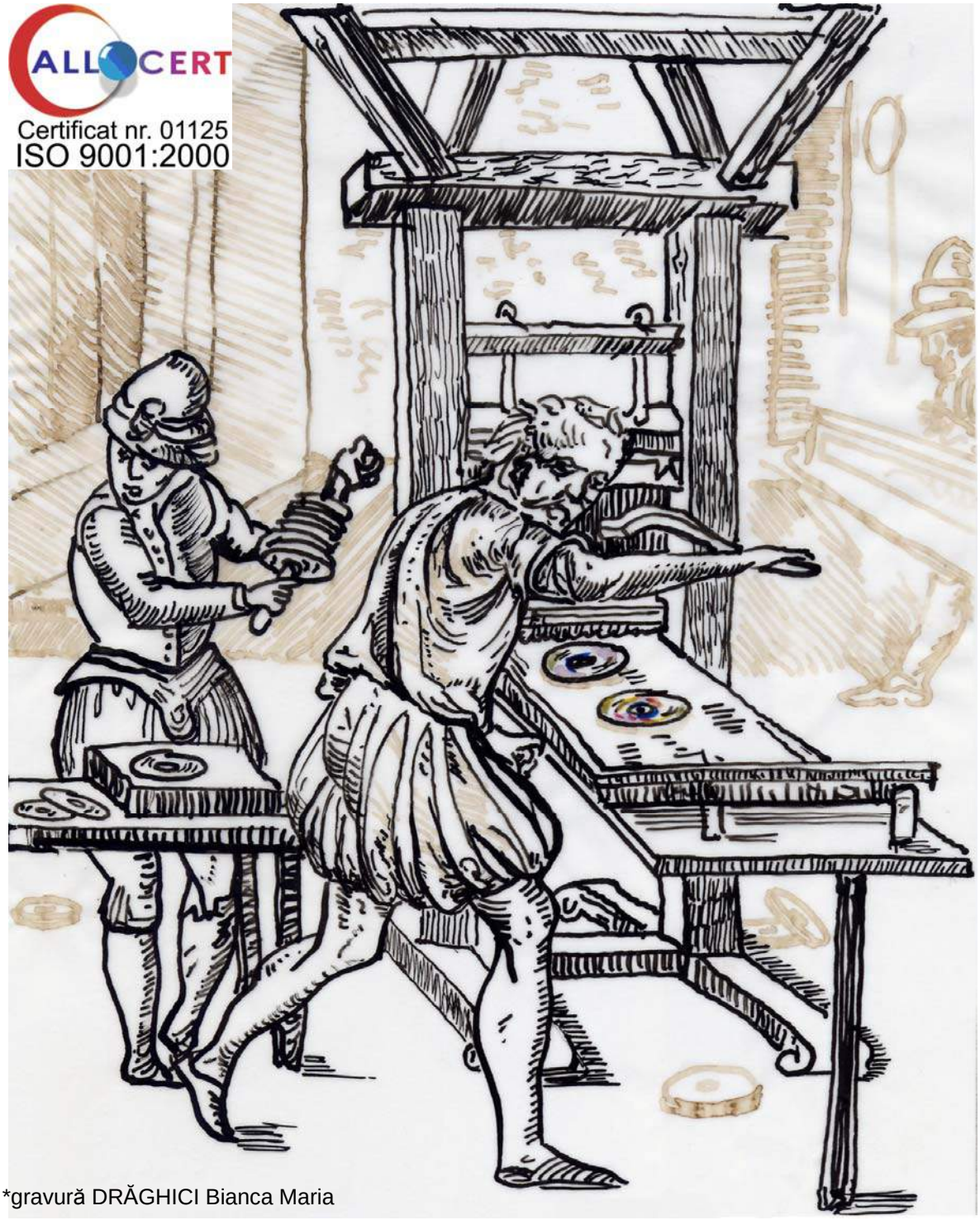
ABSTRACT

The need of using renewable sources to obtain fuel has led tot the appreciation of the energetic potential of the biomass. In this work, the vegetal substrate for ethanol production used was sweet sorgum (*Sorghum bicolor, var. zacharum*). For this propose of reduction of the technological costs in ethanol production from sweet sorghum extract fermentation we used *Zymomonas mobilis*, a Gram negative bacterium as microorganism able to metabolize sucrose. Our results show that *Z. mobilis* can grow and produce ethanol without any other additives in grow medium.

Editură de Carte Electronică
(Acreditată CNCSIS)

str. Traian Vuia nr. 17, Otopeni, Ilfov
tel.: 0723.20.50.48; fax: 031/102.76.16
e-mail: office@invel.ro

Certificat nr. 01125
ISO 9001:2000



*gravură DRĂGHICI Bianca Maria

Avem tehnologia ...

dar şi uneltele, pentru a vă oferi:

♦carte electronică ♦CD personalizat ♦CD multimedia ♦
♦paper to digital text ♦desen proiectiv digital 2D ♦
♦CD film ♦DTP ♦consultanță birotică/office/IT♦

Sponsori:

Autoritatea Națională pentru Cercetare Ştiințifică

Facultatea de Horticultură

Asociația „Horticultura XXI”

Semperflorens

Flori Anita

DuPont

Summit Agro

Garden Services

Petrosu

Parteneri media:

Radio Antena Satelor
INVEL-Multimedia

Configurație minimă: PC Pentium, 32 MB RAM, 20 MB free/HDD, Windows 95/98/2000/XP, CD-ROM, Adobe Acrobat Reader 5.0 - dacă nu-l aveți instalat îl găsiți pe acest CD.

ISSN 1222-5312

office@invel.ro
tel.: 0723.20.50.48, fax: 031/102.76.16