

First results on phytosanitary status of Chinese jujube in Romania

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Abstract Chinese jujube (*Ziziphus jujube* Mill.), was introduced to Europe during Octavian Augustus, Roman emperor. Two biotypes of Chinese jujube are found in Dobrogea Region at Ostrov, on Danube shore and at Jurilovca, close to the Black Sea. At the Faculty of Horticulture, within the University of Agronomic Sciences and Veterinary Medicine of Bucharest, 11 genotypes of *Ziziphus jujuba* were introduced from Shanxi Province, China, after 1996. Trees were planted, in the experimental field at 4.0 x 2.5 m and lead as slender spindle. Since then, each genotype was studied regarding the phenology, tree growth and fruit production. The results proved that, in the southern part of Romania, there are suitable natural conditions for jujube growing. Until now, Chinese jujube showed to be resistant to pests and diseases, being cultivated without phytosanitary treatments for 19 years. Our field observations during 2016, demonstrated the existence of four fungus species on the fruits, before the full ripening, fungus that belongs to the *Alternaria* spp., *Rhizopus* spp., *Fusarium* spp. and *Monilinia* spp. The micromycetes identification was performed by successive isolation and subculturing, using PDA (Potato Dextrose Agar) medium and incubation at 22°C. The results showed an indirect correlation between the fungus incidence and the jujube fruit resistance to cracking.

Key words

Ziziphus jujuba, genotypes, pathogens, PDA (Potato Dextrose Agar) medium

The influence of sowing time and fertilizer levels on biomass yield of safflower crop from Southeastern Romania

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Abstract Safflower is an oilseed plant that has multiple uses: in the food industry as cooking oil, spice and natural dye, in the pharmaceutical industry, cosmetic industry, as well as additive in animal and poultry feed. This study aims was to investigate the influence of technology factors influence on the evolution of biomass yield from three varieties of safflower: CW 88 OL, CW 1221 and Zanzibar sown in Experimental Field from Moara Domnească. Technological factors used were: factor A - three varieties of Safflower (*Carthamus tinctorius* L.): a1 – CW 88OL, a2 - CW 1221 and a3 - Zanzibar; Factor B - six fertilizer levels b1 - (N₀P₀K₀ - control), b2 - (N₆₀P₀K₀), b3 - (N₉₀P₀K₀), b4 - (N₉₀P₆₀K₀), b5 - (N₉₀P₆₀K₆₀), b6 - (N₆₀P₆₀ + foliar fertilizer) and factor C - three sowing dates: I (second decade of March), II (first decade

Key words

Carthamus tinctorius L., fresh biomass, dry biomass

of April) and III (first decade of May).

The highest values of fresh biomass were achieved in first sowing date (March) and harvested in July on N₉₀P₆₀K₆₀ fertilizer level as following: CW 1221 had the highest biomass: 20.67 t ha⁻¹, followed by CW 88 OL variety with 19.42 t ha⁻¹ and Zanzibar variety with 19.09 t ha⁻¹.

Following the obtained results we can say that safflower varieties biomass studied was influenced by sowing time, fertilizer levels and harvesting time. The maximum biomass was obtained if the sowing was done in the first decade of March, harvested in July and using as fertilizer the complex N₉₀P₆₀K₆₀.

Alternative methods to improve soil activity before planting an organic edible rose crop

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Abstract An important stage in the establishment of an organic perennial crop is the enhancement of soil fertility and biological activity. With the goal of planting an organic edible rose culture, a special soil preparation was applied. Three ameliorative plant species, *Sinapis alba* L., *Tagetes patula* L. and *Phacelia tanacetifolia* L., with role in soil disinfection were used. Seeding was executed in the experimental field of USAMV Bucharest in late March in seven different combinations (V1-V7) and a control plot was kept without seeding (V8).

After flowering and seed formation, the mature plants were trimmed and incorporated into the soil. Soil agrochemical and biological analysis were done before seeding and at the end of the cultivation period. The results show an improvement of the soil microbiological activity. The number of fungi was lower than in the initial phase represented by ubiquitous species of *Fusarium*, *Penicillium* and *Aspergillus* and significantly lower compared to the control for most variants, with the exception of V3 *Phacelia* variant, where the number of fungi increased considerably. The ratio between fungi and bacteria has changed in favor of bacteria, whose number has increased significantly in all variants in comparison with the initial found value and with the control. The most important bacteria were representatives of *Pseudomonas* and *Bacillus* genus. The most populated soils with bacteria were in V4 *Sinapis* + *Tagetes* variant and V5 *Sinapis* + *Tagetes* + *Phacelia*.

Key words

Sinapis alba L., *Tagetes patula* L. Sparky Mix, *Phacelia tanacetifolia* L., fungi, bacteria, soil respiration, organic farming

The status of brown marmorated stink bug, *Halyomorpha halys*, in Bucharest area

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Abstract The brown marmorated stink bug *Halyomorpha halys* (Stål) (Heteroptera: Pentatomidae) was on the alert list of European and Mediterranean Plant Protection Organization (EPPO) from 2008 until 2013. *Halyomorpha halys* is a major polyphagous pest mainly of fruit trees and vegetables, field crops as corn and soybean and some ornamental plants and weeds and became in the last two decades a threatening invasive pest in USA. In Europe was first captured in a light trap in 2004 in Liechtenstein and afterward in 2007 in Switzerland and its evolution stayed unnoticed until 2015, when major damages were reported mainly by Italy, where despite all control measures the pear crops in some regions were totally destroyed. In Romania, the pest was first time described in 2015, following its discovery in Bucharest in September 2014, in Botanical Garden of Bucharest. The authors of that first report in Romania state that the entrance in the country could happen at least 1-2 years before, due to the fact that individuals of *Halyomorpha halys* were found in a range of several kilometers. Our observations in Bucharest area in 2015 show an alarming exponential spreading of the stink bug in the capital area, as well in some particular places all around the country. In 2016, in the USAMV Bucharest corn testing fields, goji testing fields, jujube experimental field and edible roses testing fields, *Halyomorpha halys* and *Nezara viridula* were always observed in cohabitation and they produced crop losses of 100% to goji crop, starting with the month of august and major quality depreciation in the corn field. On jujube experimental field and edible roses testing field, the adults of *H. halys* were observed since early September, without major damages. The pest also started to become a nuisance pest, many people complaining about its presence in the houses or public transportation.

Key words

brown marmorated stink bug, *Halyomorpha halys*, invasive pest, nuisance pest

CRISPR/Cas Technology in Plant Genome Editing

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Abstract A new tool based on a bacterial CRISPR-associated protein-9 nuclease (Cas9) from *Streptococcus pyogenes* has emerged as a powerful tool for engineering the genome in diverse organisms. The functions of CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats) and CRISPR-associated (Cas) genes are essential in adaptive immunity of bacteria and archaea, protecting them against invading nucleic acids such as

Key words

CRISPR/Cas, small RNA, genome editing

viruses, by cleaving the foreign DNA in a sequence-dependent manner. The CRISPR/Cas technology allows targeted cleavage of genomic DNA guided by a customizable small noncoding RNA. It involves the introduction of targeted DNA double-strand breaks using an RNA-guided engineered nuclease, stimulating non-homologous end-joining gene modifications by DNA repair mechanisms. In this review, we describe the current models of CRISPR/Cas9 function and the structural and biochemical studies that support it. We focus on the applications for plant genome editing and highlight the many advantages that CRISPR/Cas9 technology offers.

Methods of pests prevention and control applied in two organic apple orchards

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Abstract The apple production has a long tradition in Romania, but only in the last 10 years, the growers started to established new high density orchards. Beside changing the cultivation techniques, growers had to adjust the phytosanitary treatments in order to become competitive in terms of yield quantity and quality. Recently, organic orchards have developed as an alternative to the conventional production. One of the most important challenges in the organic orchard is to find an ecological way of limiting the pest and diseases action, in order to reduce the risk of contamination with pesticides, insecticides and other elements that can affect the final consumer and the environment. The paper presents data collected from two organic apple orchards at USAMV in București and Arad County at "Fruit for You" orchard. Different methods for pests monitoring and mitigation with pheromone traps, evaporators for mate disruption, sticky traps were tested in the two plantations. The results showed that the used ecological methods, prevented codling moth breeding and maintained the pest butterflies populations below the economic level. Instead, sticky traps should be used with reserve, only when the situation requires, as they can affect useful entomofauna and useful birds.

Key words

Malus domestica, mate disruption, pheromone traps, food safety

Research on forecasting of rough conversed wood mass

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Abstract This paper addresses the issue of research on forecasting wood mass, given that currently the law in Romania has no regulations on the management of rough conversed wood mass during the process of logging in order to forecast commercial varieties (primary varieties of lumber and industrial varieties).

In the first part, the paper motivates the need to forecast wood mass both from an economical and environmental point of view.

After that, the paper presents the work methodology and the steps that must be taken to predict rough conversed wood mass from within a parcel of wood exploitation, beginning with the structure of wood exploited or structure of industrial varieties of a logging lot estimated on the base of the A.P.V.

The paper presents and exemplifies this method of forecasting rough conversed wood mass, in a logging lot, by exemplifying necessary operations and calculations and drawing a conclusion on the most important aspects in terms of forecasting rough conversed wood mass.

Key words

forecasting, lots, timber

Study of gene effects for insoluble protein content in winter barley

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Abstract: The increase of grain protein content is a major objective of barley feed quality. There are a number of factors that influence the final protein content and composition, including genotype, growing environment and fertilizer. The aims of this study was to determine the gene effects, the inheritance type and the elements of genetic variance for insoluble protein content in six winter barley varieties.

The dominance effects have a great and significant contribution to the inheritance of insoluble protein content, considering that the contribution of additive effects is much lower and insignificant. Also, for the improvement of this trait, methods like bi-parental or diallel selective mating can provide best results. Genes with additive effect are involved only in the inheritance of this trait in Plaisant and Lyric varieties, while for other varieties this trait is controlled by environment or non-allelic gene interactions. In order to obtain genotypes with high level of insoluble protein, a balanced accumulation of recessive and dominant alleles is favorable. Taking into account the low value of narrow sense heritability, it will be very difficult to predict the response to selection for a certain level of protein content.

Key words

Winter barley,
diallel, protein content

Assessment of breeding potential for proline content in winter wheat hybrids

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Abstract: The selection for drought tolerance in early generations can be effectively performed using different solutes like the proline, considering that a high level of proline content is associated with a good tolerance to osmotic stress. The aim of this research was to estimate the performance and breeding potential for proline content among 21 F1 hybrids of seven winter wheat varieties, with different genetic and ecological origin.

The over dominance is acting in the inheritance of proline content for most of the hybrids associated with an increase of proline content in four combinations, while for other nine combinations it has a negative effect. The complete dominance causes a reduction of proline content for two combinations. The highest potential to improve proline content of leaves was observed in Xenos x Turda 2000 and Fundulea 4 x Alex, which allow the selection of 48-50 % recombinant lines with values of this trait over 27 µg/mg, alongside with Fundulea 4 x Turda 2000 that can provide 36 % valuable recombinant lines. These hybrids are also important for breeding because they have different combinations of genes which contribute to the expression of high proline content.

Key words

Winter wheat, breeding potential, proline content

Research concerning the cane evolution and maturation in several vine varieties, depending on genotype, environment and technological conditions

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Abstract This study aimed to establish the influence of variety, green pruning and climate on cane lengths growth and maturation in Burgundy, Muscat Ottonel, Coarnă neagră and Muscat Hamburg varieties during 2011-2012. Research was carried out in the vineyard of the Didactic Station Timisoara. Measurements were made in the vineyard, followed by statistical data analyses. After the investigations it was found that in all varieties, the rate of wood maturation was not influenced significant by phenological growth stages in both years, and the green pruning decline significant shoots number.

Key words

grapevine, variety, vigour, shoot, green pruning

The impact of growing technology, on crop quality in several vine varieties

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Abstract Present research analyzed crop quality in two wine grape varieties: Muscat Ottonel and Burgund and two table grape varieties: Coarnă neagră and Muscat Hamburg, during 2011 and 2012. Study was carried out in the vineyard of the Didactic Station Timisoara. Research focused on berries quality, grape juice sugar content and acidity. After data statistical analyses resulted that green pruning had a positive effect, causing a significant increase in resistance to millerandage and coulure.

In 2012 the climate was significantly more favourable compared to 2011 concerning sugar accumulation. Amid the growing conditions of 2011 acidity of grape juice showed a significantly higher value by approximately 8% compared to the 2012 amount.

Key words

grapevine, variety, green pruning, grape juice, acidity

Evaluation of Wheat Genotypes for Salt Tolerance Based On proline content

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Abstract The aim of this work was to evaluate the changes in the amino acid, proline accumulated in plants under salt stress conditions. Fourteen wheat genotypes were grown in the salinity levels (control, 150mM NaCl, 200 mM NaCl, 240 mM NaCl).

The results of this study showed that salinity stress led to generally high free proline levels. From this parameters stand point the genotypes with a salt tolerance correlated with high values of proline was presented by cultivars: Glossa, Capo, Apache, Iosef.

Key words

wheat, salt tolerance, proline

Nature-based tourism in forests as a tool for rural development – analysis in Sibiu County

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Abstract The paper presents the importance of tourism and recreational functions of the forest. There are described the concepts of „nature based tourism” and ecotourism and their linkage with sustainable development of rural areas. Natural ecosystems in Sibiu county, specific forests, is characterized by a great diversity of flora and fauna, which are based for the nature based tourism.

Key words

forest, rural development, sustainable development, ecotourism

Plant genotyping - from molecular markers to DNA barcoding

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Abstract The aim of this work was to emphasize the advantages and disadvantages of molecular markers and barcoding strategies in different plant species genotyping. Three types of molecular markers were selected, all of them generating complex and accurate fingerprints due to their multiple sites of recognition in genome: RAPD (Random Amplified Polymorphic DNA), ISSR (Inter Simple Sequence Repeat) and DAMD (Direct Amplification of Minisatellite Regions). They target different regions namely- randomly the whole genome, the sequences from the microsatellites and the minisatellites respectively. Studying a high number of plant species turned out that the different type of markers efficiency was the same but they generated different dendrograms. Therefore to establish a more accurate dendrogram it is recommended to combine the data obtained with different types of markers. If the specie identification is necessary the barcoding process is recommended. It consists in sequencing of specific regions from the chloroplast genome and comparison with the specialized databases.

Key words

Markers, DNA barcoding

Genetic analysis of chlorophyll content in some barley (*Hordeum vulgare*) genotypes

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Abstract Measuring plant chlorophyll concentration is a well-known and commonly used method in agriculture and environmental applications for monitoring plant health, which also correlates with many other plant parameters including, e.g., carotenoids, nitrogen, maximum green fluorescence. Genetic improvements of crops involve selection of suitable plants in segregating populations from a cross. The objective of the present study was to evaluate the chlorophyll content in barley. The studied biological material consisted of four barley varieties with different genetic and ecologic origin, along with their 6 one-way crosses. The highest heterosis values of type „cis” (9.03%) and „trans” (4.09%) was recorded in the combination between Adi x Djerbel hybrids.

Key words

barley, chlorophyll content, genetic analysis

Results concerning the evolution of viral and physiological degeneration of seed potatoes during 2013-2015, Târgu Secuiesc

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Abstract Production and multiplication of seed potatoes in Romania passed in recent decades through a difficult period in terms of cultivated areas and quality of potatoes produced in the traditional closed areas. Planting material quality is a key factor for potatoes, being more important compared to other cultivated plants. It determines the quality and quantity of the crops, being widely recognized that potato production is more than 50% determined by the quality of plant material. Nowadays it is widely accepted throughout the world that the decreasing quality of seed potato is caused by potato degeneration. Depreciation of biological production potential is the consequence of two major causes, infection by viruses and decrease in the growth vigor due to physiological age.

Key words

potato, degeneration, quality, virus

Assessment of some physicochemical characteristics and heavy metals content and distribution in soil

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Abstract For determining the soil quality and the relationship between soil properties and heavy metal content, some agrochemical and physicochemical investigations were made by using Romanian standard analytical methods. The main purpose was to assess the soil fertility, the influence of some soil physicochemical properties on the distribution and mobility of certain heavy metals in contaminated soils. In order to measure the degree of correlation between the heavy metal content and the main properties of soils, Pearson's correlation coefficient was also used. The results showed that all of the studied heavy metals are mostly concentrated on the upper layer of soil and generally decreasing with depth, this due to their spatial distribution, mobility and physicochemical properties of soil.

Key words

soil physicochemical characteristics, contaminated soils, heavy metals, mobility, distribution

Resinous wood valorification aspects in Sebes forest district

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Abstract This paper presents the past and the present activities carried out by the Sebeş Forest District and resinous wood valorification. Here are presented details about the structure classified by species of forests managed by this district and standing trees or shaped wood mass. It is presented the economic efficiency of the activities carried out in the years 2014 and 2015.

Key words

durable forest, management, protection, valorification

Essential oil as an alternative to chemical antimicrobial agent for the culture of strawberry *in vitro*

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Abstract Expansion of methods that use essential oils to remove infections and eliminate autoclaving procedure could be the best protocol for plants *in vitro* culture. Thus, for sterilization of strawberry tissue culture, the essential oils (eugenol, carvacrol and thymol) were tested. Essential oils were added to medium (0.01, 0.02, 0.04, 0.5, 1, 2.5 and 5 %) in the first experiment. Treated media supplemented with essential oils were compared to autoclaving medium. In the second experiment, explants were sterilized by 0.5 % combination essential oils at different times (5, 10 and 15 minutes). Stock plants spraying with combination of essential oils were applied at greenhouse during third experiment. Results showed that, sterile conditions of medium were obtained by 100 % free fungi at 0.01 % and free bacteria at 0.5 % concentration from each essential oil. Combination of essential oils for five minutes in leave disinfestation provided 100 % free from fungi and 50 % free bacteria. Stock plants spraying with eugenol plus thymol decreased 75% bacteria and 84% fungi contaminations compared with control. This technique is an excellent alternative for media and explants disinfection. So the using of essential oils in *in vitro* culture could have prospective future to control contaminations.

Key words

Eugenol, carvacrol, thymol, disinfection, *in vitro* culture

Sustainable farm management in agriculture

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Abstract Sustainable development must harmoniously fulfill, the three key dimensions: economic, social and environmental. Sustainable development requires a balance between economic growth and environmental protection, satisfying not only present but also future needs of social development. In time, the concept of sustainable development has entered also in agriculture as a response to the entire suite of shortcomings of conventional agriculture.

Key words

sustainable agriculture , economy, management, profitable, farm

Organic agriculture in the context of sustainable development in Sibiu County

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Abstract This paper is based on the idea that the current situation of the Romanian agriculture has a low level of development, and our belief is that by developing organic farming determine the rapid development of the organic sector, thus bringing the contributions to changing the structure of agrarian Romania and reduction of poverty prevailing in Romanian villages. Organic farming should be regarded as a process rather than a guide to best practice, because it constitutes a solid basis in assessing the sustainability of development through the three dimensions of sustainable development concept, namely: the environmental dimension (through environmental protection, sustainable production, local resources and biodiversity conservation), economic (by contributing to the economic prosperity) and social (through social inclusion, public health).

Key words

sustainable development, organic agriculture, human and environment health

Researches regarding the obtaining of new potato varieties by identifying of valuable breeding lines at NIRDPSB Brasov

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Abstract In the context of continuous change of consumer demands, evolution of crop technologies and the accentuated variability of climate conditions is necessary to create new potato varieties that contribute at the raise of quality standards.

The researches undertaken in the 2012-2016 period are covered by the breeding program of NIRDPSB Brasov and runs through the gathering of information concerning the existing and available genetic resources and led at the identification of new genotypes with improved genetic traits.

The biological material is represented by 3 breeding lines and was obtained by sexual hybridization and subjected to the process of clonal selection.

During the breeding process, the perspective lines were assessed in terms of morphological characteristics, production and resistance to late blight, viruses and wart disease, culinary quality and earliness, evaluation criteria required at the proposal for testing in the ISTIS network.

Key words

potato, clonal selection, breeding lines, varieties

Computational Identification of Conserved Domains from Genomic Survey Sequences in Green Gram [*Vigna radiata* (L.) R. Wilczek]

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Abstract With recent advances in the field of genome sequencing, analysis and availability of large genomic data in the public domain, we made an attempt to survey the presence of the conserved domains, super families and multi domains having putative functions identified from green gram [*Vigna radiata* (L.) R. Wilczek] Genomic Survey Sequences (GSS) using computational tools. This study was beneficial in the area of comparative genomics for the identification of important genes and also development of functional molecular markers in identified genes for green gram and its related crops improvement.

Key words

Conserved domains, Genomic Survey Sequences (GSS), Green gram, Multi domains, Putative functions, Super families

Evolution of Chemical Compounds of Grapes from the Miniș-Măderat Vineyard for Determining the Optimum Harvest Time

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Abstract In order to carry out research on the physicochemical properties of some grape varieties for wine, in the 2013-2014 experimental years, the collection of the raw material (grapes) took place in the vineyard plantation located in Pâncota, Arad County, within the Miniș-Măderat vineyard.

In grapes there are a number of chemical compounds in different concentrations, which are also transmitted to the wine after the fermentation process. The determination of the evolution of these physicochemical parameters has been achieved through the use of advanced analysis techniques and technologies at our disposal.

In order to determine the optimum harvest time, we followed the evolution of chemical compounds (sucrose, pH and total acidity) to four wine grape varieties, two white grape varieties (Muscat Ottonel and Pinot Gris) and two red grape varieties (Merlot and Burgund) in two experimental years, 2013 and 2014, respectively. The analyses were carried out in the Oenology Laboratory of the Vignadoro Winery using the OenoFoss analyser.

The variation of the main characteristics of grape composition during the maturation period highlights their oenological potential in order to obtain quality wines.

The dynamics of sugar accumulation in grape berries was lower in white varieties and higher in red varieties.

Key words

chemical compounds, quality, harvesting of grapes

The Variability of Some Yield Components in Different Grape Wine Varieties from Miniș-Măderat Vineyard

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Abstract Research and observations have been carried out following the application of the technology specific to the conventional crop system, observing all technological links concerning plant and soil works.

The purpose of the research is to study the variability of the yield components in the cultivated varieties of vine, in order to establish the varieties capable of producing quality wines, according to the current international requirements.

In order to achieve the objectives of the present scientific paper, some vine varieties cultivated on the territory of the town of Pâncota, Arad County, within the Miniș-Măderat vineyard, under the pedo-climatic conditions in that area, were studied in order to highlight the quantitative differences existing between the grape varieties cultivated there.

Research has been carried out on vine varieties to obtain white wines, Pinot Gris, Traminer Rosé, Muscat Ottonel and Italian Riesling; the varieties to obtain red wines that were taken under study were Pinot Noir, Burgund, Merlot and Cabernet Sauvignon.

Regarding the two sources of variation, namely the genotype and the climatic conditions of the experimental period, both for white wine and for red wine varieties, they had significant influences on the yield/trunk.

The results obtained revealed that the largest differences between varieties were recorded for the yield/trunk and the weight of bunches, while in terms of the number of berries/bunch the variability of the varieties was considerably lower.

For red wine varieties, yields were considerably higher than for white wine varieties, especially in 2014 and 2015.

Key words

grape varieties for wine, inter-genotype variability, production stability

Contemporary forms of manifestation of the production functions used in agriculture

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Abstract In the last decades production functions in agriculture have gained a wide application in both crop and animal production. The analysis performed through the production function is intended not to cover the real process (for example the wheat production), but its shaping as an instrument of mathematical analysis.

Key words

production factors, agriculture, natural biological factors, methods

Natura 2000 forest habitats of the "Runcu-Groși" Nature Reserve

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Abstract The European Directive regarding the conservation of the natural habitats and the species of wild flora and fauna (92/43/EEC), known as the Habitats Directive, adopted in 1992, has as purpose the designation of „sites of Community importance”.

The major objective of the pan-European Natura 2000 network is to establish a „favourable status of conservation” for the habitats and species of Community interest. In this regard, the Habitats Directive indicates only the intended objective, without recommending concrete measures of conservation/management of the species and habitats of Community interest from the sites.

The “Runcu – Groși” Nature Reserve is included in the site ROSCI0070 Drocea, within the Reserve being found three types of forest habitats of Community interest: 9130 – *Asperulo-Fagetum beech forests*, 9170 – *Galio-Carpinetum oak-hornbeam forests* and 91Y0 – *Dacian oak & hornbeam forests*.

Key words

Forest habitats, Natura 2000, 9130, 9170, 91Y0, Runcu – Groși

The natural forests of South-Western Romania - conservation potential in the Banat region

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Abstract Natural ecosystems represent one of the most important resources for humanity, being the best keepers of biological diversity. Natural forests are the most complex terrestrial ecosystems and represent the most important models for sustainable use of the managed forests.

South-Western Romania (the Banat region) is one of the most rich areas in natural forests from Romania. The area hosts 3 National Parks and 2 Nature Parks, together with dozens of Nature Reserves. The most important ecosystems are European beech (*Fagus sylvatica* L.) forests, which dominate the landscape in the area.

The current paper aims to present shortly the 3 nominated components for the UNESCO Natural World Heritage from SW Romania (the Banat region): Cheile Nerei – Beușnița, Domogled – Valea Cernei, Izvoarele Nerei. The historic development of the forests, the human influences, the natural disasters, the current protection status and the habitats and species important for conservation are briefly presented.

Key words

Natural forests, European beech, conservation