

Incidences of Fertileader Elite[®] foliar spray applications on the improvement of Fruits quality and their conservation. Trials realised on Pink Lady[®] Cripps Pink Cov.

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Abstract Improving fruits Quality, by limiting the defects of aspect, remains a major concern of the Producer. This concern certain varieties, such as Pink Lady[®] Cripps Pink Cov, who present an increased sensibility in the manipulations, not compatible with the requirements of specifications of varieties clubs lauding a high visual quality for their marketing. Morphogenesis and fruit Quality can be directly influenced, by hormonal foliar sprays like iso-pentényl-adénine (IPA), who demonstrated their efficiency on the activation of transport systems in the plant. In this context, the aim of this paper is to study the incidence of foliar sprays of Fertileader Elite[®] formulated on a Seactiv base (patented molecular complex of IPA, obtained from marine seaweeds) applied either in post thinning, or in summer applications. A comparative field trial was conducted by the Station expérimentale .la Pugère, in 2008, following a randomized 4 blocks trial. Results showed that the Fertileader Elite[®] treatment, following 3 summer applications of 5 L/ha, in replacement of 3 first Calcium Chlorine treatments, contribute to improve appreciably the holding of apples in cold room by a better preservation of the firmness of fruits. On the other hand the Fertileader treatment minimize in a not insignificant way the appearance of bruises due to the shocks realized in the harvest and after preservation, and estimated according to the procedure developed by the Centre Technique Interprofessionnel des fruits et légumes (Ctifl-France).

Key words

Apple, fruits quality, shelf life, foliar sprays, Seactiv, Fertileader

Norway maple and Sycamore trees in the parks of Timisoara

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Abstract Species of Acer genus are frequent in the streets and green spaces of Timisoara. There is nearly no park in the town where you cannot find this species in greater or smaller numbers. It is sometimes used for rows on the sides of the streets, and can be found in many places. Generally speaking Acer pseudoplatanus and platanoides trees are a usual presence in the streets of many european countries. They can be found especially on main streets, boulevards, alleys in expensive or in poorer quarters, and in many parks.

Key words

Park, trees, Acer platanoides, pseudoplatanus Timisoara

The estimation of growth-yield balance indices at Astra, Blasius, Selena and Fetească regală, in Târnave vineyard

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Abstract The goal of research made in 2009 at S.C.D.V.V. Blaj, was to estimate the value of growth-yield balance indices at four white wine grape varieties. The studied grape varieties were Astra, Blasius, Selena, varieties created and approved at S.C.D.V.V. Blaj and Fetească regală, an inland variety. Average yield at full maturity was calculated by direct measurements of 10 vine/repetition, in 3 repetitions for each variety separately. Pruning weight was also calculated by direct measurement on the same vines. The studied indices were: Ravaz index, growth-yield balance index and renewed dry matter of vine canopy. The highest value of Ravaz index, 8.11, was at Fetească regală variety and the lowest, 3.56, at Selena variety. A value of 3 to 10 for *V. vinifera* cultivars indicates the vine is balanced (Main et al., 2002). In climatic conditions of the year 2009, the growth-yield balance index has the highest value at Selena variety (21.94), framed in the normal values of 18-23 (Dejeu, 2003) and the lowest value at Fetească regală variety (10.97), which indicates an imbalance between those two physiological phenomenon. The highest amount of renewed dry matter of vegetative vine part registered to Fetească regală variety with 941 g/vine, and the lowest to Astra variety with only 358 g/vine, both values under the inferior limit 1300 g/vine (Cabonneau, 2003), expressing a grape yield under the potential production of varieties, being diminished by climatic accidents in spring and summer of 2009.

Key words

Ravaz index, growth-yield balance index, renewed dry matter of vine canopy, yield, pruning weight

Results concerning the analysis of the nitrates, nitrites and of the ammonium ions of the underground waters of little depth in the territory neighboring the town of Timisoara, during the years 2007-2008

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Abstract In this study are presented and interpreted the results obtained in the years 2007 and 2008 during the analyses of the underground water, taken from little depth fountains, in the surrounding areas of the town of Timisoara, concerning its azotes compounds.

Key words

Compounds of nitrogen, azotes, samples, data collecting places, pollution of underground water

Considerations regarding water consumption at some grapes varieties in Blaj wine-growing center

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Abstract The aim of this study was determination of vine evapotranspiration in non-irrigation conditions, using the direct method of soil water balance (RET-real evapotranspiration) and the indirect method Thornthwaite (PET-potential evapotranspiration). The researches have been made on three grape varieties: Fetească regală, Riesling italian and Muscat Ottonel, at Research and Development Station for Viticulture and Enology in Blaj wine-growing centre. Comparing water consumption of years 2006-2008, determined by direct and indirect methods, it was found that the average PET during the vegetations period (4996 m³/ha) was higher than RET determined by the soil water balance method to all varieties studied. Regarding the influence of variety on the vines water consumption, is found that in climatic conditions of years 2006-2008, the variety Muscat Ottonel had each year, the lowest water consumption, with a average of 3972 m³/ha, followed by cultivar Riesling Italian (4117 m³/ha) and by Fetească regală (4136 m³/ha), with small difference between the last two. In dynamic of the mean daily water consumption, have been registered values between 7.8 m³/ha/day in April and 28.7 m³/ha/day in July, by the soil water balance method, respectively from 16.9 m³/ha/day (April) to 39.6 m³/ha/day (July), with Thornthwaite indirect method.

Key words

grapes wine variety, evapotranspiration, soil water balance, water consumption, Thornthwaite method

Influence of the bud load level at pruning on fertility elements, in Blaj wine-growing center

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Abstract The research was conducted in spring 2010, at SCDVV Blaj on Astra Blasius, Selena (varieties created at S.C.D.V.V. Blaj) and Fetească regală grape varieties grafted on to Kobber 5 BB. At pruning was left three buds loads level on vine: 25, 35, 45 buds/vine. It was calculate the percentage of dead buds, of fertile shoots and the rates of fertility. At Astra and Blasius, at 35 buds/vine were recorded the highest percentage of dead buds, 45.71% and 51.43%. Best percentage of fertile shoots, 75% was the variety Astra (35 buds/vine) and Fetească regală - 93.75% (25 buds/vine). The highest values of fertility coefficients were recorded at all four varieties at a 25 bud load level per vine. From all four varieties the best a.f.c. = 1.70, and r.f.c. = 1.65 were registered at Fetească regală. The other three varieties recorded significantly lower values of fertility coefficients (Astra - a.f.c. = 1.57; c.f.r. = 1.20; Blasius - a.f.c. = 1.53; r.f.c. = 0.69, Selena - a.c.f. = 1.53, r.f.c. = 0.69). For each varieties it was tested the influence of bud load level, the variety and the interactions of this factors (bud load level x variety) on number of inflorescences and also on the fertility coefficients. It was highlight that the total number of shoots per vine, number of fertile shoots and number of inflorescences increased concurrently with the increase of buds/vine, so that were established the positive correlations for the four varieties.

Key words

fertility, absolute fertility coefficient, relative fertility coefficient, grape varieties, shoots, inflorescences

Evolution of regeneration in stands where intensive treatments were applied and the study of beech seedling increment

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Abstract To achieve the proposed objectives there have been conducted researches in 18 permanent experimental blocks and 7 itinerary experimental blocks located in all types of intensive treatment. These experimental blocks were located in all forest formations and geographic areas where these treatments have a high percent of application. Annual inventories of the main species have been conducted in all permanent experimental blocks. These inventories have been made for a period of 2 to 5 years of cutting. For experimental blocks placed on the itinerary the regeneration has been followed for a much longer period of time. To stands where intensive treatments have been applied the evolution of regeneration process has been analyzed like a result of measurements and evaluations. For beech seedlings another analyses have been made. It is about height increment that has been study in correlation with their position in the "openings". Finally product recommendations have been made in order to intensive treatments application and annual inspection of regeneration.

Key words

natural regeneration,
intensive treatments,
openings, seedling
increment

A comparison between the pasteurization efficiency of pulp juices and not pasteurized juices

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Abstract Global health problems led to the popularization of natural fruits juices as a healthy alternative to the other kinds of drinks. Fruits juices has to correspond to consumers demands, to offer the guarantee to be a food product from production, organoleptic and nutritional qualities besides production normative.

Key words

pulp juices, pasteurisation,
total number of germs

In the present study it was determined microbiological lowdind from juice samples (apples, pears and oranges) pasteurised and without preservation agents and not pasteurised (fresh). Analysis were effectuated on medium for mesophile microorganisms in shelf life of the three products (9 month shelf life).

After heat treatment at 37⁰C applied 5 days, pasteurized juice samples presented an evolution of microbial segment that show the presence of spoilage and the possibility of human health incident in an improper stored. For samples not treated with heat it wasn't a significant difference in number of germs.

A Mathematical Representation of the Dependence of Fertilization and Climate Conditions Hectoliter mass in Winter Wheat

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Abstract The hectoliter mass of cereals is by definition the mass of that amount of grain required to fill a specified receptacle.

The aim of this paper is the development of a mathematical representation that allows the development of a parametric correlation between the hectoliter mass and the rates of N, P, K and climate factors (average monthly temperature, accumulated monthly precipitations). Results contribute to the evaluation of the influence of temperature and precipitations on hectoliter mass in winter wheat crop.

Key words

winter wheat, hectoliter mass, mathematical representation, climate conditions

A Mathematical Representation of the Dependence of Fertilization and Climate Conditions 1000-Grain Weight in Winter Wheat

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Abstract 1000-grain weight (TGW) is a yield component that supplies preliminary information on its quality. Developing a mathematical representation that allows an assessment of grain production quality at multi-factorial level (1000-grain weight, doses of N, P, K and climate factors) corresponds to present trends of mathematical imaging of the dependence between production and production factors. The equations described in this paper show the way in which 1000-grain weight (TGW) is influenced by mineral fertiliser doses used as well as by the climate conditions of the monitored years. The annual average of the errors calculated for TGW, for both cultivars (Alex and Romulus), is relatively low (below 4%). Results contribute to the evaluation of the influence of temperature and precipitations on TGW in winter wheat crop.

Key words

winter wheat, 1000-grain weight, mathematical representation, climate conditions

Researches regarding the chemical control of winter moth (*Operophtera brumata* L.) in plum tree, in the orchard Lugoj-Herindești, in 2009

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Abstract The researches on the chemical control of winter moth (*Operophtera brumata* L.) were carried out in an intensive 8-year old plum tree plantation, the variety Stanley, on a number of 5 variants treated with insecticides and an untreated control variant. The insecticides tested were applied in variants at the moment when we recorded an economic harm threshold (EHT) of 2 caterpillars per 1 linear meter branch. The best efficacies of this pest control were provided by the insecticides: Decis 2.5 CE (deltamethrin) conc. 0.02%, Calypso 480 SC (thiacloprid) conc. 0.02% and Sinoratox 350 (dimethoate) conc. 0.1.% [5].

Key words

insecticides, efficiency, pests, larvae, plum tree

Researches concerning drought resistance of some groundnut genotypes cultivated on the typical argiloiluvial cernozion from Caracal Research Station

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Abstract It was experimented eight groundnut genotypes in the pedoclimatic conditions from Caracal Research Station in 2007-2009 periods. Here, the groundnuts were cultivated in a heavy soil and confronted with the lack of water, especially in the summer when the plants need a moist period to form the pods. 2007-2008 was not a very favorable year for groundnut crop while 2008-2009 was considered a relative good year. It were made observations concerning the height plant and the number of leaves in the two different years, it was calculated the yield and the one thousand seed mass and the genotypes response to drought conditions. It were also calculated the indices of sensibility to stress and of tolerance to stress. From the experimented genotypes it was found sensible and tolerant varieties to stress conditions, but the experimentation area is not very good for groundnut crop or if it is cultivated to be irrigated in time.

Key words

groundnuts genotypes, drought, heavy soil, stress

Flower breeding in Korea at the National Horticultural Research Institute (NHRI)

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Abstract Flower plants suitable for cultivation under the subtropical conditions as of the middle and southern areas of Korea have been developed by breeding organizations as the National Horticultural Research Institute (NHRI) started in 1950s. New floral cultivars were released by NHRI in and released new rose, gladiolus, gerbera, chrysanthemum lilies carnations and native flowers which have good morfo-decorative characteristics. These cultivars have broad spectrum of colors and desirable characters such as vigor; multiple flowering; resistance to virus, Fusarium, and neck rot; and high rate of multiplication etc. The researches are going on to adopt genetic engineering technology, together with the development of superior cultivars. For the breeding program, genetic resources are collected, characterized and maintained. In this paper were presented the floricultural crops protected by domestic law in Korea, breeding team involved in Program in the National Horticultural Research Institute (NHRI), main breeding organizations, laboratories and some results obtained in floriculture.

Key words

floral plants, cross breeding, breeding techniques, cultivars

Researches regarding bitter melon (*Momordica charantia*) in *in vitro* regeneration

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Abstract Using several combinations of cytokinines and auxines, we have study the regenerative capacity at different explants, the rooting shoots and their acclimatization and callus production of *Momordica charantia* L. The growth regulators BAP and ANA cause direct organogenesis and BAP in combination with TDZ and BA in combination with Kin provide indirect organogenesis.

Key words

in vitro regeneration, cytokinines, explant, regenerative capacity

The water stress resistance to some foreign sunflower hybrids

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Abstract This paper describes the drought strong negative impact on the year 2007, in comparison with the average of years 2005-2006 to sunflower seed yield of the 5 foreign sunflower genotypes, in the presence of a Romanian control. There was substantial variability among genotypes. The most drought resisting sunflower hybrids were Aldaba and Fleuret.

Experimental work has shown that water stress resulted in a greater reduction in seed yield than stress in later stages of development. Not only is there an overall reduction in seed yield, but the oil content and oil yield can be reduced. Although many tall varieties of sunflower are considered drought resistant, the potential yield of the cultivars is quickly reduced by water stress.

Key words

sunflower, hybrids, water stress, drought, variability

Studies regarding the breeding value to some Romanian sunflower hybrids

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Abstract The achievement of a genetic diversity by cultivating more hybrids with different reactions at the conditions of environment, with different precocity, constitutes the simplest and the most secure way of reduction of the fluctuation of the production of the sunflower. If the technological elements are to a great extent firmly and correctly applied, and the climatic conditions practically uncontrollable, the genotype is the most dynamic factor of influence of the productivity of the sunflower.

The researches accomplished in the central area of Oltenia, have demonstrated the different reaction of some Romanian hybrids of sunflower, depending on the genotype. The most performative Romanian genotypes of experienced sunflower had proved to be Saturn and Justin, these being able to be extended in culture and introduced in the programme of improving the sunflower, as parents of the creation of new productive and sound hybrids.

Key words

sunflower, native hybrids, genotype, productivity

Sex component classification (SCC) of Fluted pumpkin (*Telfairia occidentalis* Hook.F.)

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Abstract This study was carried out at the experimental field of the federal college of animal health and production Technology, Ibadan to evaluate the discriminability of the sex component of *Telfairia occidentalis*. The results indicated that male component of the plant constitute a greater discriminating index than the female component and that the sex component of the plant is discriminable because 111.095 returned for the within group's F statistics is greater than $F_{(1, 70; 0.01)} = 7.05$. The discriminant function has variance function of 6.172 with an F ratio of 14.510 and it is greater than $F_{(7, 64; 0.01)} = 2.90$ indicating that the discriminant function is efficient and the population is discriminable.

Key words

Discriminability, Sex component, variance difference and mid point cut-off

The influence on flora and vegetation of the water quality in Liebling accumulation lake

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Abstract Located in Timis County, the Liebling accumulation is one at the most important accumulation lake of the area. At present it is administered by the Association of Sport Fishermen Timisoara. Our research (2005-2009) followed water sampling, analysis and interpretation of the results and the study of the flora and vegetation, making several observations regarding the influence of the water quality on the latter. The chemical analysis of the water samples was performed in keeping with the quality standards included in *norm 161/2006* issued by the Ministry of Environment and Water Usage, in the laboratory of the National Administration „Romanian Waters” Banat – Timisoara and consisted in determining the oxygen level, the nutrients, the pH, the suspensions and the water total hardness. The study of the flora implied creating the list of species and their analysis phytogeographically, biologically and ecologically. The study of the vegetation implied the establishment and the description of plant associations (according to the methodology of the Central-European phytocoenologic school). Water analysis indicate the moderate quality, with negative impact on the plant diversity: only 47 % of species are aquatic and paludicolous; concerning vegetation, we observed an excessive development of plant associations that lead to the clogging water.

Key words

Liebling, chemical parameters, water quality, flora, vegetation

The colorimetric method of determining nickel presence in hydrogenised fats

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Abstract Colorimetric determination of the nickel content in solidified fat was subjected to standard by several hydrogenation factories. Laboratory results confirmed entirely the possibility of applying the colorimetric method in industrial practice. **Key words** nickel, fat, colorimeter

Qualitative assessment of flour with a depth consistency meter and the consistence of dough with medium rate of viscosity

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Abstract In wheat flour, the most advantageous viscosity is 60% and the duration of fermentation is 3 hours, since the decisive results after the first minute depend on milling and on panification. In the case of rye flour, the most advantageous viscosity is 65% for a duration of fermentation of 1 to 3 hours. We can as well lower the fermentation time to only 30 minutes, for a lower dough consistency, corresponding to 145.58 ml of water for 100 g dry substance. **Key words** viscosity, flour, consistency meter

Researches regarding soil humidity, in the conditions of cultivating corn in the classical and the no-tillage systems

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Abstract The corn is a plant that needs to be hoed for eliminating the weeds. The production of corn grains or of corn for silos is highly connected with the action of destroying the weeds during plant's vegetation period. Everybody knows that a corn crop that was not hoed is totally compromised because of the weeds. Thus, a higher production of corn cultivated for grains or of corn for silos cannot be obtained without executing three or four mechanical and hand weeding actions in the optimum period.

Key words

Corn, soil humidity, tillage

Soil humidity and production of the genetically-modified soy bean, cultivated in the classical and no-tillage system, in the conditions provided by the Danube meadow

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Abstract Specialists chose the Danube Meadow of 2007-2009 for making some tests on the genetically-modified soy that was cultivated in two systems: the classical and the no-tillage systems.

Key words

Soy bean, soil humidity, tillage

The following soil works were executed in the classical system: ploughing + harrowing in fall, harrowing in spring, two works with the disk + harrowing in spring, three mechanical weeding/hoeing between the lines + three mechanical weeding/hoeing on the line.

No soil work as made when using the no-tillage system.

The soil humidity was taken at 0 - 60 cm depth. When determining the soil humidity in the two years of tests, the specialists noticed that the humidity of the soil worked according to the no-tillage system was equal with the humidity of the soil worked in the classical system variant.

Fighting against weeds in the classical system, after the soybeans sprang, was made by three mechanical hoeing between the lines and three hand-weeding actions on the line.

The soybean production in the no-tillage system was equal with the production obtained by using the classical system — the differences appeared being part of the experimental errors.

The Romanian specialists made numerous tests with different herbicides based on atrazin substance, as *Gesaprim*, *Argezin*, *Pitezin* or *Onezin*, proving that the mechanical and hand-weeding are no longer necessary in the corn crop. Nevertheless, many agricultural engineers perform mechanical weeding actions in the corn crop, even though the soil is clean of weeds due to the herbicides used, saying that the weeding actions are absolutely necessary for breaking the capillary vessels that facilitate the EVAPORATION OF THE WATER FROM THE SOIL.

Assessment of drought tolerance in some barley genotypes cultivated in West part of Romania

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Abstract In the present paper, we have taken into study a collection consisting of autumn barley in order to evaluate quantitative drought resistance criteria. The genotype were tested in non stressed and stressed conditions. Some drought tolerance indices, Stress Tolerance Index (STI), stress tolerance (TOL), Stress Susceptibility Index (SSI) and Mean Productivity (MP) were used. The indices were adjusted based on grain yield under stress (Ys) and non-stress (Yp) conditions. There were significant differences for all criteria among the genotypes.

The significant negative correlations of Ys with Yp, distinct significant and positive with MP, distinct significant and negative with TOL, ISS and distinct significant positive with STI.YP it was correlated distinct significant with MP. TOL,ISS. Genotypes were significantly different for their yield under stress and non-stress conditions. This study was conducted to assess the selection criteria for identifying drought tolerant genotypes and high-yielding genotypes in drought stress and non-stress conditions.

Key words

barley, drought tolerance indices, water stress

The effectiveness of agro-technical measures on production of potato variety Santé

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Abstract Santé variety is a variety developed in 1983, Dutch agricultural firm. It is a kind a little later in the vegetation period of 110 days. Santé Harvests the variety in the two years are significantly influenced by climatic conditions. Depending on the fertilizer production has fluctuated between 25.82 t/ha (weeds 40 t/ha) and 30.43 t/ha (N₁₂₀P₉₀K₉₀) in 2004, and between 28.20 t/ha (weeds t/ha) and 33.00 t/ha (N₁₂₀P₉₀K₉₀) in 2005. Following implementation of measures to combat weeds, potato production has fluctuated between 25.67 t/ha and 30.59 t/ha in 2004 and between 27.60 t/ha and 34.07 t/ha in 2005. Following the combined action of the two factors most experimental production in 2004 was 35.48 t/ha, and in 2005 was 39.75 t/ha.

Potatoes are of particular importance both for industry and human nutrition, sometimes also used in animal feed. Technological links that heavily influenced the success of established culture are: the location of culture, soil tillage, fertilization and weed control (1, 2, 3, 4 and 5). The measures applied depend largely on the size and quality of the crops. The research conducted in 2004-2005 on the Perimeter of the Station of Young Naturalists. Was subdivided parcels experience Location Such as 4x6 methods, in three repetitions, with a total of 72 experimental plots (6).

Key words

culture, fertilizers, herbicides, production

The classical garden in America

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Abstract Classical architecture long appealed to Americans, as can be seen, the buildings that survive from the colonial Federal periods. However, the classical influence in garden design had yet to be articulated in American back yard. American gardeners and designers had looked to landscape gardens of England and the formal gardens of France for models. These garden styles were inspired by classical gardens, but had been translated to suit each country and climate. Furthermore, the classical garden had been further modified to please the lavish tastes of monarchs and aristocrats.

Key words

garden, design, flowers, style, terrace

Research on the effect of arbuscular mycorrhizae on some physiological indices of lettuce – *Lactuca sativa* L.

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Abstract The biological material used was represented by commercial genotypes of lettuce (*Lactuca sativa* L.). In order to induce the mycorrhiza, we used the commercial inoculum named INOQ Top, and we determined the total chlorophyll content and the foliar surface. The chlorophyll content, and implicitly CCI (the chlorophyll content index) reacted similarly with AMF colonization, with higher values in the case of the variants mycorrhized with phosphorus 1; 0.5 as compared to the variants without phosphorus. The mycorrhized variants registered a bigger foliar surface when they were watered with a nutritional liquid with normal phosphorus content.

Key words

mycorrhizae, chlorophyll, foliar surface, *Lactuca sativa*, fungi, inoculum

Ash trees in the parks of Timisoara

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Abstract Ash is a frequent tree species that can be found in the streets and green spaces of Timisoara. There is nearly no park in the town where you cannot find this species in greater or smaller numbers. Though it is not used for rows on the sides of the streets, you can still find it in many places. *Fraxinus excelsior*, *F. angustifolia*, *F. ornus*, *F. americana* can be found mainly in parks and private domains, generally isolated, rarely in groups.

Key words

Park, trees, *Fraxinus excelsior*, Timisoara

Comparative results regarding iron (Fe) and manganese (Mn) obtained after analysis done from water samples obtained from high depth drilled in the N-V extremity of Timisoara, between years 2007 and 2009

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Abstract This paper presents the material and method of research used in order to obtain the results of the analysis done on underground water samples obtained from high depth drills situated in the periurbane area near Timisoara, regarding heavy metal content (Fe and Mn). Also the results obtained from the analysis performed during the years 2007, 2008 and 2009 are presented.

Key words

drill, permanent underground water pumping system, sampling and analysis of water samples

Biodiesel – the alternative energy for future (short review)

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Abstract Twentieth century, the period of the great discoveries and transformations of human civilization, is the same as the period during which they produced the most profound environmental degradation affecting the major quality of life.

One of the most important global environmental issues is the greenhouse effect. The main cause of this effect lies in the fact that huge quantities of carbon dioxide and other greenhouse substances accumulate in the air layer to form a "blanket". Substances that act: freon, methane, ethane, nitrogen oxides, hydrogen, water.

The properties of these substances so that they are self-giving opportunity to pass easily ultraviolet reaching the ground surface, these rays are converted into heat and heat from the surface through this layer goes so much harder to create situation - the quilt (blanket) is as thick as it is much warmer. This effect called greenhouse gases cause global climate change.

Concerns growing over the last decade on these issues, as well as the natural depletion of oil and coal have led researchers to find alternative energy sources, with great importance and use of biodiesel obtained after extracting oil from oil seeds like sunflower, rapeseed, canola, soybean, safflower, and more.

Comparative analysis on the chemical elements show the advantage of using biodiesel derived from plant oil to fuel oil classic.

Currently biofuels throughout their entire life cycle, produce about two-thirds less greenhouse gas emissions than conventional automotive fuels. 28% of greenhouse gases in Europe are produced by transport, so that emission reductions can be achieved by using biofuels, meet the EU commitments under the Kyoto Protocol.

Key words

biofuels, alternative energy, biodiesel, quality parameters, transesterification

The characterization of under water bodies existing in Timisoara metropolitan area and the presentation of the state of these waters concerning their quality in the year 2007

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Abstract In this study are mentioned the underground water sources of Banat Hydrographic Area, and are characterised the underground water bodies, in connection with Timisoara Metropolitan area, and their state, from the point of view of their quality in the year 2007.

Key words

Underground water resources, underground water body, phreatic water

Aesculus hippocastanum L. trees in the parks of Timisoara

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Abstract *Aesculus hippocastanum* is one of the most important ornamental tree species that one can find in the parks and green spaces of the town of Timisoara. Horse chestnut trees always existed in Timisoara in the last three hundred years, and still exist beautiful trees belonging to this species today. With its great height, nice leaves and flowers, pleasant shape, the tree attracts the attention wherever it is, in parks, lanes, streets, yards. You can find *Aesculus hippocastanum* trees in many parts of the town. They attract the attention especially in May when they are filled with white or pink flowers. The present study tries to locate the most important trees situated in central parks of the town in main urban green areas.

Key words

Park, trees, *Aesculus hippocastanum*, Timisoara

English yew trees in the parks of Timisoara

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Abstract *Taxus baccata* L. is one of the important and rare tree species that can be found in the parks and green spaces of the town of Timisoara. *Taxus baccata* trees were present in Timisoara at least since the XIXth century, and there are still beautiful trees belonging to these species today. The species is considered very valuable, and in small numbers it exists in parks, lanes, streets, yards. You can find *Taxus baccata* trees in many parts of the town. They attract the attention especially in the winter, as green spots in the town. The present study tries to locate the most important trees situated in central parks of the town in main urban green areas.

Key words

Park, tree, *Taxus baccata* Timisoara, Yew

Small leaved and large leaved Lime trees in the parks of Timisoara

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Abstract *Tilia* is a frequent tree species that can be found in the streets and green spaces of Timisoara. There is nearly no park in the town where you cannot find this species in greater or smaller numbers. Though it is not very often used for rows on the sides of the streets, you can still find it in many places. Generally speaking *Tilia* trees are a usual presence in the streets of many European countries. They can be found especially on main streets, boulevards, alleys in expensive quarters, and in many parks.

Key words

Park, trees, *Tilia platyphyllos cordata*, Timisoara, Lime

Black Poplar trees in the parks of Timisoara

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Abstract *Populus nigra* is one of the most frequent tree species that can be found in the streets and green spaces of Timisoara. There is nearly no park in the town where you cannot find this species in greater or smaller numbers. It was always very common on the streets of the town, probably because it was between the cheapest solutions to be found. Though today it is more rarely used for rows on the sides of the streets, you can still find it in many places. Generally speaking *Populus nigra* is a usual presence in the green spaces of Central Europe, though replaced nowadays in many places with more expensive species.

Key words

Park, trees, *Populus nigra*, Timisoara

Research on the production arrangement applied Steierdorf Unit III

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Abstract Looking at the documentation and the research field, leading to the following: area unit, the production of Steierdorf III is 2770.7 ha and is divided into 113 parcels and 452 sub-plot is the average area of 6.1 ha arrangements unit. Forest area was classified into Group I fully functioning forests with special protection functions, the following functional categories:

- 1C - forests on the slopes of rivers and streams in mountainous and hilly area which feeds the lake Golumbu, located at a distance 15 to 30 km upstream limit accumulation (T. IV) - 40.0 ha (1%);
- 2A - forests situated on the rocks, the detritus, the land slope exceeds 35 degrees (T.II) - 410.4 ha (16%);
- 2E - made forest plantations on degraded land (T.II) - 60.4 ha (2%);
- 2K-forest in karst areas (T. IV) - 1116.7 ha (43%);
- 3J - bands of forest in the vicinity of the tailings deposit (T.II) -16.0 ha (1%);
- 5L - forest protection zone set up (buffer zone) of the National Parks Reserves Semenic-Caraş Gorges and Beuşniţa- Nera (T. III) -969.9 ha (37%).

Key words

area, unit, production, forest

Research on the measurements used in the test areas located in production Steierdorf III

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Abstract Also called the province of beech climate because the climate is characterized by sweet, with overtones of Mediterranean with hot, humid summers and mild winters, with snow not too high, with frequent winter frosts and frozen and low thermal amplitude. Precipitation annual average is 900 mm. The wettest months are from May to July, and the most arid, December and January. In growing season, the average monthly rainfall is 110 mm. Average numbers of snow days is 30-40 days, average number of days with snow cover, is 80 days. Mean annual evaporation is 300-400 mm. in general; soil water balance is favorable to the development of forest vegetation, the main species (fir, beech), under favorable conditions. The average annual temperature is between 6 ° -8 ° C. The hottest month is July-August (16-18 °) and the cold in January (- 3°C, -4°C). These values vary depending on altitude. Growing season average temperature is 12-14 ° C.

Key words

measures, products, forest

The frequency of late frosts is greater than the early, can occur even in May.

Winds knock most common spring-summer and autumn and SV V - N and NW in winter, sometimes reaching particular intensity-particularly in the autumn - causing uprooting trees and tearing in isolation. Martonne aridity index of which varies 36-42, the production unit in the following places fitoclimatic story:

- FM1 + FD4-floor mountain - the beech premontan-2451, 3 ha (94%);
- FD3-floor hills of sessile oak, beech and fir - beech - 162.1 ha (6%).

Assessment variability of alfalfa regenerants using RAPD molecular markers

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Abstract The main purpose of this study was to evaluate the genetic variation of the in vitro regenerated plantlets of F105-90 alfalfa line using five RAPD primers. In order to fully exploit RAPD results for studies of the genetic structures of regenerants of F105-90 line, it is necessary to use a method of data analysis that permits identification of variations within population. Genetic identity between the explant-donors and the in vitro derived plantlets was performed using genetic similarity coefficient, polymorphic information content and polymorphic index. The discriminating power of the primers analyzed ranged between 0.189, in the L-14 primer, and 0.298, in the G-06 primer, the mean being 0.239. The discriminating index had values between 0.727, in the case of the G-10 primer, and 1.789, in the case of the G-06 primer, which proved the highest polymorphic capacity in the regenerants of the F 105-90 line.

Key words

genetic diversity, alfalfa, RAPD markers

Estimating alfalfa somaclonal variation by ISSR markers

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Abstract The main purpose of this study was to evaluate the genetic variation of the in vitro regenerated plantlets of Sigma alfalfa genotype using five ISSR primers. In order to fully exploit ISSR results for studies of the genetic structures of regenerants of Sigma genotype, it is necessary to use a method of data analysis that permits identification of variations within population. Genetic identity between the explant-donors and the in vitro derived plantlets was performed using simple matching coefficient, genetic similarity coefficient, polymorphic information content and polymorphic index. The variance analysis was used to estimate the polymorphism among the ISSR patterns. The results indicated that was significant genetic diversity among regenerated plantlets ranged from 11,53% to 28,24%. A medium level of genetic diversity was found between explant-donors and the in vitro derived plantlets ranged from 35% to 10%. The total polymorphism generated by a certain primer (PIC) recorded the biggest value (0.476) in the case of the A-12 primer, significantly superior than the A-13 primer (0.173). The superior efficiency of the A-12 primer in polymorphism localization between the Sigma regenerants is confirmed also by the high discriminating index value, statistically assured (2.857). The polymorphic potential of the two primers is direct proportional with their discriminating power, considering that the number of the polymorphic bands generated is similar

Key words

genetic diversity, alfalfa, ISSR markers

European spruce trees in the parks of Timisoara

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Abstract Picea abies is one of the important tree species that can be found in the parks and green spaces of the town of Timisoara. Picea abies trees existed in Timisoara for a long time, and there are still beautiful trees belonging to these species today. With its great height, pleasant shape, the tree attracts the attention wherever it is, in parks, lanes, streets, yards. You can find Picea abies trees in many parts of the town. They attract the attention especially in the winter, as green spots in the town. The present study tries to locate the most important trees situated in central parks of the town in main urban green areas.

Key words

Park, trees, Picea abies, Timisoara

Black locust trees in the parks of Timisoara

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Abstract *Robinia pseudoacacia* is one of the most frequent tree species that can be found in the streets and green spaces of Timisoara. There is nearly no park in the town where you cannot find this species in greater or smaller numbers. It was always very common on the streets of the town, probably because it was between the cheapest solutions to be found for the townhall. Though today it is more rarely used for rows on the sides of the streets, you can still find it in many places. Generally speaking *Robinia pseudoacacia* is a usual presence in the green spaces of Central Europe, though replaced nowadays in many places with more expensive species.

Key words

Park, trees, *Robinia pseudoacacia*, Timisoara

Researches concerning the behavior of *Cymbidium* sp. protocorms cultured in “in vitro” cell culture

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Abstract Protocorms of *Cymbidium* sp. grow and present balanced, organogeneses, when cultured on MS basal medium, supplemented with 30 g/l sucrose, 7 g/l agar and 0.1 mg/l BA. They produce normal plantlets, which can be transferred “ex vitro” and acclimatized to the conditions of the non-aseptic life.

Key words

Cymbidium sp., protocorms in vitro culture, organogenesis

Studies concerning the “in vitro” multiplication of *Nephrolepis exaltata* ‘Fluffy Ruffles’

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Abstract The “in vitro” multiplication of ferns, mainly of *Nephrolepis exaltata* leads to their quick propagation and restores their youth-thus determining a higher ornamental value of these plants (due to the aspect of leaves, as well as of whole plants) with respect to those obtained by conventional (traditional) vegetative. *Nephrolepis* cultures were initiated using explants consisting in apices and stolon segments placed on Murashige-Skoog mineral media. The caulogenesis preceded the rhizogenesis. The acclimatization of “in vitro” formed plantlets was successful in most cases.

Key words

Nephrolepis exaltata, in vitro multiplication

The effect of heavy metals (zinc) on roots formation of *Allium sativum* L. bulbs

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Abstract The inefficient behavior of repairing mechanism could determine the production of some cellular lesions that could be irremediable. To realize the experiment were choose onion bulbs of equal size, (*Allium sativum* L.) from local populations of the West region of Romanian Cenad (Timiș district) and Fiziș (Bihor district). The object followed was the one of establishing the roots formation in zinc solutions comparative with the water witness. For both the analyzed populations (Cenad and Fiziș) the zinc influence on length increasing of the roots was different from the biggest to the smallest concentration

Key words

zinc, roots, bulbs, *Allium sativum* L.

Radicular apparatus development to the garlic bulbs (*Allium sativum* L.) under aluminum influence

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Abstract The big aluminium concentrations in feeding environment were toxic for majority of plants. One of the intoxication methods of plants with aluminium constituted the acid rains that because of its acids, put into liberty the aluminium of minerals from which could enter in competition with Ca, to set on trees roots, reducing its provision in Ca and increasing moderation and low pH of water precipitations and a huge concentration in Al, it diminished or blockaded mineralization processes, through which mineral elements of trees for organic synthesis were got in circulation.

Key words

aluminium, roots, bulbs, *Allium sativum* L.

Hereditry research on the number of siliquas per plant in mustard crop

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Abstract In order to make selection methods more efficient and to make improvement works perfect in developing new mustard cultivars at the Agricultural Research Station in Lovrin, we carried out a series of research and biometrical measurements starting from the necessity of better knowing specific variability, quantitative features, productivity features, the way they are passed on hereditarily, and the intensity of the correlations between them.

Yielding capacity is a complex quantity feature based on a large number of elements relying on numerous genes with small effects. In developing mustard cultivars, the improver should get and use information on the heredity of the features for all the components in order to guide hybrid generations towards a genetic constitution able of improving production.

Heritability studies have determined quantitative genetic variability made mustard and nature of gene action affecting the production and main components of the production.

They studied a number of quantitative characters including the number of siliquas per plant. Compared with the parental forms most hybrids have achieved higher values for number of siliquas per plant.

At genitors study, there was a higher proportion of dominant alleles (60-70%) involved in genetic determinism of character study, based on a uneven distribution of positive and negative alleles.

In terms of the proportion of dominant or recessive alleles they possess, ie positive or negative parental forms were classified into distinct groups. These differences were due to the action of environmental factors that have led to different groups of genes that have the main role in controlling the characters studied event.

From the point of view of the number of siliquas per plant, the Ascot and Aba mustard cultivars have recessive alleles with positive effect, while the Carnella and Gisilba mustard cultivars cumulate a larger share of dominant alleles with negative impact on the pheno-type manifestation of the feature. In the case of this feature, we could see that dominance was associated with positive alleles in the Aba and Ascot mustard cultivars, i.e. an association of recessiveness with positive alleles in the Erica and Amog mustard cultivars. We could also see that the most valuable genitors from the point of view of the general combinatory capacity are the Gisilba and Aba mustard cultivars.

Key words

mustard, siliqua, alleles, effects of dominance and additivity