

Global Warming and Its Impact on Environment

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Abstract Global warming is the observed and projected increase in the average temperature of earth's atmosphere and oceans. The earth's average global temperature has increased by 0.6°C in the last 140 years. Fine dust or aerosol particles floating high in the atmosphere can alter the heat balance of the earth by reflecting away the incoming solar heat, thereby making the surface cooler and by reflecting the escaping heat down towards the surface making it warmer. The balance of these two effects depends on the nature of the dust, season and time of the day for example a dust layer may tend to make the summer cooler and the winter warmer. The atmosphere is substantially influenced by the action of UV-radiation in ozone and water vapour. The main causes of global warming are greenhouse gases, power plants, population explosion, deforestation, transport sector and wet land destruction. Global warming has effects and consequences on all walks of life. The consequences of global warming can be seen in the atmospheric weather, local climate change, glacier retreat and disappearance, oceans, sea level rise, acidification, forest fires, ozone depletion, agriculture, water scarcity as well as the health of individuals. An increase of 2°C in temperature could decrease the rice yield by about 0.75 t/ha and 0.5°C increase in winter temperature reduce wheat yield 0.45 t/ha. Results have showed that about 7.4, 8.7 and 9.8 per cent of total cumulative CO₂, SO₂ and NO₂ emission respectively could be avoided between 1997 and 2015 by using efficient appliances.

Key words

Environment, Green House gases, Global warming and Pollution

The Impact of the Agricultural Technology upon the Biodiversity of the Arthropods Present in the Corn Culture in Sibiu County

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Abstract In Romania as well as worldwide the creation of a lasting agriculture should take into consideration the ecologic component and the prerogatives of the protection of the customers. This fact is necessary because there are, presently serious processes of deterioration of the fertile properties of the soil as a result of an irrational agriculture that doesn't take into account the rotation of the cultures, the fertilization, the control of weeds, illnesses and pests and the reduction of energetic consumes. The goal of our researches was the establishing of the degree of the impact of the agricultural

Key words

culture technologies, corn, fauna

technologies applied upon the biodiversity of the arthropods present in the corn cultures in three localities in Sibiu County: Poplaca, Ocna Sibiu and Axente Sever (Copşa Mică area). There were used two methods of collecting for the arthropods in the researched areas: the drillings in the soil and the Barber traps. In the same time for the chemical and agrochemical bulletins there were collected in March soil samples from the three agro systems with the help of the agrochemical drills. For each and every agro ecosystem there was analyzed the fauna in the soil and on the ground, making connections with the applied agricultural technology. There was established for all three corn agro ecosystems the fact that the report between the useful and pest fauna is in favor for the former category.

Silvo tourism, eco tourism, durable tourism

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Abstract This paper presents the history and practicing of silvo tourism in Sibiu county. Also, there are described the concept of silvo tourism, like as in literature. The paper presented the situation of silvo tourism practice (tourist structures, events, activities) in the forests managed by Forestry Miercurea Sibiului, Sibiu county.

The study presents the silvotourism and the ecotourism as a part of the sustainable tourism, setting the strong and the weak points of the romanian ecotourism, off.

State of research It is carried a SWOT analysis out, resulting the elements which may transform the romanian ecotourism market in a reference market for the tourists. There is The Ecotourism Association Romania, the one which elaborated the basic principles of the present and future ecotourism. Protection and conservation of tourism potential and the environment is emerging as a distinct activity, with specific problems that require collaboration of specialists in various fields.

Lately was adopted also in the tourism industry the concept of "sustainable development", already used in other sectors. For tourism, this concept was set out by IUCN thus:

There are three major principles of sustainable development: - ecological sustainability, the insured incurred in maintaining the development of all essential ecological processes, especially the diversity of biological resources; - social and cultural sustainability, which guarantees a favorable economic development members of society, culture and values compatible with the existing culture and civilization, the preservation of community identities; - economic sustainability, having role in ensuring effective economic development, resources are managed so that there and in the future.

Key words

silvo tourism,
ecosanogenesis, forest,
eco-development, health

Comparative assessment of mineral content and antioxidant properties of some cabbage varieties available on Romanian market

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Abstract Cabbage is leafy vegetable that is currently used in human nutrition. In addition, it contains active compounds with antifungal, antibacterial, and anticancer activity. The present paper investigates the levels to which selected trace elements accumulate in various cabbage varieties available on Romanian market as well as the antioxidant properties of these vegetables. Our results revealed that purple cabbage varieties tend to accumulate higher amounts of Fe, Pb, Zn, Cu, and Ni and display a stronger antioxidant capacity than the green cabbage varieties.

Key words

purple cabbage, green cabbage, mineral content, vitamin C, total antioxidant capacity

The Universality of Grapevine

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Abstract "Over the centuries, grapevine, grapes and wine have appeared in all spiritual creations of mankind, treasure bequeathed to world culture" (I.C. Teodorescu)

It is this heritage of world culture that captured our attention, and that is why we gathered information from several fields regarding the representation of grapevine, grapes and wine, in an attempt to render a comprehensive picture in this respect.

There is no other plant more widely spread and no other fruit more wanted than the grape.

Our research focused on the representation of grapevine in religious art: painting, sculpture, engravings. The paper presents the first representations, the oldest we had access to, and in doing so it proves, through the age of these works, that choosing grapevine as an ornamental and symbolic motif is neither spontaneous nor short-term, but that it is supported by an entire philosophy that has lasted throughout the centuries.

Key words

grapevine, wine, religious art, sigillography, numismatics

Comparative analyses of the space exploring growth in natural forests (“Izvoarele Nerei” natural reserve) and in managed forests

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Abstract This article presents some preliminary results concerning the study of crown architecture for two sets of beech seedlings (*Fagus sylvatica*) with different origins: one from old-growth forest and the other one from second-growth forest. The data obtained from the measurements and the observations which were done (total height of the tree, internodes lengths, number of growth cycles, number of second growth stems, geometrical parameters of the crown) were pairwise compared. The results show that there are significant differences between the crown architecture of two statistical populations of seedlings and the growth differences do not actually describe a certain architectural type.

Key words

beech crown architecture, internodes lengths, number of growth cycles

Methodological aspects regarding the analysis of beech seedlings crown development

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Abstract This article presents some basic methodological challenges raised by analyzing the crown architecture and development of beech seedlings. Since the issue implies both qualitative and quantitative considerations, it is difficult to establish the best methodological approach. Therefore some general considerations about the state-of-the art were necessary, since the problem is quite new in the forestry research field and a it needs a more coherent grasp on the issue.

Key words

beech crown architecture, 3D virtual images of trees

Correlations between rainfall and accumulation of nitrate in water samples from shallow wells of Timis County in 2009-2010

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Abstract Ground water provides drinking water for more than one-half of the earth population and is the only source of drinking water for many rural communities and some large cities. In order to determine the influence of rainfall on nitrate accumulation were monitored shallow wells in Timis county during 2009-2010. Analyses for nitrate determination were made with Spectroquant NITRATE 14 773 to Spectrophotometer SQ 118 at wavelengths of 515 nm. The quantity of precipitation in the 12 months of 2009, had oscillating values in most of the months, September 2009 was particularly dry being recorded only 4.8 mm, June, October, November and December 2009 were characterized by abundant precipitations, all this leading to accumulation of high nitrate values in all the 3 sampling points monitored. In 2010, it is noted months as May and June with abundant rainfall, which go far beyond yearly averages registering a nitrate content of 131.3 mg/L respectively 118 mg/L above maximum admitted limit of 50 mg/L. In autumn and winter months, concentrations of nitrogen compounds have maximum values and are due to frequent rainfall recorded during this time of year.

Key words

nitrates, water, rainfalls, shallows

Contrast as an aesthetic proceeding for vegetation organizing in landscape structures

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Abstract Contrast is one of the most used criteria in landscape designing, not only in historical gardens but also in contemporary landscape arrangements. The overall distribution of vegetation along with detail composition offers numerous possibilities for realising particular aesthetical effects using the criterion of contrast. The solid understanding of the way in which contrast can be used by landscapers is particularly important for the final image of the arrangement, in order for it to benefit by superior aesthetical-qualitative valences and offer the competent or amateur spectator a spatial-volumetric impression which corresponds with the character of the work.

Key words

landscape arrangement, aesthetic criterion, vegetal composition.

Determinant factors for species choosing in urban street plantations

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Abstract The present study proposes to highlight the multitude of aspects and factors which determine the choosing of dendrologic species assortment for street plantations and alignments in the urban environment. These factors are grouped in categories, depending on their nature and importance, so that the final decision of choosing street dendrologic species and alignments can be taken correctly and accordingly to each situation in particular. Therefore street plantations will ensure an adequate aspect, and the urban image will be considerably improved.

Key words

urban green system, street plantations, dendrologic assortment, selection factors

The study of fertility on table grape varieties obtained at NRDIBH Stefanesti-Arges

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Abstract There were taken into study the grapes varieties: Argessis, Golden Ștefănești, Muscat Adda 22 Șt. and Perlette 10 Șt. The grape varieties are table grapes. The researches were made at Ștefănești Argeș plantation belonging to NRDIBH Ștefănești Argeș and part of Ștefănești vineyard, in 2010-2012 and there were studied the fertility values of these grapes. The fertility studied varieties was different from year to year depending on weather conditions. The varieties obtained from NRDIBH Stefanesti Arges will be expanded in culture and in other parts of the country.

Key words

table grapes, fertility coefficient, productivity

The comportment of the grapevine seedless clone Perlette 10 St. under the current climate conditions

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Abstract During the period 1983 – 1999, at INCDBH Stefanesti, the elite Perlette 10 St. was selected and grown in contest plantations in order to be destined to the fresh grapevine consumption. The identification of the biotypes (clones) having superior quality and production characteristics which

Key words

clone selection, phyto-sanitary testing, plantation

manifest constantly, has been achieved through the study of the elites chosen in comparative fields, using the method of repeated determinations in groups of years, under specific vineyard conditions. Through repeated verification of the elites in the contest plots the elite Perlette 10 St. stood out by superior quality, constant and sustained production of grapevines and the maintenance of the quality characters. The elite was homologated in 2008. Perlette10 St. is a variety obtained by Popa Camelia and coll. in 2008, by clonal selection. It is a variety with white, middle, seedless grapes which can be used mainly in obtaining raisins, jam and compote.

mother, comparative study

The Use of Pelargonium in Combination with other Flower Plants for their Use in Decorating Terraces and Semi-Shaded Areas

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Abstract The Pelargonium represents flower plants which are of particular interest because of the colour of inflorescences, leaves and long flowering period (Băla Maria, Floricultură generală și specială, 2012). They are used to decorate windows, terraces, and gardens during the hot season (Cantor Maria, Plante ornamentale de interior, 2008). They can be placed in pots, but also directly into the soil, depending on location, and they can also be used on their own or in combination with other flower plants consistent with the place where they are going to be located: direct sunlight, shade, partial shade (Doina Anton, Floricultură generală, 2003). The association of Pelargonium with other flower plants in arrangements was performed at Teaching Facility of the University of Agricultural Sciences and Veterinary Medicine of Banat Timisoara. For these arrangements Pelargonium Zonale plants were used: Blanka, Jitka, Alena and mixed.

Key words

arrangements, association, Blanka, Jitka, Alena

Pelargonium Zonale Cuttings Rooting in Different Substrates during summer at the Teaching Facility of the Faculty of Horticulture and Forestry of Timisoara

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Abstract Cutting propagation is a vegetative propagation method of flower plants (Cantor Maria, Plante ornamentale de apartament, 2008). This method is of interest because plants are obtained which accurately depict the decorative characteristics of the female plant, but also because grown plants are obtained in a much shorter time than by seed multiplication (Anton Doina,

Key words

length of cuttings, substrate, Pelargonium Zonale, Blanka, Jitka, Alena

Floricultură generală, 2003; Băla Maria, Floricultură generală și specială, 2012). For this study, we have used top plant cuttings of Pelargonium Zonale: Blanka, Jitka, Alena and mixed, of different lengths and different rooting substrates. We aimed to follow the type of rooting depending on the length of the cutting and rooting substrate composition.

The study was conducted at the Teaching Facility of the Faculty of Horticulture and Forestry of Timisoara in 2012, in the discipline of Floriculture.

Impact of some technological indicators on weeding and yield in sunflower

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Abstract Research was carried out during 2010-2011 and aimed at determining the impact of some weed control measures on both weeding rate and yield in sunflower. The weeds that predominated during the two trial years were: *Chenopodium album*, *Setaria glauca*, *Echinochloa crus-galli*, *Amaranthus retroflexus*, and *Xanthium strumarium*. Weed control rate oscillated between 80.48% and 88.75% in 2010 and between 83.15% and 91.37% in 2011. Absolute yield oscillated between 23.48 q/ha and 30.45 q/ha in 2010 and between 19.09 q/ha and 26.27 q/ha in 2011.

Key words

sunflower, weeds, share, control rate, yield

Climatic conditions influence on the variation of quality indicators of some Romanian and foreign winter wheat cultivars

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Abstract Winter wheat variety evaluation will become increasingly important in the future. The introduction of new local and foreign varieties of winter wheat in the production requires ecological and qualitative knowledge of these cultivars grown in a certain area. The purpose of the research is to monitor the behavior of nine varieties of winter wheat: Element, Apache, Sorrial, Sobbel, Lovrin 34, SO-207, Ciprian, Soissons and Exotic.

The experimental field was placed in 2010 and 2011 in Banat County, on a cambic chernozem and the fertilisation level was N₁₂₀P₆₀K₆₀. Quality parameters that were followed are: moisture, protein content, gluten content and Zeleny sedimentation index. Cultivated on a cambic chernozem (west of Romania), with a moderate fertilisation level (N₁₂₀P₆₀K₆₀), Element, Apache, Sorrial, Sobbel, Lovrin 34, SO-207, Ciprian and Exotic –all registered in 2012, a dry year, greater values of protein and gluten content than the values of this parameter registered in 2011.

Key words

winter wheat cultivar, climatic conditions, protein content, gluten, sedimentation index

The sedimentation index (Zeleny) was also influenced by climatic conditions. With the exception of Soisson and Lovrin 34, all the varieties registered in 2012 greater values of this parameter comparative with 2011 agricultural year.

Soissons was not positive influenced by the climatic conditions changes in 2012 and it registered the lowest quality parameters.

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

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

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

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

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

Key words

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

Modification on some agrochemical soil parameters after tomato mineral fertilization

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Abstract The main objective of this study is to investigate the modification on some agrochemical soil parameters (pH, humus, total nitrogen, mobile phosphorus and mobile potassium) after three years of tomato NPK fertilization. The study was performed on control soil samples (without fertilizers) and soil samples after differentiated NPK fertilization in variable doses: N₃₀P₃₀K₃₀, N₄₅P₄₅K₄₅, N₆₀P₆₀K₆₀ and N₁₂₀P₆₀K₆₀. The experience was done in a cambic cernosium soil, with low acidity reaction, very good content in nitrogen, phosphorus and potassium and the high natural fertility potential favorable vegetables cultivation in Romanian Western Plain area. The experimental field is located in temperate climatic area, characterized by Koppen classification in the formula Cfbx.

Tomato fertilization with mineral fertilizer determines, in time, significant modifications of agrochemical soil parameters. To preserve the soil quality must find the optimum dose of NPK fertilizer in tomato crop fertilization.

Key words

agrochemical soil parameters, mineral fertilization, tomatoes

Determination of *in vitro* germination capacity of black pines seeds depending on the sterilizing agent

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Abstract Vegetative multiplication of pine can be established easily by mature embryos culture, realized by seed germination on *in vitro* conditions. Seeds inoculation on aseptic conditions must be preceded by seeds sterilization, using chemical agents. In this paper, three chemical sterilizing agents were used in different concentrations and HgCl₂ 0.1% was found to be the proper sterilizing agent both for a good germination percentage and low infectivity of cultures. Germination capacity depended highly by the genotype, Greek genotypes showing a lower germination capacity comparing with the Romanian ones, but also on the sterilizing agent. Cultures infection degree was not dependent on the genotype but on the sterilizing chemical agent used.

Key words

Black pine, germination capacity, infectivity, sterilizing agents

Dodders (*Cuscuta spp.*): skin repose, seed germination and pre-parasitic life

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Abstract Lately in Romania dodders have been the most dangerous parasites on perennial forage bean crops (alfalfa, clover, bird's foot, seeded lawns with bean majority, etc.) Although vegetatively propagated with fragments of stems, a broader way of spreading is accomplished by means of seeds, which retain their germination capacity for a duration of up to 40 years in storage spaces; and of up to 6-8 years in soil, plant debris or manure. Dodders offer many curiosities and numerous features which can explain the adaptation of the plant to parasitism, such as: an enormous fertility capacity (up to 10000 seeds per plant); a long period for search of host plants for subsistence; a long germination ability, covering several time periods due to the phenomenon of skin inhibition, etc.

Key words

Dodder, seed germination, pre-parasitism

Ecological and economic impact of dodder species (*Cuscuta* spp. Convolvulaceae) on pratological ecosystems

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Abstract This paper is based on a study carried out on several prato-ecosystems (grasslands, crops of perennial leguminous fodders) in the south-eastern region of Romania. All these ecosystems are characterized by the presence of a holoparasitic anthophyte, namely *Cuscuta* spp., which has a deep impact on vegetation due to the fact that it determines modifications in the structure of the vegetal carpet, it decreases the arable surface, results in quantitative and qualitative crop losses, represents a vector concerning the transmission of such diseases as viroses and microplasmoses to the host plant, and its impact on the biodiversity determines the degradation of the landscapes' decorative aspect.

Although dodders parasitize a significant number of plants, the most important are the damages produced on perennial leguminous fodders, such as: alfalfa, clover, cockshead, *lotus corniculatus* and several combinations for sown meadows and natural grasslands. Nevertheless, further species are endangered as well, such as vegetables (onions, chives, tomatoes, carrots, spinach), textile plants (flax, hemp, cotton), industrial plants (potatoes, beets) and ruderal plants on railway sides or irrigation channels. Moreover, it also affects timber, such as willow, acacia, plops, blackberry trees and even gramineae, even if they do not represent its favorite host plants [31]. In Romania, almost 20% of the alfalfa and red clover crops are affected by this parasitic plant; and the spreading of dodders result in annual losses of over 20 million RON [38].

Key words

Cuscuta spp., ecological impact, economic impact

Study on some Soil Maintenance Systems and their Impact upon some Apple Varieties' Quality in Conditions of Timisoara

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Abstract In the fruit total world production, apples occupy a special position because, together with bananas and oranges, they assure 2/3 of the global harvest, each species having an almost equal contribution of almost 40 millions tones. This specie is appreciated due to its plasticity of being cultivated in most parts of the world, having moderate requests for the climatic conditions of the culture area. It is also appreciated for the flavour, juiciness and taste of fruits, being one of the most affordable fruit species on the global market. Due to this and many other aspects, a study was developed in the Agrotechnique Department of Faculty of Horticulture and Forestry of Timisoara upon some apple varieties cultivated in the orchard of the Fruit Culture Department. This paper presents the impact of some soil maintenance systems upon two apple varieties cultivated in the Didactic

Key words

apple, soil maintaining systems, weight, sugars, acidity

Station Timisoara: Generos and Pionier, concerning fruits' quality – weight, sugars and acidity content. The experiment is monofactorial, having four experimental variants: V1 – no herbicides, no hoes – control variant; V2 – mulching with mowed grass between the tree rows; V3 – mixed *Fabaceae* plants seeded between the tree rows + Roundup (3l/ha) on the tree row; V4 – 2 manual hoes + 2 mechanical hoes. The results show that, for both apple varieties, the best results concerning fruits weight and sugars content were obtained in variants V3 and V2, and the smallest fruits were harvested from variants V1 and V4. On the opposite, the highest content of acidity was determined in variants V1 and V4, also for both varieties.

Study on some Apple Varieties' Quality under the Impact of some Soil Maintenance Systems Used in the Orchard of the Didactic Station Timisoara

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Abstract The importance of apple culture is completed by trees' or species' features, having a large number of varieties and rootstocks which assure a high variability considering its vigour, productivity, precocity, longevity. It is a species which has a high ecological adaptability, being resistant to frost during winter and late frosts in spring and it can be cultivated in different culture areas. Apple culture is very complex, so improving the technological links of this process was, is and always will be of great importance. In order to improve some of these, a study was developed in the Agrotechnique Department of Faculty of Horticulture and Forestry of Timisoara upon some apple varieties cultivated in the orchard of the Fruit Culture Department: Jonathan and Florina. The article presents the impact of three soil maintenance systems upon fruits' quality, meaning weight, sugars and acidity content. The monofactorial experiment has four experimental variants: V1 – no herbicides, no hoes – control variant; V2 – mulching with mowed grass between the tree rows; V3 – mixed *Fabaceae* plants seeded between the tree rows + Roundup (3l/ha) on the tree row; V4 – 2 manual hoes + 2 mechanical hoes. The results show that, for both Jonathan and Florina varieties, the best results concerning fruits weight and sugars content were obtained in variants V3 and V2, and the smallest fruits were harvested from variants V1 and V4. On the opposite, the highest content of acidity was determined in variants V1 and V4.

Key words

apple, varieties, soil, mulching, green manure, hoeings, weight, sugars, acidity

Study on the capitalization in a tourism purpose of the zoo-pastoral heritage of the protected areas Natura 2000

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Abstract This paper presents the geographic and functional zoning of the site of Community importance Sighișoara – Târnava Mare. The typology presents current and potential visitor experiences. The zoning is part of the recreation and tourism zoning based on natural and human heritage and data from local administration. We are interested if in all these areas if an important goal is the exploitation for tourism of the zoo-pastoral heritage (sheepfolds and pastoral arrangements, customs and traditions, foods and crafts.). Zoning for tourism and recreation should take into account not only existing infrastructure and offers, but also the potential in directions that government wants to stimulate, considering them to be in harmony with the conservation objectives of Natura 2000. The case study is made in Natura 2000 site Sighișoara – Târnava Mare. There are made recommendations in three different ways: preserving traditions, land and natural resources use, tourism and recreation.

Key words

tourism, recreation,
pastoral, objectives

Conservation of natural resources based on exploitation of local/traditional products, and those important for nature conservation

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Abstract This paper presents the concept of high natural value farming areas also the concept of traditional product and describes the characteristics of local products. High natural value farming areas have great social value, economic and cultural farming systems brought by maintaining the agriculture systems with a high natural value and local products recognition for their high quality. There are described the characteristics of HNV farming in Sibiu. It is also presented the sheep breeding in Sibiu county and the traditional products officially registered. In 2011 in our county were 459,6 thousand heads of sheep, which placed Sibiu county on the second place in our country. The paper present the classification of breeding households ordered by effectiveness. We have made a market study regarding the producers which are official registered with sheep traditional products. The specific advantages of a local product are also presented, according with their natural value.

Key words

forest, biodiversity indicator,
value, product

The impact of the method of weed control on the production of oil on sunflower hybrids Mateol and Splendor in Timis County

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Abstract Sunflower is a plant susceptible to weeds in the early stages of vegetation (1,5,9). The paper "The impact of the climatic factors and method of weed control on the production of oil on sunflower hybrids Mateol and Splendor in Timis County" is trying to find the perfect formula for the weed combat in sunflower crop. In order to try to reduce pollution of soil and underground water, we studied the bond between the method of combat (herbicides and hoeings), the remanence of the herbicides in soil and the environmental factors action and the content of oil and the oil production in sunflower crop.

We studied five variants of weed control :

V₁ = no herbicides, no hoeings,

V₂ = 2 manual hoeings and 2 mechanical hoeings ,

V₃ = Guardian 2l/ha,

V₄ = Dual Gold 960 CE 1.5l/ha and

V₅ = Stomp 330CE 5l/ha

We calculated the oil production the difference from the witness , according the applied method. The studies about the weeds control at sunflower crop were made in the experimental field of University of Agricultural Science of Timisoara

Key words

sunflower, weeds, herbicides, oil, production

The impact of the environmental factors and of the fertilization`s level on production of oil and oil content on sunflower hybrids in the west side Romania

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Abstract Sunflower is a oily plant of great economic importance. The seed content of fats (33-56%) and high quality of the resulting oil extraction makes this plant one of the main sources of vegetable oil (1,4,5,9) used in human nutrition, and the most important source of oil for Romania (7). The paper "The impact of the environmental factors and of the fertilization`s level on production of oil and oil content on sunflower hybrids in the west side Romania" is trying to find the perfect formula for the cultivation of sunflower hybrids in Romania.

In order to try to reduce pollution of soil and underground water (6) , we studied the bond between the level of fertilisation, the hybrid used and the environmental factors action and the content of oil and the oil production in sunflower crop.

We studied four variants of fertilisation : V₁ = N₀P₀K₀, V₂ = P₄₅K₄₅N₄₅ , V₃ =

Key words

sunflower, fertilisers, oil, production

$N_{60}P_{60}K_{60}$, and $V_4 = N_{90}P_{90}K_{90}$

We calculated: the oil content in sunflower seeds, the average oil production the difference from the witness, according the level of fertiliserz applied.

The studies about the weeds control at sunflower crop were made in the experimental field of University of Agricultural Science of Timisoara.

Evaluation of relative water content (RWC) at four barley (*HORDEUM VULGARE* L.) genotypes in response to microwave treatment

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Abstract From the electromagnetic spectrum (EM) three different wavelength regions can be used to provide information on vegetation characteristics: the Visible to Short Wave Infrared, the Thermal Infrared and the Microwave regions. The relative water content (RWC) of the plants is used as a measure of the water status. Vegetation status is an indicator of the degree of stress experienced by plants in their environment. The aim of our investigation was to determine the effect of microwave treatment of barley seeds, we were preseted morphological parameter: relative water content (RWC) for 4 diffrent winter barley genotypes. RWC compares the water content of a leaf with the maximum water content at full turgor. Values of RWC for leaves of the studied genotypes ranged from 88.07 at Cardinal variety to 97.8 at the Sistem variety, under irradiation of the microwave conditions and is observed a good correlation between Cardinal, Maresal and Dana genotypes, in different the power and time of exposure of the microwave.

Key words

barley, RWC, microwave

Study on the effect of aluminum sulfate treatment on postharvest life of the cut rose 'Boeing' (*Rosa hybrida* cv.Boeing)

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Abstract This experiment was carried out to investigate the effect of aluminum sulfate on postharvest life of a cut rose cultivar (*Rosa hybrida* 'Boeing'). Flower stems were placed in aluminum sulfate solutions (0, 150 mg l⁻¹, 300 mg l⁻¹, 150 mg l⁻¹+sucrose 3%, 300 mg l⁻¹+sucrose 3%) until the end of vase life as a standard treatment and distilled water was used as control treatment. Aluminum sulfate treatment (150 and 300 mg l⁻¹) extended the vase life of flowers from 9 days (control) to 12 and 12.3 days respectively.

Key words

cut flower, relative fresh weight, solution uptake, vase life

Aluminum sulfate (150 and 300 mg l⁻¹) application resulted in a significant solution uptake until the end of the vase life. At last measurement the relative fresh weight of flowers treated with 150 and 300 mg l⁻¹ aluminum sulfate showed significant higher values than the other levels of treatment due to more water uptake. Aluminum sulfate (150 and 300 mg l⁻¹) had positive effect on flower bud opening and increased flower diameter compared to control.

Assessment of genetic diversity in a collection of local tomatoes by SDS-PAGE method

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Abstract The work presented in this paper resides in electrophoretic analysis of proteins extracted from seeds of several Romanian tomato varieties. The protein profiles of tomato seeds were obtained by Sodium Dodecyl Sulfate - Polyacrylamide Gel Electrophoresis (SDS-PAGE) method using 2 variants of extraction solution in order to obtain a wider viewing of tomato seed protein subunits. Analysis of protein patterns of 12 different samples showed no significant qualitative differences between genotypes. Four varieties showed a higher number of bands (Pontica, Carisma, Siriana and Coralina). Both extraction methods have led to the development of several bands located between 3 kDa and 142 kDa in most genotypes. Small quantitative differences were observed in the level of 90 kDa and 41 kDa using the first version of solution extraction compared to the second one. Anyway, a high level of homogeneity was detected with both methods used. Therefore these varieties should be studied also at the level of DNA.

Key words

tomato varieties, protein profiles, SDS-PAGE, extraction solution, homogeneity, protein subunits