

Essential oils main constituents and antibacterial activity of seeds from Iranian local landraces of dill (*Anethum graveolens* L.)

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Abstract In this study essential oils of seeds from eighteen Iranian local landraces of dill (*Anethum graveolens* L.) were chemically analyzed and their possible inhibitory effects were evaluated against Gram-positive and Gram-negative bacteria. The investigated oil was hydrodistilled from air dried seeds and analysed by GC-FID and GC-MS. The screening of antimicrobial activity of essential oil samples was individually evaluated by measuring their diameter of inhibition zone (DD) and minimum inhibitory concentration (MIC) against *Bacillus subtilis*, *Enterococcus faecalis*, *Staphylococcus aureus*, *S. epidermidis*, *Escherichia coli*, *Pseudomonas aeruginosa* and *Klebsiella pneumoniae*. Twenty-seven constituents were identified (≥99.8% of total oil samples) with carvone and limonene, which are as the most abundant compounds that totally constituted about 51.2% to 91.0% of investigated essential oils. Dill apiole (0.2-31.9%), *trans*-dihydrocarvone (3.6-14.5%) and α -phellandrene (0.2-6.6%) were of other components in appreciable amounts. Moreover, the highest activity of *A. graveolens* oils was observed against *Bacillus subtilis* (DD= 27 mm; MIC= 1.87 mg/ml). However, *E. coli* was the most sensitive Gram-negative and, on the contrary, *E. faecalis* was the most resistant Gram-positive bacteria.

Key words

Anethum graveolens L.,
Antibacterial activity,
Essential oil, Carvone,
Limonene

Efficacy of copper fungicides to control potato late blight in organic crop

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Abstract The first era of chemical control of late blight commenced with Bordeaux mixture in the nineteenth century. Then, in the early 1900s were introduced copper oxychloride and copper oxide.

Copper fungicides can be highly effective if it is applied prophylactically and with the complete coverage of the foliar surfaces, including the undersides of leaves where the pathogen usually sporulates.

The chemical crop protection become costly as for the production itself and for the environment.

In NIRDPSB Brasov in 2010-2011 were analyzed some copper fungicides to managing potato late blight in organic crops.

The results indicated that with regular cheking of the plot, using relative resistant varieties and making a

good coverage of the foliage the copper fungicides could control late blight in organic crop.

Key words

potato, late blight,
cooper fungicides, organic
crop

Arrangement of Southern balconies and terraces with permanent floral compositions (I)

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Abstract The increasing number of surfaces covered with asphalt or paving led to the expansion of sealed areas; and the increasing number of blocks of flats emerged in a great interest for growing plants in pots, hanging baskets, window boxes, etc., to beautify these terraces and balconies. Thus, the flower and dendrological - production sector became the most active sector of horticulture.

Arranging terraces and balconies with ornamental plants is an important sector in the present days, and combining these plants in such a manner to have both a harmonious look and to be compatible with each other, is part of the knowledge of decorating contemporary living spaces.

This paper is proposed to present issues regarding the use and combination of different plant species (flowers, shrubs) in window boxes. A southern exposition 6 m² terrace was arranged with permanent plant compositions, each one separately being specific to its season. An economic calculation was made for the costs of setting up the whole decorative design.

Key words

flowering species, sunny exposition, window box

Arrangement of East balconies and terraces with permanent floral compositions (II)

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Abstract - Although over time, tastes and demands to decorative plants and their layout changed like fashion clothing, growers from countries with tradition in floriculture have always remembered some dedicated species for pots and containers, for patios and balconies. The biggest advantage of small – flowering or dendrological – plants for terraces and balconies, lies in their ability to bring nature into the urban landscape, which is usually very limited.

In this paper it is proposed a permanent arrangement of a 10 m² terrace on Eastern side, using flower species compositions suitable for this orientation and seasonal specific alternatives. In this work it was done also an economic calculation of the setting up cost for these planters.

Key words:

dendro-flowering species, semi-shade, containers

Fir growth variability on an altitudinal gradient in northeastern Romania

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Abstract The variability of annual tree ring size for fir (*Abies alba* Mill.) was analyzed the importance of altitude and slope exposition on tree growth. The area covered was the North – Eastern part of Romania, between 46 degrees northern latitude and 48 degrees northern latitude and 25 degrees eastern longitude and 26 degrees eastern longitude. 36 stands of the National Forestry Inventory were studied from which 422 growth samples were taken. These were processed and measured. The measurements make up the growth curves which were then standardized. Growth curves were elaborated and were analyzed in terms of altitude, slope exposition and latitude. At lower altitudes, fir achieved the highest growths, at middle altitude, trees achieved average growth, and at high altitudes, trees achieved the lowest growth. This underlines once again the importance of temperature on tree growth. Analysis of the spatial variation of the series analyzed according to altitude caused the formation of two groups. The first group consists of series growing at high altitudes (1000 m and 1100 m) and 500 m altitude series. The second group consists of intermediate altitude, starting with 600 m and ending with 900 m. The explanation for the spatial distribution of the series is due to the environmental conditions in which the series formed. At extreme altitudes, the fir is subject to limiting environmental factors, mainly temperature and humidity. The growth series from middle altitudes are formed in normal growth condition. The studied classes of altitude (600 m, 700 m, 800 m, 1000 m), in terms of exposition, led to the same result: the growth curves from the northern exposition have a lower variability than the growth curves from the southern exposition. On northern exposition, the fir is supplied with a more suitable light and water regime, in contrast with the southern exposition where the variation of these factors have a great influence on growth. Principal components analysis was done for the two groups previously set from altitude. In the second group, we can see a clear separation between northern and southern exposition. The southern exposition has the negative values of the second axis, and the northern exposition has the positive values on the second axis. The cluster analysis grouped the analyzed series by the geographical position of each series.

Key words

fir, variability, radial growth, altitudinal gradient, exposition, growth curves

Variability of growth series statistical parameters in northeastern Romania

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Abstract Variability of growth series statistical parameters was analyzed for three species: fir, beech and spruce. The stands from which the species have been studied are located in northeastern Romania. The covered area was between 45 degrees northern latitude and 48 degrees northern latitude and 25 degrees eastern longitude and 28 degrees eastern longitude. For fir, 36 stands were analyzed from which 422 samples were taken. For beech, 52 stands were analyzed from which 580 samples have been taken. For spruce, 102 stands were analyzed from which 1253 samples have been taken. The stands are part of the National Forest Inventory. The samples were processed, measured and for each stand a growth series was calculated.

Correlation study showed that, at the extremes of altitudinal range, approximately equal to the limits of the natural area of distribution of the studied species, the correlation between the growth of trees is higher. The fir has a high correlation between the trees in the stands in four points. They are located at low elevations, 600 -700 m, in the center of Suceava and western half of Neamt county. Correlation study on beech showed that this is quite low in large areas of the study area. The highest values are found in the eastern half of Suceava county. The highest correlation values are found in stands with spruce located at high altitudes in mountain areas of Suceava and Neamt.

The fir has the highest radial growth in the studied area. The average size of all stands annual ring is 2.68 mm. The average size of annual ring for all stands with spruce is 2.58 mm. Beech has the lowest average radial growth of all stands - 2.08 mm.

The standard deviation is related to the size of the annual ring. The natural tendency is to achieve smaller variations at low altitudes, higher variations at average altitudes and lower variation of the annual ring at high altitudes. Higher variations are recorded at fir, smaller at beech and average at spruce. Autocorrelation has lower values of coniferous species studied, these species maintain the growth momentum of the previous year more than beech. The study of the autocorrelation related to the altitude varies from species to species.

Average sensitivity to climatic factors has the lowest value for spruce: 0,181. Spruce is the least demanding studied species to environmental conditions. The highest average sensitivity is determined for beech with a value of 0.291. Fir falls in the middle with an average sensitivity of 0.215. Both fir and beech are demanding species to environmental conditions.

Key words

fir, spruce, beech, variability, radial growth, altitudinal gradient, growth curves

Morpho-anatomical differentiation relating to annual growth at standard and columnar type apple genotypes

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Abstract At the University of Craiova (SCDP Valcea) a program for apple breeding program has been initiated since 2007, in order to obtain genotypes of columnar or standard type, productive, with superior quality of fruits and resistance to scab.

The 12 elite obtained are distinguished by their agro-biological, morphological and anatomical characteristics. The columnar genotypes are different from the standard ones by the growth mode of the annual branches, by the ratio between the wood and bark from these, by the distance between buds and branches diameter under the terminal bud. Differences are recorded between the two groups of genotypes in terms of their anatomical structure (size of wood vessels, of liber ones, size of medullary rays, etc).

There is a high variability regarding the morpho-anatomical characteristics studied within the same group genotypes, be it columnar, or standard, due to the phenomenon of heterozygosity (different sexual combinations).

Key words

Anatomic structure,
genotypes, morphological
structure

GIS-based assessment of fire risk in National Park Domogled-Cerna Valley

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Abstract Forrest and grassland wildfire is the main natural hazard in National Park Domogled - Cerna Valley . The number and the intensity of wildfires in this area have dangerously increased in the past decades. The aim of this study is to map and assest the fire ignition risk based on an hybrid index IRI (ignition risk index). The model combines geospatial data and GIS technology to construct the fire risk index. The following variables were derived for the study area: vegetation moisture, slope, aspect, elevation, distance from roads and vicinity of settlements. These variables are weighted based on their impact on the fire ignition risk using multi-criteria evaluation. Based on the obtained index values three risk zones were classified: low, medium and high risk. The resulted map zones were compared with past wildfire areas. The map can allow the park administrator a better organization in preventing and extinguishing fires.

Key words

fire risk, fire ignition, GIS,
National Park Domogle-
Cerna Valley

The monitoring and evaluation of *Gladiolus* genitors for the Romanian breeding programme

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Abstract *Gladiolus hybridus* is one of the most popular ornamental geophyte cultivated in Romania both for cut flowers and as well for landscape design. Along with obtaining valuable hybrids with a good transmission capacity of morphological and decorative characteristics to descendents, it occurs the question of corms conservation, so that they can be used widely in culture. In this research experiment was developed an intensive work for introducing new *Gladiolus* cultivars obtained by exchanges from abroad universities or institutes for enriching the germplasm resources. The germplasm evaluation is necessary for developing future flower crops and to applying new breeding programs. Based on the results, 35% of the analysed cultivars are vigorous, cultivar 'Blue Isle' meets most popular features in terms of cut flower quality, 42% of the varieties have the highest decorative value and a good transmission capacity of morphological characters to descendents.

Key words

gladioli, cultivars, morphological characteristics, corms

Behavioral study to climate change on peach varieties cultivated on the sand area of Oltenia

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Abstract This paper has proposed to analyse the reaction of the peach tree (*Prunus persica* [L.] Batsch) to climatic changes that have been registered in the sandy area from the south of Oltenia.

The climatic parameters studied have referred to the values from the active vegetation period of the peach tree and have been pointed to the practical thermic balance and the amount of precipitation. There have also been accomplished studies concerning the agreeability of area for the cultivation of peach tree, multicriteria climatic analysis and the pedological study. The main types of peach trees that have been taken to study are Redhaven, Harvester, The Splendid of autumn, Harbinger, Splendid Springold, Goldcrest, Harken.

From the phenology point of view, the main reaction to these changes of environment is the increasing of season length of vegetation, an early activation of spring phenophases, a delay of those of autumn. The climatic changes made their appearance in the sandy area from the south of Oltenia through the increasing of frequency of torrid days, the appearance of aridity phenomenon, phenological changes to fruit growing plants.

Because of the fact that climatic elements realized on the sandy earths of Oltenia are adjacent and even superior through the main areas of cultivation of peach tree from the country, it can be appreciated that this area, through the early that impresses to the ripening of fruits, represents a favourable area for the cultivation of peach trees with superior quality fruits, not only for the fresh consumption but also for export.

Key words

Prunus persica (L.) Batsch, phenology, climatic factors, environmental conditions, effects of climate change

The role of Tree-of-Heaven in Forest Land Reclamation: A Brief Review

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Abstract The paper presents a brief literature review regarding the uses of *Ailanthus altissima* (Mill.) Swingle. Ecological requirements and biological characteristics of this species were also presented. Special attention was given to the role of tree-of-Heaven in land reclamation. It was concluded that this species could represent a good solution for establishment of new forest lands, especially in dry and poor sites. In this context, few recommendations were done.

Key words

tree-of-Heaven, *Ailanthus altissima*, forest land reclamation

Growth of some nectarine varieties depending on the canopy shape

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Abstract The purpose of this paper is to highlight the growth of some nectarine varieties with early maturity (Cora, Delta, Romamer 2 Crimsongold) depending on the shape of the tree crown. The research was conducted over a period of four years at Research Station for Fruit Growing Constanta, in an experimental plot planted in spring 2002. We have studied four varieties of nectarine, 3 Romanian varieties created and homologated by the RSFG Constanta (Cora, Delta and Romamer 2) and a foreign variety of America (Crimsongold). Determinations were related to: the tree trunk cross-sectional area and vigor expressed as annual average growth in height. Following the studies, the results of investigations found that trees had different growth, depending on the variety and shape of crown.

Key words

Prunus persica var. Nectarine, force, tehnological sequences

Research regarding influence of organic fertilization on the physiological processes intensity in watermelon plants

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Abstract Research regarding influence of organic fertilization on the physiological processes intensity were performed on watermelons plants (*Citrullus lanatus* Thunb. Matsum. & Nakai) - *Rica* F1 hybrid, cultivated on sandy soil, in field conditions, at the CCDCPN, Dăbuleni, Dolj.

This paper presents the results of the physiological research in watermelon plants - the *Rica* F1 hybrid obtained by applying the fertilization with Manure, Maxiroot and Zeolitic Tuff, in different doses of application. The intensity of photosynthesis, on during the day, shows the highest values at noon (12 a.m.) for watermelon plants fertilized with 30 t/ha Manure+Maxiroot+Zeolitic Tuff and the lowest values in the morning (8 a.m.) for plants fertilized with with 30 t/ha Manure+Maxiroot. The intensity of transpiration present the highest values at noon (12 a.m.) for watermelon plants fertilized with fertilization with 60 t/ha Manure+Maxiroot+Zeolitic Tuff and the lowest values in the morning (8 a.m.) for the plants fertilized with 30 t/ha Manure+Maxiroot. The watermelon plants have the highest chlorophyll content in mature leaves fertilized with 60 t/ha Manure+Maxiroot and the lowest chlorophyll content in young leaves fertilized with 30 t/ha Manure+Maxiroot.

Key words

fertilization, photosynthesis, transpiration, watermelon plants

Physiological research in *Citrullus lanatus* (Thunb.) Matsum. & Nakai plants cultivated on sandy soils organic fertilized

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Abstract Physiological research regarding influence of organic fertilization on sandy soils were performed on watermelons plants (*Citrullus lanatus* Thunb. Matsum. & Nakai) cultivated on the area Dabuleni, Dolj.

This paper presents the results of the physiological research in watermelon plants - the *Rica* F1 cultivated on sandy soils, in different variants of fertilization.

The intensity of photosynthesis at lunch shows higher values in plants fertilized with 4 t/ha Orgevit + Maxiroot (21.79 $\mu\text{mol CO}_2/\text{m}^2/\text{s}$) and lower values at the plants fertilized with 2 t/ha Orgevit + Maxiroot + Zeolitic Tuff (12.42 $\mu\text{mol CO}_2/\text{m}^2/\text{s}$). The intensity of transpiration at lunch shows higher values in plants fertilized with 4 t/ha Orgevit+ Maxiroot+Zeolitic Tuff (7.36 $\text{mmol H}_2\text{O}/\text{m}^2/\text{s}$) and lower values at the plants fertilized with 2 t/ha Orgevit+ Maxiroot+Zeolitic Tuff (5.93 $\text{mmol H}_2\text{O}/\text{m}^2/\text{s}$). The watermelon plants have the highest chlorophyll content in mature leaves fertilized with 4 t/ha Orgevit + Maxiroot and the lowest chlorophyll content in young leaves fertilized with 2 t/ha Orgevit + Maxiroot.

Key words

fertilization, photosynthesis, transpiration, watermelon plants

Influence of grazing on the forest soil in Production Unit IX Dognecea, Bocșa Română Forest District, Reșița Forestry Directorate

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Abstract Grazing in the forest causes prejudices to the seedlings and physical and physico-chemical modifications of the soils.

In this paper, as a first step, a statistical analysis was done of the number of seedlings injured by species, together with observations on the types of injuries suffered.

In order to analyze the effects of grazing on the forest soil, samples were taken and analyzed from two experimental surfaces. Three variants were settled, for comparison purposes: high traffic paths (V1), moderate traffic paths (V2) and space between paths (V3, control variant).

From each variant, soil samples were taken from two soil horizons (0 – 5 cm and 5 – 15cm), being known that in the first 15-20 cm the most intense activity in the forest soil is going on, that this is the most rich in humus horizon, loose and porous. The effects of grazing on physical and physico-chemical properties of soils were analyzed and compared, with special mention on soil compaction, which leads to the degradation of the physical characteristics, the destruction of the structure, porosity, aeration and water infiltration capacity.

Key words

grazing, high traffic path, soil compaction

Negative effects of grazing on the natural seedlings layer from the forests of Dognecei Mountains, Romania

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Abstract Grazing in the forest severely injures the seedlings layer formed by natural regeneration, by biting leaves, buds and young shoots, but also by stepping on the young trees, breaking the branches and the stems and damaging their bark. These injuries have major repercussions on the new stand that is developing, both quantitatively and qualitatively.

In order to analyze the damage induced by grazing on the natural seedlings layer, experimental blocks were placed in the forest and inventories and qualitative describing were performed, after which the percentages of seedlings' injury by species and the sorts of injuries resulted.

The second part of the paper shows, after the measurements and the statistical analysis of the data, conclusions about the increment and development of the grazed seedlings compared to the unaffected seedlings.

Key words

grazed seedlings; quadratic value; seedlings' injuries

Study of selection indexes for some resistance traits in a winter oats (*Avena sativa*) genotype collection

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Abstract In winter oats cultivation, winter hardiness is a limitative factor for cultivation in some areas. Another issue is lodging, both of these two problems limiting productivity. The objective of this study was to determine the breeding potential of some winter oats genotypes for these resistance traits by calculating the multiple selection index. Selection indices show that winter hardiness and lodging are strongly dependent on specific climatic conditions, so genotypes which stand out are different each year. Sensitive genotypes are more stable. The single cultivar which is in the category of resistant genotypes is Earlygrain. The genotypes which were strongly affected by overwintering and lodging conditions are Walken and Marys Quest.

Key words

winter oats, selection index, winter hardiness, resistance to lodging

Studies regarding the variability of daffodils population (*Narcissus stellaris* L.) from „Meadows with daffodils of Zervești”

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Abstract The aim of these studies is to evaluate the variability of species *Narcissus stellaris* within the protected area of „Meadows with daffodils of Zervești”, in Caraș-Severin county. In our country there are many meadows with daffodils. The existence of variability maintain a natural population within the area. The studied population presented a medium to high variability for the features analysed which ensures its maintainance in the area without the need for protective measures where the natural conditions are constant and destructive human activities are not taken. Correlation between the features analysed in daffodils population, proves the existence of fairly strong relationship between the number of leaves of a plant and the perigonal tube length, between length and width of leaf, between the corolla and coronule, even with the length of external tepal.

Key words

Narcissus stellaris, variability, corelations

Regarding on fertilization of vineyards in two years after planting on the sandy soils from Southern Oltenia

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Abstract For the fertilization vineyard in the second year of the planting is sufficient dose N 33 P 33 K33. This dose was instrumental in achieving a growth rate of 2.90 cm/offshoot/day. The lowest rate of growth of shoots was registered in the fertilized with N66 P33 K33 (cm/offshoot/day).

Annual increases in total length has exceeded the value of 1200 cm/vine in all variations, so that higher doses of P33 N33 K33 is not justified from the economic point of view. I opted for this dose because it has all three macroelements, for a complete nutrition, because otherwise it was sufficient and the dosage of N 33.

Exchangeable potassium content was between 40 ppm in the fertilized with P33 K33 N33 and 140 ppm in fertilized with N33 P33 K33. The values obtained to characterize the soil with a low to medium supply.

The plant has been harvested samples of leaves, from which the laboratory was determined the contents of macroelements (N, P, K).

Key words

vineyards, sandy soils, fertilization

Definitions and structural attributes of the ecosystems from natural forests – short review

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Abstract The most complex ecosystems, both by functional point of view and by complexity and the information offered, are the ecosystems found in the forests having a high degree of naturalness, the so-called „virgin forests”. These could be considered as true guides of sustainable management of the production forests. The first studies and research in the virgin forests of Europe were concentrated on the description of their structure. In all these early studies, the main objectives were to enrich the knowledge regarding the original structure of the natural forests. In the international literature, a large variety of attributes is used in order to characterise the structure of these forests.

Key words

Natural forests, structure, definitions

Renaturation of tailing dumps – short review

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Abstract The restoration of the lands occupied by tailing dumps is a complex process that takes place over time, depending on the conditions provided in the field by previous actions of land stabilization, afforestation. The evaluation of renaturation is very important by the fact that it will result in an assessment of biodiversity in dumps areas, at the overground level, the layer of grasses, shrubs and trees and the underground level and where appropriate, at the aquatic level. This short review aims to present in terms of dimensional and by categories, the areas occupied by tailing dumps and the main results of the research on tailing dumps in our country. This research aimed renaturation of the dumps areas, by analyzing the development of various forest species and grasses, the microbiological characteristics of soil from the tailing dumps covered with vegetation and aquatic ecosystems installed in lakes or puddles formed in its contents between the tailing dumps.

Key words

renaturation, stabilization, tailing dumps, Moldova Noua

Research on amount and contents of litter on the plantation from the tailing dumps from Moldova Nouă

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Abstract Plantations performed on the tailing dumps from Moldova Noua, encircling today tailings dumps, successfully exerting their ecoprotective role, fighting against wind erosion and improving the soil. This paper aims to present the research in existing plantations on tailing dumps from Moldova Noua in order to determine the amount of litter component: leaves and herbaceous plants, small deadwood, fruits and seeds, humus and difficult to determine material with humus and sterile. Also was studied the influence of the stands characteristics for litter forming here and the link between this characteristics and the quantities of litter components.

Key words

litter, tailing dumps

The Bitter melon callus growth (*Momordica charantia* L.) in different *in vitro* systems

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Abstract The selection of plant tissues with a good capacity of cells multiplication is necessary to obtain the important secondary metabolists by *in vitro* cellular biosynthesis. The aim of our researches is to select some tissue lines with a good proliferation capacity, to obtain an important cell biomass at bitter melon. We use two *in vitro* culture systems, liquid and solid culture medium, with various hormonal balances and explants. Cotyledonary callus manifest the better capacity of growth on 1,5 mg/l ANA + 1 mg/l BAP hormonal balance in MS solid medium.

Key words

bitter melon, callus, liquid and solid culture medium

Distribution of *Fusarium* species in Timis County (Western Romania) in relation with environmental conditions

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Abstract Different *Fusarium* species are associated with fusarium head blight (FHB), a disease complex of wheat, maize, barley and another cereal. There are major differences among *Fusarium* species in their ability to cause disease, to produce mycotoxins and to spread in different environmental conditions. Most of the species can be found in much of the geographical area affected by FHB, but individual species usually dominate a specific region and *F. graminearum* dominates in most regions. The current study has been performed to find a relation between climatic condition from Timis County and the prevalence of specific *Fusarium* species, all collected data having useful implications in the development of climatic models. *Fusarium graminearum* is the dominant species (75%) in Timis County.

Key words

Fusarium graminearum, climatic conditions, Timis County

Grape pomace as fertilizer

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Abstract Grape pomace is a product for which winemakers and scientists have tried to find an effective recycling and disposal method. Disposal of this solid waste will become more difficult as the growth of the wine industry continues. Grape pomace is a heterogeneous mixture of seeds, skins, and pulp, and usually also the stalks for red wines grape varieties. Grape pomace cannot be added directly back to the vineyards because of potential of pathogens and it cannot be incorporated into the soil without damaging the roots of the vines. To transform grape pomace in a valuable fertilizer must be composted. Grape pomace for the experiment was obtained from a private farm of Paulian village, Arad. Fresh grape waste from the local wine variety Negru Batut de Rosia, was prepared to undergo an aerobic bioprocess (composting). Temperature and moisture were measured periodically in each pile and monitored throughout the 6 months period of compost preparation. Registered moisture was in favorable range (19.3 -37.3%) to obtain finally a compost of high quality. The vineyard of Otonel variety composted had better phenological parameters, suffered less from drought, and resist better to disease. Grape yield does not registered differences in the first year after the compost applying and grapevine makes relatively little difference regarding the quality of the must or wine obtained from these grapes.

Key words

compost, grape pomace, piles, temperature, moisture, fertilizer

Grape pomace in sheep and dairy cows feeding

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Abstract The grape is one of the most valued conventional fruits worldwide and winemaking is a large industry in many regions of Romania and all over the world. The major waste form wineries are pomace and marc. Even tremendous quantities results each year few studies on the feeding value of grape pomace have been conducted, because has a high fiber content and lower feed value than other fruit-wine pomaces. The objectives of this study was to examine the effects of grape pomace on milk yield and milk composition in dairy cattle and the evolution of weight gain and body mass in Tsigai lambs at the end of the 90 days of fattening. The group of lambs that had the highest body weight was L₁ (28.37 kg), to which was experimentally administered 100 g/day grape pomace (GP). Addition of grape pomace resulted in a very small increase in milk yield in dairy cows. The viticulture grape pomace can be recycled to add value to ruminants feed rations, otherwise being a wasted product.

Key words

dairy cows, grape pomace, feeding, lambs, milk, weight

Contribution of foliar fertilization and calcium supplement in achieving apple production

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Abstract In the context of the guidelines for sustainable exploitation of fruit plantations, to ensure the quality of production, efficiently economically and for reducing the risk of environmental pollution by the use of fertilizers, these studies have investigated the possibility of apple tree production directing by foliar fertilization. Biological material studied was the Generos cultivar. The tested fertilizers were represented by Uwafol, Waterfert, Biocomplex900 and Megafol, each associated with Foliarel and alternating with Calcio plus. From the combination of them resulted eight fertilized variants alongside a control variant, arranged in three repetitions. Apple production has recorded variations as well depending by experimental variants and also according to environmental conditions, especially the climatic ones which fluctuated during the experimental period. The level of production was between 35.2 kg/tree from control variant (G_0) and 42.2*** kg/tree at the variant G_7 in 2011 and 31.7 kg/tree from version control (G_0) respectively 36.3*** kg/tree at variant G_3 in 2012. Additional intake of calcium was obvious amid the hydric and temperature stress that have been more pronounced in 2012. Analysis of experimental data by various statistical and mathematical tools (spatial interpolation analysis, MANOVA/CVA) facilitated orientation and grouping of experimental data depending on the affinity of the variant for generating of the results, the calcium being an element of results differentiation. Experimental results showed high statistical certainty, according to ANOVA statistical analysis, $p \ll 0.01$, $F_{\text{calculated}} \gg F_{\text{theoretical}}$ for Alfa = 0.05.

Key words

apple, foliar fertilization, calcium, yield

The behavior of some peach tree varieties belonging to the world collections concerning growing and fructifications

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Abstract Peach represent one the most appreciated fruit tree specie of the temperate climate, which in the last time has benefited of a special attention, fact that has led to the expansion of cultivated areas with varieties and to diversification of the assortment. Researches carried out in USA, Canada, France, Italy, even in our country had led to obtained a large number of varieties with remarkable agro-productive characteristics. In the present work were studied ten varieties of peach belonging to the Peach and Nectarine World Collections introduced and multiplied in Romania by Acad. Dr. Vasile Cociu. The varieties studied originating from all continents has

Key words

peach, World Collections number and length of short, medium and long formations

been planted in Timișoara in 2007 year, with the purpose of being tested in culture and naturalizing in Romania of some new foreign varieties. In this paper, we presented the partial results concerning growth and differentiate of generative and vegetative organs, respectively number and length of short, medium and long formations. The varieties followed were: Eureka, Gold Dust, Sun Hun Hui, Churko, Earlyred, Elbertina, Tebana, Giala di Roma Tardiva, Tokinostate and that witness experiment was choice Jerseyland variety.

Research concerning the behaviour of some local apple tree varieties in the Caransebeș Village

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Abstract In many fruit-tree growing areas the native varieties and those belonging to the old assortment were maintained in a great proportion because of their vigor and productivity, resistance to pests and diseases, a long holding period and, last but not least, because some areas of the country were not collectivized and each grower cultivated traditional varieties. The main selection objectives in apple variety improvement process were: tree resistance to frost and drought, resistance to pests and diseases, constant productivity from one year to another, aspect, taste, sugar and vitamin C content. So, the varieties and the local biotypes, which have some important features, were considered an important germoplasm source, being observed by researchers and other growers. The Caransebeș area is very favorable for apple tree culture because here were maintained many varieties and local biotypes. In this paper there are presented partial results concerning some studied aspects: the fruits biometry and the fruit production tree in conditions of the research year 2013.

Key words

apple, old varieties, local biotype, biometry

Research concerning the influence of tillage on soil moisture (%) and soil water supply (m³/ha) in grain maize in the Banat's plain

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Abstract Water as a vegetation factor is nowadays an issue of main importance that deserves to be analysed from all the points of view. Assessing and prognosticating soil water supply allows permanent knowledge of the degree of water supply for the crops and the choice of the cultivation technologies in agreement with the degree of favourability of agrometeorological conditions. Soil water balance is represented by two groups of elements: on the one hand, soil water resources and, on the other hand,

Key words

water, soil, apparent density, water supply, soil works

productive and reproductive water consumption as well as the soil water supply at the beginning and end of the period analysed. Soil moisture and, implicitly, soil water reserve influence directly the level of productions. At Lovrin (Timiș County, Romania), apparent density oscillates between 1.68 g/cm³ in the horizon 0-10 cm and 1.49 g/cm³ in the horizon 40-50 cm, with maximum moisture 23.30% in the horizon 20-30 cm and a water reserve of 247.60 m³/ha. At Beba Veche (Timiș County, Romania), apparent density is 1.57 g/cm³ at the soil surface and 1.71 g/cm³ in the horizon 40-50 cm; soil moisture is 18.83% at the surface of the soil and there is a water reserve of 295.63 m³/ha in the horizon 0-10 cm. Apparent density at Teremia Mare (Timiș County, Romania) has the highest values – above 1.90 g/cm³; soil moisture in the first 10 cm is 20.25% with a water reserve of 372.60 m³/ha. At Comloșu Mic (Timiș County, Romania), apparent density is 1.63 g/cm³ at the surface of the soil, with a soil moisture of 20.45% and a water reserve in the first 10 cm of 333.34 m³/ha.

The diversity of the landscape and the morfostructural types of settlements in the district of Râu de Mori

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Abstract The performed study evidentiates the influence of the natural landscape over the morphostructural types of settlements from the Râu de Mori district. It is known the fact that it is the largest district from the Hunedoara county and it has a surface of 38 782 ha and it is the only one that has in its structure four mountain massifs (Retezat, Piule-Iorgovanu, Țarcu și Godeanu), three major units of the relief and also the first National Park from the country (Retezat). Also, there are presented the biodiversity elements from the territory of this beautiful district from the Carpathians.

Key words

landscape, morphostructural types, biodiversity

Historical monuments, cultural edifices and medieval architecture - the cultural touristic potential for the village Râu de Mori

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Abstract The rural district of Râu de Mori represents a social, objective, historical and cultural reality that is specific to the area and it has important local values that are not very known today. This study evidentiates the historical, cultural and traditional values of the rural district Râu de Mori in order to promote the tourism in this area. There are presented and analysed the medieval historical monuments, the cultural edifices and the traditional architecture of the houses from the district.

Key words

cultural edifices, traditional architecture, cultural touristic potential

Green Fertilizers- Fertilization Alternative for an Ecological Viticulture

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Abstract The sustainable agriculture, the present global strategy of agricultural development, implies healthy ecological and economically attractive practices. The biological fixation of nitrogen is a technology that meets both requests, offering means of costs and energetic impurities reduction. Several researches noticed the presence or abundance of different groups of nitrogen fixing microorganisms in the most varied environment conditions. The energetic contribution of the microorganisms from soil using green fertilizers or nitrogen fixing species situated at 813kwh/ha equivalent of 47.5 kg of nitrogen/ha.

Key words

sustainable agriculture, biological fixation, energetic contribution

Supervision of the population of *Lobesia botrana* DEN. ET. SCHIFF (the green moth of the grape) using pheromone traps

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Abstract Insects are highly dependent on the information that send and receive through chemical messages, are circulating in the ecosystem, nominated economy or telergoni. Through the affiliation of the partners who communicate, economy the subject of our research are pheromones, economy who watch the relationship between intraspecific messages, relating to this species.

Key words

Ecosystems, Pheromones, Economy, Pheromone Traps

The study took place in the Base of Research and Development for Viticulture and Winemaking Miniş, during the period 2010-2012 ,researches were conducted regarding the use pheromone traps for the supervision of the green moth of the grape population - *Lobesia boreana* DEN. ET. SCHIFF.

Preliminary researches referring to the variability of the species *Chondrostoma nasus* in the rivers Timiș and Bega

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Abstract *Chondrostoma nasus* is a representative species for the rivers Timiș and Bega, it is one of the few species that is adapted in these lightly polluted waters, and it is feeding with the periphyton that is abundant in these waters.

The nase (*Chondrostoma nasus*) belongs to reophilic fish species, whose population in the wild water was reduced in the last few decades because of the dam building, flow fragmentation, loss of suitable gravel substratum, organic strain etc. in many European countries. This population has been extinct or badly devastated in Czech Republic. For that reason the nase is classified as an endangered species in the Czech Republic [6].

In Romania, there were made no researches about the species *Chondrostoma nasus* and about the impact of the dam building, flow fragmentation, pollution and other antropic activities have upon the species, especially through the blocking of the migration routes in the period of the reproduction.

The researches that were made are a part of a larger study regarding the variability of the species *Chondrostoma nasus* in the rivers Timiș and Bega and it has as an objective the identification of some elements of morphological and genetic variability of the species *Chondrostoma nasus* in the researched area and also the determination of some existing correlations between the morphological and genetic variability of *Chondrostoma nasus* - the identification of some potential morphological or genetic markers.

The first results that were obtained led to the establishment of an adequate working methodology for the wanted purpose and it presents the biometric characters of the species *Chondrostoma nasus* that are going to be studied as element of morphological variability and they also led to choosing the adequate molecular analysis for the identification of some potential genetic markers of the species.

Key words

Chondrostoma nasus,
biometric measures, ISSR
markers analysis method,
genetic variability,
morphological variability

The monitoring of lipoxigenase on flour used for manufacturing of pasta products

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Abstract This study presents the enzyme activity of lipoxigenase on flour obtained from *Triticum durum* wheat used for manufacturing of pasta products. The determination of the rheological characteristics of the flour and

Key words

lipoxigenase, wheat, flour,

dough is obtained by consistographic method. The tests results show that the addition of lipoxygenase decreases the time of kneading the dough. On the dough sample from flour obtained from *Triticum durum* wheat it can be seen that the enzyme preparation based on lipoxygenase is used to obtain pasta products with improved color and gloss and is also used to reduce the drying time of noodles, improves surface appearance and mechanical stability of noodles and pasta, and reduces raw material costs. The dough sample show also an improvement by increasing of the time at which it reaches the maximum pressure and also in the tolerance and stability of the dough.

pasta,
method

consistographic

The consistographic determinations of different types of amylase on the bread dough

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Abstract This study presents the action of α , β and γ amylase on bread dough. The determination of the rheological characteristics of the dough is obtained by consistographic 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, α -amylase, β -amylase, γ -amylase, consistograph method

Amino acid compozition of some common bean landraces from Caraş-Severin county, of Romania

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Abstract The aim of this study was to collect some common bean landraces from unexplored areas. Seven common bean landraces were collected in August 2010 from three vilages of Banat area, situaed in the Vest side of Romania. The vilages from which colletions were made are: Goruia, Soceni and Cornuţel-Banat. These landraces were analyzed for total aminoacid content using HPLC Dionex 3000 the amino acid analyzer. Thirteen amino acids were identified. The results obtained in this study can be useful to scientists wishing to improve the ptoein content in common beans.

Key words

common bean, landraces, HPLC, essential amino acids.

Germinative response of some common bean landraces from Banat region of Romania

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Abstract Common beans (*Phaseolus vulgaris* L.) are usually harvested and stored as seed. When this crop is tested agronomically, or included in breeding programs, the distinction and identity of samples need to be established prior to agronomic evaluation and breeding. Common bean landraces are an important component of cropping system of the Romanian small-scale farmers. We have studied seven common bean landraces (*Phaseolus vulgaris* L.) from Banat's area in order to observe their germinative response. The experimental results showed the existence of some bean genotypes with a good germinative response Soceni-S6, Soceni-S9, Cornuțel-Banat-CB4.

Key words

Common bean, seed germination, landraces

The Effect of the Topographical Scale upon the Morphometric Parameters of Torrential Watersheds

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Abstract Accurate assessment on the morphometry of a torrential watershed is essential for estimating the concentration period and, eventually, the peak floods in a watershed. Because, in many situations, where appropriate digital models lack, the measurements are to be done on regular maps with contour lines the study was focused on finding out the effect brought about by the map scale on the magnitude of morphometric parameters.

Key words

The measurements were carried out on the same watershed represented onto three different maps with contour lines corresponding to the three standard scales 1:5000, 1:25000 and 1:50000. Within the small Branistea watershed, stretching over 2175 hectares, as many as 12 sub-basins have been identified and all parameters were estimated for each sub-basin, in order to derive a meaningful set of data, taking into account sub-basins larger than 25 hectares. After digitization and data processing for the whole basin and each sub-basin three different sets of morphometric parameters were produced and the expitistical analyses carried out have proved that, for some morphometric features, some corrections are to be applied to a set of morphometric parameters, when measurements are to be done on small-scale maps, like 1:25000 and 1:50000, for sections not covered by 1:5000 maps.

Dynamics of hydrological parameters in a small torrential basin covered with full-stocked forests

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Abstract The paper is focused on how the ever-changing structure of the forest canopy alters the hydrological parameters of a small torrential basin, where heavy rains may occur suddenly without being recorded at meteorological stations, as happened in 1991 and 1993 with Paraul Negru watershed, where this study was carried out. The study consists in calculating the average annual load at the very beginning of five decades, from 1956 to 2006, based on the forest stand description, provided by the forest management plans, and the terrain features, plugged into a CAD system, where all important morphological features were estimated.

Key words