

Endophytic fungi from *Vitis vinifera* L. isolated in Canary Islands and Azores as potential biocontrol agents of *Botrytis cinerea* Pers.:Fr.

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Abstract Isolation of endophytic fungi from grapevine (*Vitis vinifera* L.) was carried out to investigate the diversity of fungi associated to varieties of grapevines cultivated in Canary Islands (Spain) and in Azores (Portugal). A total of 11 taxa and two unidentified isolates from 4 sampling sites, were obtained and characterized as possible biocontrol agents against *Botrytis cinerea* Pers.:Fr in *in vitro* test. The fungi isolated were identified as *Hortaea werneckii* (Horta) Nishimura & Miyaji, *Alternaria alternata* (Fr.) Keissl., *A. tenuissima* (Nees) Wiltshire, *Aspergillus* spp., *Pestalotiopsis* spp., *Botryosphaeria parva* Pennycook & Samuels, *B. lutea* A.J.L. Phillips, *Chaetomium globosum* Kunze ex Fr., *Gibberella intricans* Wollenw., *Penicillium* spp. The strain of *Penicillium* spp. showed a promising antagonistic activity at laboratory scale.

Key words

Endophytic fungi, *Vitis vinifera* L., antagonism assay, biocontrol

Research regarding the frequency of appearance of root-swelling at Turkey oak trees (*Quercus cerris*) from Bobostea forest (Bihor county)

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Abstract The work presents the results of observations performed at the Turkey oak species, in test surfaces placed in Bobostea forest (Bihor county) and not only (Tasnad Forest District and Dumbrava-Beliu Forest District), which allowed certain conclusions related to the frequency of appearance of this defect and of its distribution on the biological origins of trees.

Key words

defects of wood, root-swelling, biological origins

Researches concerning the physiological and biochemical modifications of the gerbera flowers during storage

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Abstract The research in this field has demonstrated that the flower senescence process is accompanied by different functional modifications of the properties of the petals' cellular membranes, including permeability, enzymatic activity, capacity of absorption of the preserving solution and respiration activity. This paper presents the physiological and biological modifications which take place during the senescence process of the gerbera flowers, Cerise cultivar. The paper also illustrates the flowers' behaviour during storage in water and preserving solution (with good results in pervious research) containing: sucrose 2% + 8HQC (hydroxyquinoline citrate) 0.02% + AgNO₃ 0,005%, dissolved in distilled water. For the experiments we used gerbera flowers harvested in June and October, two consecutive years . The presented results represent an average of the four experimental phases. The gerbera inflorescences kept in preserving solution reveal, as compared with those kept in water, the following physiological and biochemical characteristics: higher water retention capacity in ligules, lower average values of respiratory intensity and peroxide activity from ligules, higher average content of total dry substance and total glucoses in ligules, reduced growth of ligules' anthocyanic pigment content.

Key words

water, preserving solution, Cerise cultivar

The effect of the fertilization on biochemical composition of some nectarines fruits varieties

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Abstract The purpose of these researches was to establish the most adequate fertilization systems of nectarine culture, in order to obtain high quality fruits, with adequate biochemical level. The nectarine varieties tested have benefited, in culture, of four different variants of fertilization: V1 - control (unfertilized), V2 - organic fertilization (with manure), V3 - ground chemical fertilization (NPK complex fertilizers), V4 - ground + foliar chemical fertilization (NPK + Murtonik). Immediately after harvest, the fruits were stored in three storage options: ambient temperature (5 days), refrigeration storage (28 days), modified atmosphere (30 days). At harvest and after storage determinations were made on soluble dry matter, soluble carbohydrates and titratable acidity. The results reveals that the level of the main biochemical indicators in nectarines content varies according to type of culture fertilization and varieties of the fruit.

Key words

organic and chemical fertilizer, dry matter, carbohydrates, titratable acidity

Studies on Genetic Structure Variability at 'Serata', *Lactuca sativa* L. Variety

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Abstract This paper presents a study on the variability of the main traits and significance of selection work at 'SERATA' variety of *Lactuca sativa* L. created and patented at Vegetable Research and Development Station, Bacau. Maintaining of quantitative and qualitative features of variety, annually within their variability in purpose to ensure the identity, uniformity and stability is achieved by the conservative selection works. Our undertaken studies show that studied variability of different traits, is: low at shape's index, head's height, medium at head diameter and head weight and high at weight of seed / plant (g). Data presented in this study reveal that the variety of lettuce – 'SERATA' is properly maintained in conservative selection process, and the limits of variability are normal.

Key words

population, gene, genotype, coefficient of variability

Landscape policies – the incontestable elements of a territory development

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Abstract In recent decades landscape began to insert in the speech of political and and professionals factors as an important component of a territory construction, such as a component of framework for quality life construction. The landscape requires a harmonious and equilibrated construction between the two structures which define a territory: anthropogenic and natural environment. These arguments of landscape discourse find their support in landscape policies as local regulation elements. Thus by adopting the European Landscape Convention the landscape policies can be found at the level of territory to prevent the depreciation, the trivialization of the of European landscape and even the loss of local identity.

Key words

landscape policies, Natural Park, Regional Natural Park, landscape protection

Landscape policies are aimed to strengthen the local image by sustaining traditions and natural elements. The two models of landscape policies shown in the article will expose two different approaches of the landscape. In the French Regional Natural Park, the landscape policies are used to expose the dynamic development of the territory, they represent one of the key points of the territorial valorisation. In Romanian Natural Park, we find a landscape approach directed to conservation and protection of natural and human environment within the protected area.

Through these two models we will have a clear approach of landscape policies seen from two different angles: one refers to the progressive elements that stimulates a territory, and the other at the Romanian case, where in the absence of a landscape legislation the landscape is seen as a conservative component.

Gared variety - result of potato breeding research at Station for Research and Development of Potato Targu Secuiesc

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Abstract Potato, from the breeding point of view, presents the following biological physiological specific features: vegetative multiplication, heterogeneity of progenitors', large plasticity, sterility, incompatible to hybridization, excessive sensibility to diseases. The first three specific features advantage the breeding process on a large scale, but the last two thus complicates the breeding activity and constitutes important problems to success.

The breeding of potato has as permanent objective the obtaining new varieties with high yield capacity, with high resistance to diseases and pest, with high quality, which have to give the satisfaction to consumers.

The creation of new potato varieties is a continue process, which has to take into account the change of ecological conditions, with increase of aggressively and pathogenity of diseases and pest, apparition of rases, stems, brotypes, pathotipes, as well as the continue increasing of consumers demands.

Key words

potato, variety, breeding, specific technology

Results concerning the behaviour of certain potato varieties (*Solanum tuberosum* L.) suitable for industrial processing under various ecological conditions

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Abstract The issue of discovering new raw materials for the food industry is being considered a major concern in the whole world. This concern is the result of both the need for diversification and improvement of the range of foods offered to the consumers and the demand to provide with food a constantly growing population.

The world we live in is progressing at an astonishing pace, time being one of our most important resources. As a result, consumer society is oriented towards a food market based on the superior valorification of the vegetal production, which can assure a high nutritional potential.

During the last decades attempts have been made throughout the world to diversity and intensify the main crop cultures, among them the potato culture, which serves as a raw material in industry for: starch, glucose, dextrin, isoglucose etc.

The aim of the experiment was to check the production potential of starch at varieties intended for industrialization and to choose the most appropriate varieties to be processed into starch and which can be cultivated in areas favourable for potato culture.

Key words

potato, variety, productivity, starch content

Landscape planning proposal for the roundabout Cardinal Points with ornamental plants suitable for traffic

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Abstract To achieve development proposal has been considered the functionality of space and its aesthetics. First it wants to be a transit function space, which acts roundabout: high traffic area, spots of color to the vegetation, which creates a nice image for people moving permanently.

In ornamental floriculture designing a project must take into account certain basic principles: principles of functional, aesthetic, environmental, technical and cultural-historical. Systematization of each green space must meet functional goals of the program and ensure compliance with the organization functions by rational arrangement of components and layout logic choice endowments.

Key words

landscape planning, plant, aesthetics, traffic

Research on the behavior of some Rose cultivars belonging to Thea hybrida and Polyantha group, regarding the propagation through cuttings on different soil substratum at the Didactic Base of the Discipline of Floriculture

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Abstract The uncontested beauty of plants, but mostly of flowers, go often in a tight brace with their perfume, which is varied in composition and intensity. This has led to the diverse use of species and cultivars and has taken to the apparition of a great industry of producing the seedling material, to which the cultivation of Roses has always meant an important income source of those who are busy with its cultivation.

In the present paper we have followed the rooting percentage of the Rose cuttings that were provided by the nine cultivars taken into research, on different rooting substratum: Casanova cv., Chrysler Imperial cv., Dame de Coeur cv., Gaumo cv., Kimono cv., Kronenburg cv., Mr. Lincoln cv., Sterling cv., Sultane cv. The treatment of the results was done by using the current statistic methods, showing the rooting capacity of the biological material used in the experiments.

Key words

cultivars, Roses, cuttings, substratum, rooting

Effects of applying EU legislation on cultivation of transgenic herbicide-resistant soybean in Romania

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Abstract Romania is one of the few European countries with favorable conditions for soybean production. Herbicide tolerant soybeans (Roundup Ready, RR) were grown commercially beginning with 1999 and accounted for 68% of all soybeans planted in 2006. This technology has provided farmers with productivity improvements through a combination of yield improvements and cost reductions. On January 1, 2007, when joining the European Union, Romania had, in accordance with obligations under the Treaty of Accession, to stop GM soy cultivation, although growing this crop generated substantially higher net farm income gains per hectare than in any of the other country using this technology. Following the implementation of EU law, Romania became the only country that prohibited the use of transgenic plants, plants that brought substantial profits not only to farmers. In only two years, the area planted to soybeans has shrunk with 70%, while Romania became a net importer of vegetable protein, just like the European Union itself. In 2008, EU-27 produced only 0.65 million tones of soybean. The EU annually imports 15.4 millions of soybean and 24-25 millions of soybean meal. Therefore, this GMO is not cultivated, but is imported in huge quantities in the form of grains and meals, from Argentina, Brazil, USA, etc., large countries that grow transgenic soybeans. In 2009, genetically modified cultivars in the United States occupied 91% of the total area allocated to soybeans in Argentina - 99% and in Brazil - 69%, with evident upward trend. Following the implementation of legislation governing the cultivation of transgenic plants in the European Union, from a growing RR soybean, Romania became an importing country of this product. The effect of no longer using the current widely used biotech trait in the soybean, at the national economy's level, is hard currency losses (as a result of increased imports) estimated to exceeded millions of euros per year.

Key words

RR soybean, EU legislation, GMOs

Assessing the environmental impact of changes in pesticide use on transgenic soybean

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Abstract Herbicide tolerant (HT) soybean was introduced in Romania in 1999 and until 2007 has been the only glyphosate-resistant (GR) crop grown commercially in Europa. Following the limited introduction in 1999, producers rapidly adopted the agricultural innovation of HT soybean. More than 70% of the soybean seeded in 2006, in Romania was a HT variety. Numerous environmental impacts have generated and have accumulated following the initial commercial production of HT soybean in 1999. A universal indicator, the EIQ, was employed in order to be able to compare the environmental impacts of pesticide programmes applied to transgenic crops and their conventional counterparts. In this paper we summarize the published results regarding environmental impact of changes in pesticide use on transgenic soybean in Romania. Additionally, the EIQ method was applied to the data published on herbicide regimes used on transgenic (before 2007) and conventional soybean (2006, 2010) in Romania. The overall results of this study indicates that positive benefits can be achieved through the use of the soybean trait of herbicide resistance.

Key words

transgenic soybean; weed control; environmental impact

Preservation strategies of local varieties of crop plants in Europe and worldwide

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Abstract Since 1992 the rising interest concerning the agrobiodiversity preservation is felt. On European and worldwide level a series of events took place within were signed treaties and created directives and laws in order to support the preservation of plant genetic resources, which of course involves preserving local varieties of plants. Preservation of these traditional varieties can be achieved in two ways: *in situ* and *ex situ*.

Preservation *in situ* (*on farm*) is made in natural habitat and involves the varieties of interest, managing and monitoring them in their place of origin.

Ex situ preservation means maintaining the entire studied biological community outside of the natural habitat. It involves sampling, transfer and storage of certain species of population far from the original place. This type of preservation can be achieved in gene banks, individuals being kept in conditions controlled by humans.

A special importance for preservation of local varieties has Suceava Gene Bank which preserves 386 species of crop plants.

Currently, in Romania, there are landraces which disappeared –at

Key words

Gene Bank, agrobiodiversity, landrace, *in situ* preservation, *ex situ* preservation, genetic erosion

flax and hemp, or which are threatened with the extinction – at corn, potato and bean.

Cause traditional varieties are threaten by extinction, Europe creates strategies of genetic erosion combat.

Cytological effects induced by Agil herbicide to onion

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Abstract The purpose of this study was to investigate in laboratory the cytological effects of Agil herbicide on the onion (*Allium cepa*) root meristematic cells, in particular the mitotic index and mitotic abnormalities. Cytological experiments were conducted using herbicide concentrations of 0.5 ppm, 1.0 ppm and 1.5 ppm for 8 h, 24 h and 48 hours in the presence of a control for each combination of them. Mitotic index decreased with increasing the herbicide concentration at each exposure time. Also, the higher concentration and the higher exposure time of the Agil herbicide caused an increase of prophase frequency and decrease of telophase frequency. In the same vein, the total chromosomal aberration increased with an increasing the Agil herbicide concentration (the frequency of the chromosomal aberration was markedly higher at 1.5 ppm compared to other test concentrations).

The obtained results indicate that Agil herbicide had the ability to cause production of some mitotic abnormalities. These abnormalities appeared in varying degrees depending on the herbicide concentration. Our study reveals a direct correlation between herbicide concentration, exposure time and mutagenic effects observed in exposed *Allium cepa* cells. We conclude that when applied in high doses, the Agil herbicide shows cytotoxic effects to *Allium cepa* plants.

Key words

Allium cepa, herbicide, mitotic index, chromosomes

Researches regarding the influence of fertilization on the main physiological indexes of cucumber

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Abstract The purpose of this experiment was to determine the main changes in physiological and biochemical indices after applying some phosphorous based fertilizers. The following physiological indices were studied: Total chlorophyll content (SPAD); Total leaf area (cm²); Total quantity of dry matter accumulated (%). We used a commercial gherkin cucumber genotype that was sowed in june 2, and in july 12 the plants were transplanted in bigger pots, having a 10 liters capacity, in a soil mixture: 4 parts peat: 1 part garden soil: 1 part sandy soil where they remained until the end of the experiment.

In order for the experiment to run in best conditions it was sustained by maintaining soil optimum level of humidity, by applying the necessary treatments to control diseases and pests, and all the other specific cares. Treatments were performed at different stages of vegetation.

Key words

leaf area, chlorophyll content, dry matter, *Cucumis sativus* L.

Genetic analysis for plant yield in winter wheat

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Abstract Grain yield per plant is one of the main components of yield potential; therefore it essentially determines the yield level. Because of the complexity for this trait it is difficult to improve yield through breeding especially in the early generations. Generation mean analysis is a quantitative genetic method be able to estimate additive, dominance and epistatic effects. The present study aims to obtain useful information about gene action for six winter wheat crosses, and to establish the opportunities of recovery in wheat breeding.

The positive values of heterosis relative to mid and to better parents indicated that dominance direction was toward the best respective parent. The cross Romulus x G.K.Gobe recorded significantly higher intensity of heterosis to other combinations. The dominance effects showed higher values than the additive effects, indicating that dominance gene effects play the major role in controlling the genetic variation of plant yield. A high contribution in genetic determinism of this trait has the epistatic effect, especially the additive x dominant effect

Key words

winter wheat, plant yield, gene effects

Diallel analysis of variance - covariance regression for spike length in six-row winter barley

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Abstract The choice of an efficient breeding procedure depends to a large extent on the knowledge of the genetic system controlling the character to be selected. The spike length holds great value for yield improvement in barley. High values of spike length cause a yield increase only if they are associated with high spike density. The present research were conducted to ascertain the nature of gene action involved in the determinism of spike length for a set of six doubled haploids lines of six-row winter barley.

The studied parental forms in terms of spike length submitted a higher proportion of dominant alleles and a nearly symmetrical distribution of positive and negative alleles. In both generations, the overdominance direction was associated with an increase in spike length. A high proportion of recessive and negative alleles have been reported in DH 19-1 line, respectively a large proportion of dominant and negative alleles submitted the DH 26-2 and DH 20-4 lines, while the other lines showed a relative instability during the two generations. Because the genetic system that controls the spike length four both generations is mainly additive, selection can play a great role in breeding method of that trait.

Key words

six-row barley, spike length, diallel analysis

***Artemisia thuscula* Cav.: antibacterial, antifungal activity of the plant extracts and associated endophytes**

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Abstract In this paper we are presenting preliminary results for the antifungal and antibacterial activity of the *Artemisia thuscula* Cav. all together with the endophytic communities encountered in symbiosis with this specie. This plant is endemic for the Canary Islands and it is recognised for its traditional medicinal use (like other species of the same genus in the rest of the world) and for being a functional repellent of insects.

The ethanol extracts tested showed an interesting activity against the phytopathogenic fungi *Fusarium moniliforme*, *F. solani* and *F. oxysporum* and antibiotic activity against 2 Gram-positive bacteria: *Bacillus cereus* and *Streptomyces griseus*, in an primary screening.

The diversity of endophytes found in this plant, especially in the roots, showed promising results supporting further work on this species.

Key words

Artemisia thuscula,
antifungal activity,
antibacterial activity,
endophytes

Experimental results concerning the effect of sucrose concentration on cell biomass and synthesized anthocyanin amount in the callus culture

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Abstract The growth rate of cell biomass registered maximum mean value in the cultivation interval of 24 days for Burgund Mare, Cabernet Sauvignon and Pinot Noir and 27 days for Negru Tinctorial, Oporto and Cabernet Sauvignon varieties. Regarding the sucrose concentration added into the culture medium, it has been observed that callus growth rate registered for the concentration of 30 g/l and the most reduced values for callus growth rate were registered for the sucrose concentration of 60 g/l. Comparing the mean obtained values for the studied grapevine varieties, it has been observed that the largest values for synthesized anthocyanins in callus culture has been registered for Negru Tinctorial variety followed by Burgund Mare, Oporto, Merlot, Pinot Noir and Cabernet Sauvignon. The same hierarchy is maintained for behaviour of grapevine varieties in terms of each type of sucrose concentration added into culture media. The differences found between varieties depending on anthocyanin amount from callus cultures were very significant in most cases.

Key words

callus culture, cell biomass, anthocyanin, *Vitis vinifera* L.

Experimental results concerning the effect of photoperiod and callus culture duration on anthocyanin synthesis

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Abstract Light has a stimulating effect on callus biosynthetic potential, the genotype is the main factor that controls the productive potential of cultures. In photoperiod conditions, the highest biosynthetic potential have been observed for calli of Negru Tinctorial (12,04 mg/g) and Burgund Mare (5,88 mg/g) varieties, while the lowest for calli rising from Cabernet Sauvignon (1,14 mg/g), Pinot Noir (2,76 mg/g) and Merlot (3,17 mg/g) varieties.

Key words

callus culture, cell biomass, anthocyanin, *Vitis vinifera* L.

Impact of biostimulators and of rooting substratum on sapling growth in *Ficus carica* L.

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Abstract The biological material is represented by saplings of *Ficus carica* L. obtained vegetatively through cuttings using lignified cuts.

The rooting substratum used in the experiment was made up with well-washed river sand.

The rooting biostimulators we used were: a solution of Atonik, 1:4,000, i.e. 0.25 ml solution per 1 l of water, and Radistim 2 powder.

We made morphological feature biometric measurements in each sapling: sapling height, diameter of the collar, diameter of root system, number of roots, and root length

Key words

Ficus carica L., cuttings, biostimulators, rooting substrate nutrient

Research concerning the production of planting material using generative propagation on *Cercis siliquastrum* L.

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Abstract Seeds of *Cercis siliquastrum* L. germinate in a low percent without a special treatment. Seeds treatment are necessary to ensure uniform emergence, in a high percentage and in a short period of time. The aim of this research is to highlight the variation of whole-plant growth characteristics such as height and root collar diameter on different mixture of soil. The biological material consist on Judas tree seedling which were obtained by generative propagation and prepared by hot water treatment (HW), cold water treatment (CW), scarification (SC) and stratification (ST) Biometric observations of seedling like hight, root collar diameter, number of leaves and leaves area were made at 43 days from seedlings emergence. After 162 days from seedling transplanting in mixture soil the hight and root collar diameter have been determinated.

Key words

Cercis siliquastrum L., seed treatment, seedling, biometric observation

Estimation of interrelationships among different yield traits in winter wheat

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Abstract Before initiating any breeding program, it is essential to obtain information regarding the inter-relationship between various yield attributing characters with grain yield. Grain yield is a complex trait and is highly influenced by many genetic factors and environmental fluctuations. Correlation coefficients are useful if indirect selection of a secondary trait is to be used for improving the primary trait of interest. The objectives of this article were to estimate the phenotypic correlations between spike yield and other traits and to identify the traits that have the higher effects on spike yield, and finally the possibilities to use this information in wheat selection programs. Positive correlations exist between the studied traits, attesting that their change affects spike productivity in the same way. Therefore, in the case of this set of varieties high plant size is first of all associated with higher spike length and number of spikelet's, and subsequent with high levels of grain number and spike yield. The relationship between the grains number and spike yield is affected in a small and insignificant measure by the other characters. It also notes that the correlation between plant height and grain weight/spike is real and significant. As such, these two characters can be used as indirect selection criteria for spike yield.

Key words

winter wheat, correlation, regression, yield traits

Analysis of phenotypic diversity in winter wheat for some yield traits

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Abstract Breeders permanently looking for efficient method of developing cultivars with improved yield. For that reason they should include new genotypes in various cross combination in order to produce recombination of desirable genes. Using phenotypical similarity as a measure of diversity may offer information concerning the predicting some hybrid combinations which manifest a high intensity of heterosis. The objective of this study was to evaluate the phenotypic diversity of 20 winter wheat cultivars for five quantitative yield traits, and the possibilities of using this cultivars in breeding programs. The results of this study suggest that some cultivars represent a valuable material for different yield traits, that could be successively used for further breeding program include diallel crossing methods, as a good base for development of new wheat varieties. Crossing this phenotypical differentiated cultivars like: Glosa x Ati; Glosa x GKHattyu; Glosa x Feny; Faur x GKHattyu, Glosa x Nap, Faur x Feny, allows the obtaining of wheat hybrids with a gene combinations useful for different yield components.

Key words

winter wheat, phenotypic diversity, yield traits

Evaluation of grain yield stability for some maize hybrids using regression analysis

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Abstract Evaluation of genotypes for their stability of yield under different environments is important in plant breeding programs. The presence of a high genotype x environment (GE) interaction represents a significant problem of related to phenotypic expression of genetic base and makes it's difficult for decision making in selection. High yield stability usually refers to a genotype ability to perform consistently, whether at high or low yield levels across a wide range of environments. An ideal maize hybrid should have a high mean yield combined with a low degree of fluctuation under different environments. The hybrids: PR39D81, PR38R92, PR37D25, PR39F58, PR38A24, have a high static stability associated with low yield values, significantly lower than experience mean. As such, those hybrids are considered to be specifically adapted to less favorable environments for this crop. The hybrids: PR36V74, PR36K67, DKC 5276, PR36V52, DKC4490, achieved high values of grain yield associated with a low stability and are specifically adapted to favorable environmental conditions. The hybrids PR38R92, PR37D25, have high values of both static and type III stability achieving close values of yield from one year to another with small deviations from regression line.

Key words

maize, grain yield, stability, regression analysis

Variability analysis of grain yield in some maize hybrids

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Abstract Farmers are more interested in cultivars that produce consistent yields under their growing conditions and breeders also want to fulfill these needs. Identification and evaluation of the factors contributing to year-to-year fluctuation in crop yields could provide a basis for the assessment of production risk and for adjustments in management practices to reduce risk. The objective of this work was to evaluate the grain yield of different commercial maize hybrids under the agro climatic condition of Curtici area during 2009-2011 and to assess the magnitude of diversity among them.

Given the average values over the three years it is noted that in 2010 weather conditions were very significantly favorable compared to 2009 and 2011 in terms of grain yield achieved by studied maize hybrids, allowing the obtaining of 21-22% yield gains. The highest mean grain yield over 10 t/ha and also significant increases were mainly recorded by some hybrid of FAO maturity group 400, (PR36V74, DKC 5276, PR36D79, PR36K67, PR36V52), as well as hybrids of group 300 (DKC, 4685, DKC 4490, DKC 4889). A special case is represented by the earlier hybrids DKC4082 and DKC 3511, which also have registered yield levels of approximately 10 t/ha.

Key words

maize, grain yield, variability

Identification and Study of Useful Germplasm Resources for Breeding at Climbing Bean

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Abstract A particularly important treasure for each country is the volume and the genetic value of species, subspecies and plants populations, called germplasm (plant genetic resources). Variability of plant forms today is the result of human activity, by using in breeding wild forms, changing areas and acclimatization of plants in other than their geographic areas. Currently, the collection, study and conservation of genetic resources are topical issues which concern us. The aim of the study is to save precious resources that are endangered, by collecting local native populations, old, primitive varieties, which are under risk in order to reduce genetic erosion and save entire material obtained by breeding. Promising genotypes were identified (superior plant characteristics, such as: seed's size, plant's height, insertion of first-pod, number of pods per plant, number of seeds in pod, resistance to drought and pathogens and early maturation). The study presents all this items for a diverse collection of ten *Phaseolus vulgaris* varieties used in breeding at Vegetable Research and Development Station, Bacau.

Key words

local populations, line, variability

Researches concerning landscape planning of a cemetery in the City of Timisoara

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Abstract A cemetery is the place where the bodies of the deceased people are buried, accompanied in most of the cases by a religious ritual. The cemetery is also the place for ceremonies commemorating the deceased family, relatives or friends. These ceremonies (rituals) differ depending on the cultural practices and religious belief. The term of "cemetery" comes from the Greek language and refers to an area designed strictly for burial.

The dictionary defines a cemetery as a burial place. Nowadays the cemetery can be a public park or a land provided only for the inhumation of the dead, not being placed, as in the past, in the church yard and it specifies that the term was first applied to Roman underground catacombs, cemeteries. The public cemeteries, of today, are normally distinct from those in the churches yard, which are usually dedicated to a confession and are attached to a single place of worship.

Key words

cemetery, landscape
planning, functionality,
harmony

Study regarding landscape planning of a private garden pension from Periam commune, Timis County

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Abstract Periam is one of the greatest villages from Timiș County, with polarizing role, serving and influencing the surrounding villages, with agro-industrial functions and a clear urban evolution. The improvement and capitalization of the productive potential of agricultural lands from this area can be achieved in terms of integrated approach of the water improvement with those current agricultural improvements, which shall focus on ensuring a air-hydric regime in soil, in optimum parameters of functionality.

Key words

landscape, style, harmony,
plants, pension

The effect of genotype and water stress on root growth in some alfalfa varieties

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Abstract Drought is a major environmental determinant of plant growth and productivity. Therefore, understanding the mechanisms of plant tolerance to drought stress is a crucial environmental research topic. Osmotic adjustment is one trait, which plays an important role in sustaining growth under water deficit conditions. Analysis of alfalfa growth has shown that it responds to an onset of drought by a reduction in shoot and root elongation. The aim of this study was to assess the effect of polyethylene glycol on root growth of some alfalfa varieties and to identifying the superior genotypes for drought tolerance. Both, genotype and PEG treatment have a distinctly significant influence on the root growth to studied varieties, due to low and insignificant influence of environmental conditions. Also the combined effect of two factors had a significant influence on the root length. Based on the obtained results can be summarized that under osmotic stress conditions Satelit and Granat varieties have expressed the highest tolerance.

Key words

alfalfa, genotype, water stress, root growth

The effect of genotype and water stress on germination ability of seeds in some alfalfa varieties

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Abstract Suitable germination and drought tolerance alfalfa by selection of drought tolerant genotypes is very important, in breeding programs for this crop. The study of the influence of the drought using osmotic solutions is one of the methods in the study of resistance during the germinal phase. The aim of this study was to assess the effect of polyethylene glycol on germination ability of some alfalfa varieties and to identifying the superior genotypes for drought tolerance. Both genotypes (varieties) and PEG treatment, have a real and significant influence on seeds germination ability, the PEG treatment having had the greatest influence on this character. It is also noted that the combined effects of the two factors had a significant influence on germination ability of the seeds for the studied varieties. In the conditions of low values of the osmotic stress, Sigma and Selena varieties showed the lowest germination ability, significantly inferior to other varieties. In case of high values of the stress, Satelit variety recorded the best tolerance, followed by Granat and Dorina varieties, while Selena variety show a high sensitivity.

Key words

alfalfa, genotype, water stress, germination

Studies regarding the survival percentage of seedling in Uivar, Vermeș- Izgar and Luncavița- Verendin amelioration perimeters

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Abstract This paper presents a synthesis of the annual verification of regeneration in improving perimeter Uivar, Vermeș-Izgar and Luncavița – Verendin. This perimeters consisting of degraded lands by sheet erosion. Was followed the survival percentage of seedlings plants.

Key words

degraded lands, afforestation works

Studies regarding the height of seedling from Uivar, Vermeș- Izgar and Luncavița- Verendin amelioration perimeters

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Abstract This paper presents a synthesis of the annual verification of regeneration in improving perimeter Uivar, Vermeș-Izgar and Luncavița – Verendin. This perimeters consisting of degraded lands by sheet erosion. Was followed the total height growth and the height growth in the final year (2010)

Key words

degraded lands, afforestation works

Researches concerning the interaction genotype x technological factors over some production characters at one assortment of lettuce cultivated in field conditions

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Abstract These researches tried to put in evidence the influence of some technological factors over one assortment of lettuce cultivated in field in May – June 2011 period at the Didactic Base Timișoara. The assortment of lettuce taken in experience was represented by the next lettuce lines and varieties: AS 104, AS108, AS 6119 (Geodis) and AS 6123 (Hedonis). The technological factors had an important influence over the experience and were represented by the natural fertilization products (b factor) and the planting density (c factor). These assured final productions with a high economic level.

Keywords:

lettuce, natural fertilization products, planting density, cabbage weight, production dynamics.

Predators of *Pityogenes chalcographus* (Coleoptera: Scolytidae) in Natural Park Apuseni

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Abstract Alongside the European spruce bark beetle, in the Natural Park Apuseni, the small spruce bark beetle *Pityogenes chalcographus* encountered favourable mass reproduction conditions. Thus, massive attacks at the trees' feet were observed in different arboreta. This phenomenon will largely spread unless urgent measures for eradicating the pest hole are undertaken. This is why we have decided to investigate the parasitoid populations for *Pityogenes chalcographus* in the protected environment. In 2011 the most numerous species were: *Nemosoma elongatum*, *Rhizophagus cribratus*, *Rhizophagus depressus*, *Thanasimus formicarius*, *Quedius plagiatus*, *Quedius lateralis*, *Quedius cruentus*, *Quedius xanthopus*.

Key words

Pityogenes chalcographus, predators, Natural Park Apuseni

Parasitoids of *Ips typographus* (Coleoptera: Scolytidae) in the Natural Park Apuseni

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Abstract During the last years, in the Natural Park Apuseni, the European spruce bark beetle encountered favourable mass reproduction conditions. Thus, massive attacks at the trees' feet were observed in different arboreta. This phenomenon will largely spread unless urgent measures for eradicating the pest hole are undertaken. This is why we have decided to investigate the parasitoid populations in the protected environment. In 2011 the most numerous species were: *Coeloides bostrichorum*, *Roptrocerus xylophagorum*, *Rhopalicus tutela*, *Dendrosoter middendorffi* and *Dinotiscus eupterus*. Among these, the first two parasitoid species are also the best represented in number (>70%).

Key words

Ips typographus, parasitoids, Natural Park Apuseni

Manifestation of the productive potential of early cabbage hybrids grown in unheated greenhouses under the influence of start and phase root fertigation with modern fully soluble chemical fertilizers

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Abstract Early cabbage, a vegetable species that continues production of other species as early green onions, radishes, spinach, squash, holds a significant share in the range of size of field vegetables and greenhouses, large market requirements, and substantial profit it brings. There were cultivated varieties and hybrids valuable years ago, but the new varieties appeared, being evidently replaced in culture.

In this paper we present the behavior of new hybrids grown amid technological improvement of links leading to obtain high yields and quality to deal with market competition..

Key words

species, production, assortment, grower, technology

Increasing productive efficiency of a culture of mushroom *Agaricus bisporus* as a result of improvement of technological links for nutrient substrate cultivation and plant protection

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Abstract Cultivation of *Agaricus bisporus* mushrooms (Champignon mushrooms), in areas that originally had another purpose (warehouses, stables, workshops to raise chickens or hens, etc.), requires compliance and enforcement largely of the same technologies of culture. But some adjustments are needed in the way of settlement of the crop nutrient substrate production building, currently using two methods of settlement on the shelves: the recipients of PE foil bags placed vertically and PE foil containers of rectangular shape placed horizontally.

Initiated research aimed at determining the best type of container for use in culture, in terms of coverage using a mixture prepared by different recipes and substrate combat nematodes and insects flying in the local air, with various products (Nemasys M, Dimilin). Establishing conclusions and recommendations was based on quantifying productive efficiency for a production cycle and then for one year.

Key words

space, local culture, production, technology, container, nutritive substrate, nematodes, insects

The evolution of the growth and fructification stages of clingstones in the conditions of south-eastern Romania

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Abstract The goals of this paper are to establish the biological value of certain clingstone varieties and selections in the conditions provided by the Dobrogea area, the clingstone being a special type of peach which is used for processing. Dobrogea provides climatic conditions which are highly favorable for the cultivation of peach trees; the varieties and hybrids which have been studied may present certain variations as concerns the phenological manifestation in various cultivation areas, mainly due to repeated hybridizations throughout time. The growth and fructification stages are genetic characteristics of varieties and represent the latter's ability to adapt to environmental conditions.

The phenological observations and the biometrical measurements concerning the plants have been performed upon two comparative contest crops, established in 1992 and 1999, respectively. The purpose of this research is to highlight the most valuable varieties and selections obtained by improvers from Constanța, as well as the genotypes introduced from abroad, which best adapted to the pedo-climatic conditions of Dobrogea. Also, we intend to bring a contribution to the improvement of the industrial peach assortment, by means of promoting certain valuable varieties and hybrids as suitable for production. The results presented in this paper are the consequence of research which took place between 2008 and 2011 on contest crops belonging to S.C.D.P. Constanța. Owing to this research, the most valuable genotypes will be recommended for extension within demonstrative allotments and commercial plantations.

Key words

buds, sprouts, blossoming, active thermal sum

Studies regarding the resistance to fall of winter oat genotypes

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Abstract Researches aimed the evaluation of a collection consisting of winter oats foreign cultivars on fall resistance. The fall is a frequent phenomenon in oats culture. Improving resistance to failure can be achieved by selection. The study of germplasm as a source of genes, provides application of modern selection methods, marker assisted selection. Studies have found that the fall intensity is dependent on genotype and favoring climatic conditions. Experienced collection has variability in the resistance to failure and can be recommended as a source of genes for breeding process. Florina variety is a medium resistant variety, to which the genotypes: Earlygrain, Jeferson, 834-4-1-33412, PA 725-4787,4492,5029, Gerald, Nuptiale, Solva, Valiant, Barra, Carie, Krypton, Chamois, had higher behavior

Key words

winter oat, fall resistance, genotypes

Evaluation of the genetically modified corn resistance to fungal infection

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Abstract The genus *Fusarium* has a global distribution and many species in the genus are phytopathogenic fungi infecting a wide range of crop plants including cereals such as maize, wheat, oat and barley. Insect pests of corn are often involved in the disease cycles of ear rot and stalk rot diseases. The European corn borer is particularly well known for its involvement in these diseases. Bt corn is a variant of maize, genetically modified to express the bacterial Bt toxin, which protect the plants against this pest, therefore reducing the intensity of *Fusarium* contamination. PCR based methods were successfully applied in the screening for identification of contamination with pathogenic fungi for the corn samples. 14 corn samples, GM and conventional were subjected to PCR screening in order to detect the presence of three *Fusarium* species. The presence of *Fusarium proliferatum* was not detected in the GM corn samples. All three tested *Fusarium* species, were found in the analyzed samples, in average conventional corn being the most affected.

Key words

Bt corn, contamination, *Fusarium* spp., detection, PCR

Fusarium strain identification in complex feeds from Romanian market

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Abstract *Fusarium* contamination is a major agricultural problem as quality and yield can be reduced, but more importantly many species in the genus produce mycotoxins responsible for serious diseases in humans and farm animals. The most common mycotoxine in cereals is deoxynivalenol (DON) produced by certain isolates of *Fusarium* spp., being prevalent worldwide in crops used for food and feed production. Identification of *Fusarium* species is critical to predict the potential mycotoxigenic risk of the cereals, therefore the development of an accurate and complementary method which permits a rapid, sensitive and reliable specific diagnosis of *Fusarium* species, is necessary. DNA based approaches applied in this study have been already reported as rapid, sensitive and specific alternatives to identify the main trichothecene-producing *Fusarium* species. The biological material consisted of eight samples of commercial feeds were all positive for *Fusarium* species and therefore being suitable for further identification of those pathogenic organisms. In addition two of toxins biosynthetic genes were also detected. Therefore, this method proved to be suitable in screening of forage samples, in order to detect their contamination.

Key words

Fusarium spp., mycotoxines, feed products, screening, PCR

Aspects regarding the physiology of cuscuta (Cuscuta L. Convolvulaceae)

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Abstract Many species of *Cuscuta* contain a small amount of chlorophyll; and while both chlorophyll **a** and **b** are present in normal proportions, they only occur in a very low concentration. Several authors have demonstrated the capacity of *Cuscuta* for photosynthesis, making use of CO₂¹⁴. Fer has demonstrated that *Cuscuta* exposed to strong air illumination, with a CO₂ concentration much higher than the normal atmospheric CO₂ concentration, fixes more CO₂ during the photosynthesis process than the amount produced by means of respiration in both independently living seedlings and in the stem excised from the host.

The migration of assimilates is only occurring acropetally, not only in the case of the plantula, but also in the case of the mature parasite. The entirely acropetal migration of assimilates can be explained by the attracting effect exerted by the terminal sprout, as well as by the lateral sprouts situated on the subterminal part of the branch. The rudimentary root of the plantula does not have a meristem [19]; [12]; [28]; [23]; and the absence of a downward migration within the plantula thus appearing to be determined by the absence of the radicular meristem [9].

Key words

Cuscuta sp., photosynthesis, chlorophyll a and b, assimilate transport

Research on the spreading of cuscuta in South-East Transylvania – Romania

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Abstract *Cuscuta* (dodder) species are holoparasitic anthophytes, almost entirely deprived of roots, but having filamentary stems; and attacking numerous host plants, on which they fix themselves by means of haustoria. The economic losses determined by the presence of the dodder are rather difficult to support by developing countries, especially by those which are in need of agricultural development. In the region on which the research has been carried out, the most common species occurring in grasslands and perennial leguminous forages have been: *Cuscuta campestris* (Yuncker), *Cuscuta epithymum* (Murray (L.) Noth.) and *Cuscuta trifolii* (Babington). The presence of *Cuscuta* on cultures can cause substantial damages not only in our country, but in all countries with a warm and temperate climate, in which it is regarded as a quarantine parasite. [5]

The *Cuscuta* species have developed certain means of adaptation in order to increase their rate of success: a late seed germination, when host-plants are relatively well-developed; a rather high degree of independence which can ensure its survival during a quite long period of autotrophic life (maximum of one month); the invasion of the host plant by extremely elaborated and complicated means, etc. *Cuscuta* disseminates to a large

Key words

Cuscuta sp., host plants, quarantine parasite, spreading

extent by means of its seeds, which are extremely numerous and small, and which keep the germination in deposits over a period of between 10-12 years, or even up to 40 years [24], and in the ground or in stable garbage for up to 5-6 years. It also disseminates by means of filaments or segments of filaments, which are vegetative forms of this plant and which can be spread by means of animals or people walking in the grasslands and in the infected crops. This study's aim is to monitor various *Cuscuta* species, as well as their spreading on different host plants, thus causing a significant crop decrease.

Establishment of in vitro multiplication biotechnology of the species *Albizzia lebeck* L.

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Abstract This paper aims to establish a in vitro biotechnology for *Albizzia lebeck* species, because there was an increase in requests for such domestic plants and classic multiplying seed yield is below 50%, but also in the future to study if the concentration of substances used in pharmaceutical found in micro cuts are economically satisfactory.

For this settled culture media for initiate cultures in vitro, multiplication and rooting. All utensils used in the in vitro multiplication were sterilized before each use and culture media were autoclaved. After each stage the plants were kept in growth chambers at a temperature of 24°C, a 16-hour photoperiod and light intensity of 300 lux. The results obtained were good, so for initiation phase rates was 57 percent, for multiplication phase was obtained an average of 6 micro cuts / explant, and the rooting percentage was 84.

The results recommend this technology for its use on an industrial scale.

Key words

in vitro culture, *Albizzia lebeck*, initiation, multiplicatre, rooting

Assessment of genetic stability of plants obtained in vitro from *Albizzia lebeck* and *Albizzia julibrissin* using RAPD markers

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Abstract This research paper is the outcome of establishing a biotechnology in vitro clonal multiplication of two species of the genus *Albizzia* (*Albizzia lebeck* *Albizzia julibrissin* and).

Once the plants obtained by in vitro culture is necessary to see if they are genetically identical to mother plants from which explants were taken.

For this leaves were taken from both the donor mother plants and explants from 10 regenerated each species were used for DNA extraction.

A standard PCR reaction is performed in a volume of 25 ml which are: polymerase, dNTP, MgCl₂, primers, distilled water free of nucleases and DNA matrix containing the sequence to be amplified. The reaction mixture is done once and for all samples to be amplified, then distributed in 0.2 ml Eppendorf tubes. These operations are executed in a mini-cabinet PCR on

Key words

PCR, RAPD, *Albizzia julibrissin*, *Albizzia lebeck*

ice to avoid any shortcomings related to improper handling. Both tubes and micropipette tips to have been sterilized by autoclaving.

Only five of the 10 RAPD primers tested generated bands to regenerate ALBITZIA LEBECK genotype OPA-09, OPA-13, OPA-17, OPC-11, OPC-14. For Albizzia julibrisin was tested 10 RAPD primers and only 5 has generated bands.

Production of virus free potato plantlets

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Abstract Potatoes a high susceptibility to viral, bacterial and fungal diseases impose production of virus free material for healthy seed production since plant viruses are pathogens that cannot be destroyed by using plant protection chemicals. Meristem tip culture technique is one of the most used for potato in vitro culture initiation and is most of all used in order to obtain virus free plantlets. For this study six new Romanian potato cultivars were used. Explants were prepared for tissue culture and half of them underwent chemical (using the antiviral chemical-ribavirin) treatment. Culture tubes were incubated at 20-21 °C in 16 hr photoperiod with 2000 lux light intensity for 6-8 weeks. Leaf samples of 10 plantlets of each cultivar were tested for viruses: PVS, PVY, PVX and PLRV by ELISA technique. Virus-free individuals were measured for several biometrical parameters and subcultured on fresh multiplication media for 4 weeks. Best virus free production was obtained after Ribavirin treatment even if regeneration capacity after chemical therapy decreased with around 10%.

Key words

meristem tip culture, virus-free plantlets regeneration, virus indexing, *Solanum tuberosum* L., Ribavirin

Evaluation of some indirect indices to identify drought tolerance in barley

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Abstract The objective of this study was to evaluate the ability of several indices to identify drought tolerance of some hybrids in laboratory conditions. Germination stress index (GSI), Promptness index in stress (PIS) and non stress (PINS) conditions were recorded in the controlled conditions of laboratory under two different stress and non stress water regime. The osmotic stress were induced by PEG 6000 solution with the osmotic potential (0 Bars, -7.35 Bars) using method suggested by Kaufman, and replicated three time, at a temperature of 22±2°C. Therefore, drought induced by using physiological germination solutions with a different osmotic pressure levels directly influence the germination of the seeding material. These indices may be screened for indirect selection of drought tolerance in the initial stage of the crop growth.

Key words

Stress tolerance index, germination stress index, barley

Influence of Hydric Deficit on Root Growth Dynamics in Some Genotypes of Barley (*Hordeum Vulgare*)

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Abstract Drought is one of the most important types of abiotic stress that affects stability and amount of yield. This study was conducted to screen for drought tolerance at early seedling stages for 19 Romanian and foreign winter barley cultivars. The objective of this study was to determine if there were differential responses to water deficit on root growth dynamics in some barley cultivars. Fluid deficit was induced by polyethylene-glycol (PEG6000) solution, using control and 3 variants with different osmotic pressure (-2.72 Bars, -4.48 Bars, -7.35 Bars). Determinations of root growth were efectuate after periods of 5/10/15/ 20 and 25 days from the induction of osmotic stress. It can be observed that the varieties, seedlings age or treatment with PEG had significantly positive influence on the roots growth in barley genotypes studied. The age of seedlings presented the highest influence on the variability of this character. The best results in terms of root growth were obtained for the Regal and Andrei variety these being found to be less influenced by PEG's action, the varieties most affected were Adi, Plaisant, and DH261/22, DH260/18 DH 254/10 lines.

Key words

barley, drought tolerance, root growth, Polyethylene-glycol 6000

Researches concerning pollen's germination of some grape vine varieties in conditions of D.S. Timisoara

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Abstract Grape vine's culture was of great importance not only for ancient people from different areas, but also for our ancestors. Out of researches done it results that grape vine was cultivated on the territory of our country even since 700-1000 years B.C.

According to FAO 2010 data the area cultivated in Romania in 2009 with grape vines was of 183814 ha, being on the 11th place in the world.

In this article we made some observations upon Burgund, Muscat Ottonel, Muscat Hamburg and Coarnă neagră grape varieties, which behave differently concerning the flowering process.

The research made pointed out a good flowering process and pollination for Burgund and Muscat Ottonel and differentiated ones for Muscat Hamburg and Coarnă neagră varieties.

Key words

grape vine, germination, grains, pollen, fertility

Influence of organic and mineral fertilization on sugar content in Italian Riesling grape variety

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Banat's University of Agricultural Sciences and Veterinary Medicine, Timișoara, Romania – Faculty of Agriculture - Agro chemistry and plant nutrition compartment

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Abstract Sugar content is an element quality for wine grapes. Sugar accumulation is a feature typical of the variety or the variety cultivated and is determined by climatic and technological factors. We evaluated the comparative influence of two systems of fertilization, organic and mineral, on the sugar content of grape variety *Italian Riesling*. Organic fertilizer was provided by manure in doses of 30, 40 and 50 t/ha. Mineral fertilizer was the NPK (S) type, fertilizer with zinc [15/15/15(+3+Zn)] applied in doses of NPK₅₀, NPK₁₀₀ and NPK₁₅₀ kg active substance (a.s.)/ha. Sugar content accumulated under the influence of the two types of fertilization ranged from 221.50±4,27 g/l in case of control variant, 262.14±5,38 g/l in variant with NPK₁₀₀ kg/ha a.s., organic fertilization providing a content of 255,30 g/l when applying 40 t/ha.

Key words

Sugars, wine grapes, Riesling, organic and mineral fertilizers

Research concerning the variability of the flowers morphological features of some orchid species from Anina Mountains

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Abstract The Anina Mountains is one of the areas where the field literature indicates a whole variety of orchid species. The purpose of this paper was to evaluate the variability of the flowers morphological features of six orchid species identified in this area. The identified species were divided into two groups considering the appearance of the lip: species with three - lobed lip and species with the lip composed of two parts. The variability of the features was assessed by biometric measurements made during the flowering season of species. The analyzed features were divided into two groups: the general morphological features of the flowers and the elements of the flowers morphological features. The general morphological features of the flowers had the highest variability in all analyzed species.

Key words

orchids, flower, variability, Anina Mountains

The influence of the planting system on dry matter accumulation in leaves and shoots of some varieties of peach tree (*Prunus persica* L.)

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Abstract The peach tree ability to adapt due to the environmental plasticity made possible for it to be grown in different areas with temperate climate.

The paper presents the behaviour of some new varieties introduced in Romania, Earlirich, Royal Estate, Rubirich, October Star and Late Luka, cultivated on GF 677 rootstock, in the Tatura trellis system (5.0 x 1.0 m), V planting system (5.0 x 1.5 m), Sibari Y (4.5 x 1.5 m) and Vertical axe (4.0 x 1.5 m). The research was conducted in 2011 in the experimental field of University of Agricultural Sciences and Veterinary Medicine, Bucharest in a plantation established in 2008 on an area of 1000 square meters on a red preluvosoil. It was paid special attention to the difference given by the cultivated variety and by the modern planting systems in dry matter accumulation in leaves and shoots of peach by determinations performed in dynamics after fertilization with Fertisol and Folplant.

Peach leaf content in dry matter (%) in the first moment of analysis, June 29, ranged from 38.11% (Earlirich in Vertical Axe planting system) to 44.94% (Royal Estate in Tatura trellis planting system), and in shoots from 38.93% (October Star in V planting system) and 52.48% (Royal Estate in Vertical Axe planting system). Along with the vegetation the accumulation of s.u. in plants recorded values differentiated by the planting system, the largest accumulation of s.u. is for the Earlirich variety in Tatura trellis planting systems of 68.63% s.u. in leaves and 64.45% s.u. in shoots. At the harvesting on 12 September for the V planting system we obtain the highest dry matter accumulation in October Star of 66.48% in leaves and 70.05% s.u. for Late Luka in shoots. By the variance analysis it was highlighted the difference given by the planting system and the variety grown in dry matter accumulation in the main annual phenophases corresponding to the data of the sampling of leaves and shoots of peach tree.

Key words

peach, dry matter, planting system

Behavior of some Pelargonium genera treated with Cycogan concerning the growth and inflorescence of different cultivation sublayers

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Abstract Pelargonium flowers have been appreciated by admirers of decorative plants using them as decorators of not only interiors, balconies, windows, but also of green spaces, parks, gardens, borders, platbandes

Key words

zonal Pelargonium flowers,

during summer. In order to obtain some decorative plants its absolutely necessary to pay special attention to the vegetal material used for breeding: seeds, logs, and also of the method characteristic to the cultivation of such plants.

sublayers, height, inflorescence , Cycogan

Moreover, plants culture state of health must represent a major concern, because diseases and pests attack may lead to the considerable depreciation of the plants quality.

Research have been performed within Floriculture subject in 2011 at the Didactic Basis of Banat University of Agricultural Science and Veterinary Medicine, and had as main analysis object 3 genera (hybrids) of zonal Pelargonium flowers.

Comparative studies on some late ripening pear hybrids

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Abstract The breeding of the pear cultivars is a basic activity in fruit-growing research taking into account the great importance of this specie in nourishment, but witch has only 4,3% from the total fruit production in our country. Taking into account the necessity of the perpetual renewal and improvement of the pear cultivars, both for consumers and farmers, we proposed to study three late pear hybrids (H4-15/18, H5-12/15, H6-9/12) from the point of view of the trees vigour, their phonology, production capacity and fruit quality. The researches took place between 2006-2008, in a pear orchard set up in 1999, with trees of one year old, planted at 4/2 m distance (1250 trees/ha). The pear trees were grafted on the quince tree rootstock, with a small vigour of growing. Observations were made regarding the permanent structure of the late pear hybrids, the ramified and formation crop capacity, the phonology of floral organs, binding capacity of fruit, productive efficiency, the relationship between the leaf surface and growing level of the sprouts, fruit quality. The obtained results show the high productive potential of late pear hybrids studied, grown in Bucharest area, an zone which assures the development of physiological and biochemical process at a sustained level, giving a strong long life and a corresponding vegetation state to this species. From the three hybrids, a remarkable evolution has the hybrid H6-9/12, with a superior potential above the other two.

Key words

biological potential, phonology, productive capacity, fruit quality

Results concerning the preservation of carnations in refrigeration storage conditions

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Abstract The paper presents the results that were obtained upon storing 4 varieties of carnation in refrigerated conditions. The varieties (White Sim, Nora, Yellow Dusty Slim, Samantha) were harvested in the phase of a closed bud. After refrigerated storage without water and at a temperature of +1°C for different lengths of time (two to ten weeks) the flowers were pulsed at a temperature of +4°C for a day, within a preservation solution that has the following composition: sucrose 10% + copper sulphate 0.1%. The next stage was to deposit the flowers in a room where the temperature was of 23°C and keep them in the same solution so as to stimulate their opening. Subsequent to their opening the flowers were kept in water and in a preservation solution (sucrose 4% + copper sulphate 0.1% + sodium chloride 0.02%) in order to determine the length of their life in a vase at a temperature of 20°C. The obtained results highlight the fact that by respecting the storage technology, the vase-life at the temperature of the environment is different according to each variety, even after being stored for ten weeks. The diameter of the flowers is larger as compared to the diameter of freshly harvested flowers. If the consumer uses the preservation solution the vase-life will be prolonged with 5-6 days as compared to keeping them in plain water.

Key words

variety, temperature, water, preservation solution

Research on the phenology of certain herbaceous species in Macin Mountains National Park

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Abstract The studies performed in Pricopan Peak- Macin Mountains National Park, between 2005 and 2009, sought to emphasize the correlation between specific climatic elements of the area and the phenological phases of 50 herbaceous species within the park. Phenological observations were carried out continuously in key territories and areas covered by all types of phytocenosis. Climatic diagrams were created using the *Gausse-Walter* system for climate representation. The data obtained was expressed quantitatively which is more conclusive than a descriptive expression. The results of this research show that multiannual variations of ecological factors influenced the phenological phases and the vegetation was able to adapt to changing ecological factors. The results of the study shows that the differences in phenological phases are evident, however not profound, and their occurrence is correlated to the higher or lower levels of arid climate within the studied periods of time. The research ensures the scientific basis necessary in creating maps of phenological aspects useful in planning ecological reconstruction of natural eco-systems, and of the exploitation of natural resources within the park area. These observations may also be used to restrict tourist's access in designated areas during certain periods of time, in the *strict protected areas* and to preserve local biodiversity (Petrescu, 2007).

Key words

biodiversity, climate diagram, Pricopan peak, biological forms, phenophases

Measures for sustainable management of types ecosystems from suburban areas of Timisoara

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Abstract The bird populations from the plain forests (pedunculate oaks, Turkey oaks, Hungarian oaks and mixtures of Turkey and Hungarian oaks) of the western region of Romania, with altitudes from 100m to 300m, are represented by the families of bustards and colombidae, according to Radu, 1967.

The periurban area of the city includes the forest ecosystem, represented by Padurea Verde, agroecosistem and ecotone areas. Agroecosystems are represented by agricultural crops (in the north, adjacent thoroughfares to Calea Aradului si Calea Torontalului and in the south Calea Sagului area), pastures (Freidorf area in the western side and in the south eastern the area of Calea Buziasului – Calea Mosnitei , aiming at a mixed grassland ecosystem, agricultural crops and residential areas). This paper aims to show a picture of the avifauna of these ecosystems heavily modified by humans, share the adaptability of species of birds in such habitats. The investigation method applied is based on the path method (Ferry and Frochot, 1958), improved through a statistical method processed by specialists from the Zoology Department of the Faculty of Chemistry, Biology and Geography of the Western University from Timisoara.). During the three years of research, we found over 104 species.

From the systematic point of view, the bird populations existing within Timișoara's periurban area may be grouped in 15 orders and 32 families. These 104 species that we found, to which we may assign these marks: 20 absolute dominant species, 24 dominant species, 47 under- dominant species; 21 incidental species We noticed that 12 species out of the 20 absolute-dominant species are mainly found within the agro-ecosystems, since these represent the preponderant surface in the periurban area. From the 104 species which have been found, 21 are protected by the appendixes of the European Council Directive no. 79/409 EEC regarding the preservation of the wild birds and 58 species are protected by the Washington Convention, the Law no. 69 as of July 15th 1994, the Berne Convention, the Law no. 13 as of March 11th 1933 regarding the adherence of Romania to the Convention concerning the preservation of the wild life and natural habitats in Europe, adopted in Bern in 1979; the Red list of the species from Romania, Bucharest 2000. All the other species do not require special preservation measures.

Among the 21 species protected by the Directive regarding the birds protection (European Council Directive no. 79/409 EEC regarding the preservation of the wild birds, 20 species are protected strictly on the European level by means of the appendix no. I, 16 species are at risk and 4 species are vulnerable.

Key words

diversity, bird populations, peri-urban areas, Timișoara, ecologic season, ecosystem

The monitoring of enzyme activity of amylase on the bread dough

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Abstract This study presents the action of an exogenous enzyme: amylase in different dosages, in the bread dough. The determination of the rheological characteristics of the dough is obtained by alveographic method. Addition of amylase enzymes in bakery products results in larger loaf volume, also the effect of amylase on the bread volume improvement results from redistribution of water from the gluten phase that gives the gluten more extensibility. In the presence of amylase the fermentable sugars from the dough increase, due to the hydrolysis of starch and thus ensure the formation of enough gas in the final dough fermentation and in the first part of the baking phase, which is necessary for obtaining a loose product, well-developed. The remaining unfermented sugars contribute to taste and flavor of the product and the crust color. The amylase enzyme are specially used for obtaining bread with low fat content, low sintetic aditiv content and high fiber content. Also they are used for improving bakery products texture and flavore. The influence of amylase enzyme in the dough for bread can help evaluate and improve the insufficiently developed technology and the nutritive value of the products.

Key words

bread, amylase, alveograph method

Space method for predicting pH based on flora samples

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Abstract Based on the intimate bond that forms between the soil land its vegetation gives to the source territory a special informational value for that soil characterization, in this paper we have mainly analyzed the layer of the herbaceous plants and moss, in order to achieve a space analysis for soil's pH estimation.

Key words

soil pH, vegetation, herbaceous plants, bond, plot

We have also examined the direct connections between vegetation and soil and other micro-relief features as slope, altitude, exposure, presence of the hydrographic network etc.

For this study we have created 136 sample areas, by using a 50m X 50m grid, on the entire plot 35B, U.P. VIII Slătioara, Stulpicani Forestry, Forestry Department Suceava.