

Preliminary data regarding the influence of grafting combination on the growth of the graft for the Pinova apple variety

Bărăscu R¹., D. Hoza¹

¹University of Agriculture Science and Veterinary Medicine Bucharest, Faculty of Horticulture

*Corresponding author. Email: dorel.hoza@gmail.com

Abstract Grafting the trees remains a solution for adjusting tree vigor, but also for shortening the youth period and rushing the bearing of fruit. Grafting the Pinova apple variety of four rootstocks frequently used nowadays, M20, M9 FI56, B9 and MM106, highlighted the different influence they had on the biometric parameters of the trees and on the ramification and formation of fruit buds capacity. The smaller trees were on B9, while the larger trees were on MM106. The use of two vigorous rootstocks, A2 and MM111, with grafting intermediary B9, showed reduction in tree vigor compared to MM106 and a better ramification and formation of fruit buds capacity during the grafting year, the trees looking as knipp-typed ones.

Key words

apple, rootstock, grafting

Assessment of antioxidant activity of Batavia lettuce and rocket from conventional and mycorrhized farming

Ciardi M.¹, Longo V.¹, Caltavuturo L.¹, and Stefania Frassinetti *¹

¹National Research Council, Institute of Biology and Agricultural Biotechnology (IBBA), Research Area of Pisa, Via Moruzzi 1, 56124, Pisa, Italy

*Corresponding author. Email: frassinetti@ibba.cnr.it

Abstract In the present study the antioxidant capacity of Batavia lettuce (*Lactuca sativa* L.) and rocket (*Eruca sativa* L.) cultivars produced from conventional and an organic farming with Arbuscular Mycorrhizal Fungi (AMF) named "Convivo", patented by the Mi.P.A.A.F (Ministry of Agricultural Food and Forestry), was evaluated using Oxygen Radical Absorbance Capacity (ORAC) and 2,2-diphenyl-1-picrylhydrazyl (DPPH) assays. Total phenolic content (TPC) of the two salads was also analyzed in order to evaluate the influence of farming on antioxidant activity. The association with AMF resulted in greater quantities of polyphenols in salads. The antioxidant capacity of rocket and lettuce grown with AMF was higher than that of conventional culture. Significant correlations were observed between TPC content and ORAC/DPPH values. The shelf life and maintenance of the nutritional quality of salads cultivated under conventional and organic farming were compared. Mycorrhized farming increased the antioxidant activity of salads as well as its stability overtime, compared with conventional farming. Within the mycorrhizal cultivars the treatment was more effective in rocket than in lettuce, giving a product with a longer 'shelf life'.

Key words

antioxidant activity, Batavia lettuce, rocket, Mycorrhizal fungi, Oxygen Radical Absorbance Capacity (ORAC), 2,2-diphenyl-1-picrylhydrazyl (DPPH).

Water air and hydrological properties of humogley in protected part of alluvial plain

Pekeč S.^{1*}, Orlović S.¹, Katanić Marina¹, Stojanović D.¹, Stojnić S.¹

¹University of Novi Sad, Institute of Lowland Forestry and Environment, Antona Čehova 13, 21000 Novi Sad, Serbia

*Corresponding author. E-mail: pekecs@uns.ac.rs

Abstract The properties of humogley soil on three sites in the protected part of the alluvial plain of the Danube river were examined in this study. According to granulometric composition in these soils prevail granulometric fractions of fine sand and dust, i. e. textural classes: clay loam, sandy loam and sand. The values of water properties of soil, such as water retention, physiologically active water, vertical water permeability, as well as air properties of soil (differential porosity) were determined. It was found that granulometric composition affected water and air properties of soil with different proportion of granulometric fractions. In the investigated soils was determined depth of groundwater, whose values depended exclusively on the oscillation of the Danube water level.

Key words

granulometric composition, soil properties, ground water, the Danube

Induced mutation in ornamental gingers (Zingiberaceae) using chemical mutagens viz. Colchicine, Acridine and Ethylmethanesulphonate

K. M. Prabhukumar^{1&2}, V. P. Thomas^{1&3}, *M. Sabu¹, A. V. Prasanth¹ and K. V. Mohanan¹

¹Department of Botany, University of Calicut, Kerala-673635, India; ²Centre for Medicinal Plants Research, Arya Vaidya Sala, Kottakkal, Kerala-676 503, India; ³Department of Botany, Catholicate College, Pathanamthitta, Kerala-689645, India

*Corresponding author E-mail: msabu9@gmail.com

Abstract Induced mutations have great potential and serve as a complimentary approach in genetic improvement of crops. Mutation studies in Zingiberaceae members has proven to be an ideal tool for generating material to be used in investigating genotypic as well as phenotypic variation. Now gingers have high ornamental demand and it has high potential in cut flower arrangements as well as in landscaping. Mutagenesis may induce some useful variation in them. An experiment was conducted using chemical mutagens for induced mutation in selected ornamental ginger species. The chemical mutagens used for the present study was ethyl methanesulphonate (EMS), acridine and colchicine. Experiments were conducted in different dosages of mutagens and washed with running water after regular intervals. The mutated and controlled plants are planted at the Calicut University Botanical Garden and the variations observed at maturity and data were recorded.

Key words

Chemical mutagens, Mutation, Ornamental gingers, Zingiberaceae

Research regarding the interaction genotype x technological factors in morphological features of chilli pepper cultivated in solaria at the Experimental Station of Timisoara, Romania

Poșta Gh.,^{1*} Balint M.¹

¹BUASVM "Regele Mihai I al României" from Timisoara, Faculty of Horticulture and Forestry

*Corresponding author. Email: posta.gheorghe@gmail.com

Abstract The history of bell pepper started 3,000-4,000 years ago, in Peru, in the old Inca Empire, whose civilisation used to practice a flowering agriculture. In a museum of Lima, Peru, they exhibited bell pepper fruits old a few thousand years and vases representing plants and bell peppers found during archaeological findings in Inca tombs.

Experiments carried out during 2012-2013 had a polyfactorial character; variants were set after the randomised block method with three replicates specific to experiments in forced protected areas of vegetable culture. Factor A (cultivar) with 5 graduations: a₁ – Délibáb F₁; a₂ – Sláger F₁; a₃ – Bolero F₁; a₄ – SJD 5; a₅ – SJN 5. Factor B (planting scheme) with 4 graduations: b₁ – 40+80x20 cm → 8,3 plants/m²; b₂ – 40+80x30 cm → 5,5 plants/m²; b₃ – 40+80x40 cm → 4,2 plants/m²; b₄ – 40+80x50 cm → 3,3 plants/m²

Unilateral statistic evaluation of the influence of genotype and of plant density on fruit length is distinctly significant on the background of significant influence of environmental conditions during the experimental years. Changing the planting distance per row from 20 to 30 and to 50 cm resulted in significant increase of fruit length of 8-18%. The combined effect of genotype and plant density had considerable influences (18.81%) on fruit diameter, a value that is distinctly significant. The bell pepper hybrid Bolero and the bell pepper line SJD 5 cultivated at a plant density of 8.3 plants/m² (80/40x20 cm) produce pulp thickness superior to that of the experimental mean.

Key words

Capsicum annuum L., pepper, morphological characters, solarium type.

The influence of soil salinity to chlorophylls and β-carotene contents in *Lycopersicon esculentum* Mill.

Tomescu D.^{1,2,*}, Sumalan R.², Soran Loredana³, Copolovici L.^{1,4}

¹Institute of Research, Development, Innovation in Technical and Natural Sciences of "Aurel Vlaicu" University, 2 Elena Dragoi St., 310330, Arad, Romania; ²Banat University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" from Timisoara, Calea Aradului 119, Timisoara, Romania; ³National Institute for Research and Development of Isotopic and Molecular Technologies, Donat 67-103, Cluj-Napoca 400293, Romania; ⁴Faculty of Food Engineering, Tourism and Environmental Protection, "Aurel Vlaicu" University, 2 Elena Dragoi St., 310330, Arad, Romania

*Corresponding author. Email: danyanchoujou@yahoo.com

Abstract Around 6-7 % of total land area and 20% of the irrigated land is affected by salinity, which means more than 800 million hectares of land are affected by salinity worldwide. Salinity affects around 1 million hectares in European Union which has been the main reason of desertification.

It have been shown that chlorophyll contents of all tomato varieties decreasing with soil salinity but some of landraces have a very high resistance to salt concentration than any commercial hybrid. The same trend have been demonstrated for leaves β-carotene content.

Key words

Salinity stress, tomato, chlorophyll, β-carotene

Researches regarding the adaptability for processing of potato variety in the form of chips

Mike Gabriella^{1*}

¹Potato Research and Development Station Targu Secuiesc

*Corresponding author. Email: mgabi1983@yahoo.com

Abstract Potato is a product of special importance worldwide, situating in the IVth position after maize, wheat and rice, being considered the second bread of mankind.

One of the most efficient and sure methods of potato sale is the processing in the form of chips. Chips are the most requested products in the market.

Chips of good quality must be golden brown in colour and uniform on the whole surface, as long as the oil content must be of less value, being under 30%. In order to obtain a finished product of a good quality it is necessary for the processing to be used special potato varieties: round or oval tubers, superficial eyes, smooth skin, starch content of > 17% and low reducing sugar content.

Key words

potato, chips, processing, starch, sugar

Researches concerning the influence of plant density, cultivars and sowing time on onion plants growth (*Allium cepa* L.)

Căprariu A. D*., Apahidean Maria And Apahidean A. I.

Department of Horticulture, University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania;

*Corresponding author. Email: alexandru.caprariu@gmail.com

Abstract Choosing the best onion cultivars has an overwhelming importance in increasing the economic efficiency of this crop. The main aim of the researches is to obtain high yields in onion bulbs for fresh consumption and for storing, contributing to the improvement of the culture technology by direct sowing in the Gherla area of two onion varieties. In our experiences were used as biological material two varieties of onion: Density 4 and Ramata rossa di Milano. The cultivar, plant density and sowing time influenced directly onion plants growth. Cultivar Density 4 achieved the at a density of two million plants/ha sown in autumn epoch highest height of 90,67cm. Cultivar, Ramata rossa di Milano, achieved the highest height of 80,33 cm at a density of two million plants/ha sown in autumn epoch. Density 4 is a very vigorous cultivar, with extra space needed for growth and Ramata rossa di Milano variety is a sensitive cultivars to strong winds.

Key words

direct sowing, growth, onion cultivars, plant density, sowing time

Results concerning the influence of storage conditions on the physiological degeneration and production potential of seed potatoes

Motica R.*, Baciú Anca, Nemes Zsuzsanna, Mike Luiza

Potato Research and Development Station Tg. Secuiesc, 15 Orbán Balázs Street, Târgu Secuiesc, Covasna County, Postal Code 525400

*Corresponding author. Email: poszto@yahoo.com

Abstract In the last decades special attention was paid to the research on factors influencing the physiological aging of seed tubers and the physiological effects on plant growth vigor and production.

Physiological age is proportional to the temperature sum accumulated during growth and development processes and storage period. The mechanism of physiological aging is still not entirely understood, but it is known that there is a close connection and is directly influenced by the period of tuber dormancy. In the experiment of 2012 six potato varieties were studied from the biological category Base Class Elite, which were early, medium-early and medium-late maturing varieties.

The results show that seed potatoes stored at lower temperatures produced higher yields than the ones stored at temperatures higher than 7 °C.

Key words

potato, seed tuber, temperature, variety

Research on the Use of Seed Preparation Methods for the Generative Production of Seedlings in the Species *Evodia danielii* (Benn.) Hemsl.

Poșta Daniela Sabina^{1*}

¹BUASVM "Regele Mihai I al României" from Timisoara, Faculty of Horticulture and Forestry

*Corresponding author. Email: posta.daniela@gmail.com

Abstract *Evodia danielii* (Benn.) Hemsl. is a tree 10 m high, with pubescent, red-brown shoots with large lenticels. The leaves have 7-11 folioles 5-10 cm ovate to oblong ovate, acuminate, rounded at the basis, light green on the underside, with 3-4 mm white flowers grouped into corymbs of 10-16 cm. The fruits are bivalve pods with brown-blackish, bright seeds.

The Genus *Evodia* covers about 50 species native from East-South Asia, Australia and Polynesia, two of which are cultivated in Romania. Ornamental species, they are appreciated for their delicate foliage and are recommended for large parks where the goal is to make the landscape sober. Their culture is successful on light soils, in harboured places. Multiplication can be done through seeds or grafting seedlings of *Phellodendron* [1].

Biometric measurements on seedlings concerned plant size.

The experiment was monofactorial and aimed at producing seedlings generatively using different methods of seed preparation.

Key words

Evodia danielii (Benn.) Hemsl., seeds, germination, preparation type

Evaluating the potential of a few barcode markers in identifying the species *Calluna vulgaris* (L.) Hull

Copaci Cristina-Mirela¹, Pocol Ioana-Gabriela¹, Căprar M. ¹, Sicora C. ¹

¹ Biological Research Center, Botanical Garden "Vasile Fatı" Jibou, Wesselenyi Miklos, no. 16, 455200, Jibou, Romania

* Corresponding author: cri441@netscape.net

Abstract *Calluna vulgaris* is an evergreen species belonging to the Ericaceae with a wide distribution. This species is ecologically resilient and can be found in a large range of habitats. The DNA barcoding method can be used for species identification being considered a complementary tool which supports the classical taxonomy. The method is based on using one or few short standardized DNA sequences, which are species-specific. We evaluated the utility of three such sequences for the identification of *Calluna vulgaris*: *matK*, *trnH-psbA*, and *rpoC1*. The current study investigated ten European populations of *Calluna vulgaris*, including a local population (Clif, Sălaj). For all samples the study found a lack of intraspecific variability for the *matK* and *rpoC1* markers. The PCR amplification for *trnH-psbA* did not work in standard conditions. The results suggest that *Calluna vulgaris* can be consistently and correctly identified using *matK* and *rpoC1*.

Key words

Calluna vulgaris (L.) Hull., DNA barcoding, *rpoC1*, *matK*, *trnH-psbA*

Results concerning extension of culture period at zinnias obtained in pot

Doltu Mădălina*, Sora D., Bogoescu M.

Research and Development Institute for Processing and Marketing of the Horticultural Products Bucharest

*Corresponding author. Email: doltu_mada@yahoo.com

Abstract The researches were conducted in zinnias culture at pots in greenhouse, for to watch a priority objective of the modern floriculture. The objective was to obtain plants in pots, quality and high culture period. The experience has included three varieties of zinnias: Oklahoma Scarlet (red flower), Oklahoma Pink (pink flower) and Oklahoma white (white flower), obtained from seeds from import. Production technology was applied to zinnias, taking into account the ecological requirements of species. The peak of growth was cut in two variants: after 2 true leaves, after 4 true leaves and without cutting (control). An optimal technology extends the culture period.

Key words

control, technology, *Zinnia elegans*

Research on the influence of crown shapes on growth and fruiting of apple cultivars in the superintensive system

Tărășescu Florina^{1,2*}, Burnaz R.¹

¹University of Craiova, Faculty of Agriculture and Horticulture, Department of Horticulture and Food Science, Str. Al. I. Cuza nr. 13, Craiova 200585, Romania; ² University of Craiova, SCDP Vâlcea, Str. Calea lui Traian nr. 464, Rm. Vâlcea 240273, Romania

*Corresponding author. Email: floricrai@yahoo.com

Abstract Apple is the most important fruit tree crop of the temperate zone. It is appreciated since ancient times and for this reason it is spread in culture in many countries.

The culture and especially architecture of crown are determinants for apple culture.

In order to establish proper crown shape for superintensive apple culture, we proposed to study 8 different crowns.

The varieties of apple, Florina and Idared in superintensive culture system and different crown shapes behaved differently in the growth and fruiting process.

The most productive shape of the crown has proven to be Solen, arising in yield of 35.0 t / ha.

Key words

apple culture, crown shape

Growth and fructification characteristic at apple hybrids with columnar port, resulted from various combinations and mutations, as compared to standard descendants

Lazăr Andreea M*., Baciu A.A.

University of Craiova

Corresponding author. Email: andreea_amicka2006@yahoo.com

Abstract In order to create a wide genetic variability as to obtain apple hybrids with columnar port, sexed hybridizations were performed using nine genitors as a mother. Out of the 11962 hybrid flowers, 2044 hybrid seeds were obtained, from which 715 seedlings resulted, a number of 210 plants being selected for the hybrid field.

Hybrid plants have different characteristics of growth. A number of 75 hybrids were columnar (35.7%), 15 with semi-columnar port (7.2%) and 120 present a standard port (57.1%).

Combinations in which the mother genitor were varieties KV 8 (59%), KV 42 (81.6%) and Trident (50.0%) achieved in descendance the largest number of plants with columnar port. In case of Starkrimson and Wagener-prized varieties, no columnar plants were obtained.

The gear ratio in progeny character was of columnar - 0.35 (35.7%); semi-columnar - 0.07 (7.2%); Standard - 0.57 (57.2%).

The transmission ratio in descendance of the characters was: columnar - 0.35 (35.7%); semi-columnar - 0.07 (7.2%); Standard - 0.57 (57.2%).

The highest ratio of columnar descendants occurred in the combination Wijcik x free pollination: columnar = 26 genotypes (0.49 to 49.0%); semi-columnar = 4 genotypes (0.08 – 7.5%); standard = 23

Key words

apple, hybrid combinations, genetic variability, columnar character

genotypes (0.43 to 43.5%).

In this case the transmission ratio was of 5.8 to 6.5 – 1.0. At the standard varieties Wagener – prized and Starkrimson with free pollination, no columnar descendants occurred.

In conclusion, we can say that this character is transmitted relatively easy in descendance and is dependent on the gene that gives this character, existent in one or both parents.

Study of the effect of several natural fertilizers on the seedlings leaf area for some tomato cultivars

Moisă R.*¹, Berar V.¹

¹ USAMVB Timisoara, Faculty of Horticulture and Forestry

*Corresponding author. Email: radu.agragelu@yahoo.com

Abstract Leaf area distribution in a tomato canopy is important for maximizing plant photosynthetic capacity and protecting developing fruit from excessive exposure to solar radiation. The initiation of main leaves in tomato is regulated by environmental factors such as temperature, light and nutrition. The aim of this work was to investigate the effect of four natural fertilizers on the leaf area of seedlings from three tomato hybrids.

Under the application of treatments with Cropmax and poultry manure, the highest deviations between hybrids in terms of the leaf area have been manifested, while for the variants treated with Lithovit and Zoldpajzs the leaves development was not influenced by the genotype. The seedlings of Alfred hybrid have used at a significantly higher level the treatments with poultry manure and Cropmax, registering an increase of leaf area from 65 to 121% to other hybrids. The treatments with fertilizers have shown the highest effect on the development of foliage at the seedlings of Alfred hybrid. In the case of ZFW738 hybrid, the treatment with poultry manure was significantly more effective with approximately 31 % to the treatment with Cropmax.

Key words

tomato cultivars, seedlings, leaf area, natural fertilizers

Researches regarding the growth of tomato seedlings under different treatments with natural fertilizers

Moisă R*¹., Berar V.¹

¹ USAMVB Timisoara, Faculty of Horticulture and Forestry

*Corresponding author. Email: radu.agragelu@yahoo.com

Abstract The production of tomato seedlings is the first and the most sensitive phase in the production process. The seedling phase of the tomato is the basic phase of growth and development, and significantly affects the total production of the plant, especially earliness of production and number of fruits per plant. The objective of this paper was to assess the potential of four natural fertilizers (Lithovit, Zoldpajzs, Cropmax and poultry manure) for growing the seedling of three tomato hybrids (Alfred, ZFW738 and Falcato).

The studied hybrids have had a high significant effect of 48.36% on the variability

Key words

tomato, seedlings growth, natural fertilizers

of seedlings height, while the effect of treatment was significantly lower (1.17%). The hybrids have not been significantly differentiated in terms of their reaction to the treatment with poultry manure and Cropmax. The seedlings of Falcato hybrid submitted the highest level of growth under the application of Lithovit, significantly upper the results of Zoldpajzs. The treatment with natural fertilizers had little and insignificant influence on the growth of seedlings for Alfred and ZFW738 hybrids.

Medicinal plants propagation development on pilot substratum observed with open source cad software's

Singureanu V.¹, Sestraş R.¹, Moldovan G.¹, Ungur Rodica², Onac I.², Singureanu Victoria³

¹University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, 3-5 Mănăştur Street, Romania;

²Iuliu Haţieganu University of Medicine and Pharmacy Cluj-Napoca, Babeş Street, No. 8, Romania;

³Rehabilitation Clinical Hospital Cluj-Napoca, Viilor Street, No. 46-50, Romania

*Corresponding author: singvalentin@gmail.com

Abstract In order to produce constant medicinal plants yields, the nursery sector must be diversified and directly related to producer needs. The paper focuses on new propagation approaches of medicinal plants on reusable organic substrate (water retaining starch polymers + granular perlite mixture 2:4). The experimental propagation method consisted in edge cutting usage due to its genotypic conservation. The experimental plot was emplaced in a standard greenhouse located in U.S.A.M.V. Cluj-Napoca between 4.09.2014 - 9.10.2014 considering it as research extension study on the same biological material in 2013. The experimental plot design was a 3 factor randomized plot with 4 replications as follows: biological material: *Salvia officinalis* L.- control, *Mentha × piperita* L. and *Rosmarinus officinalis* L.; propagation substratum: perlite (control) and water retaining starch polymers + granular perlite mixture 2:4; shading method: unshaded experimental variants (control), shaded experimental variants. Environmental factors were observed in dynamic with a digital multimeter that recorded light intensity (lux), light spectrophotometry, environmental temperature (°C), substrate temperature (°C) and relative humidity (%). At the end of the experiment, cuttings where photographed and imported in specific open source 3D software that helped the research team to investigate level of development generating an accurate 3D model of the cutting with a specific color diffusion map. Overall biological materials reacted different to types of substratum used: unshaded experimental variants propagated on water retaining starch polymers + granular perlite mixture 2:4 at *Mentha × piperita* L. obtained 100% rooting propagation; *Rosmarinus officinalis* L. and *Salvia officinalis* L. obtained optimum rooting percent on unshaded experimental variants propagated on perlite substratum. Even if water retaining starch polymers where used in a perlite mixture for oxygen permeability reasons, secondary roots suffered from water excess and lack of oxygen. The shading material reduced the light, reducing the propagation rate on *Rosmarinus officinalis* L. and *Salvia officinalis* L.

Key words

propagation, polymer, medicinal plants, open source, spectrophotometry

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

Velicevici Giancarla^{1*}, Madosa E.¹, Ciulca Adriana¹, Petolescu Cerasela¹, Camen D.¹, Cretescu Iuliana², Malaescu Mihaela¹, Oproi E.¹

¹University of Agricultural Sciences and Veterinary Medicine of Banat ,, King Michael I,, of Romania from Timisoara , Faculty of Horticulture and Forestry, Aradului Street 119, Timisoara, Romania; ²“Victor Babes” University of Medicine and Pharmacy, Department of Functional Sciences, Timisoara, Romania

* Corresponding author: giancarlavely2000@yahoo.com

Abstract 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 proline 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 value of "trans" heterosis have been registered from Adi x DH 260-18 and Adi x Djerbel combinations, that have submitted significant increases in this indicator and high values of "trans" heterosis associated with good resistance to drought. The lowest values of heterosis "cis" were observed in: Andrei x Djerbel (-8.99) combinations. The effects of parents and crosses were significant for proline content, this indicated the presence of variability among hybrids and their parents, for this trait.

Key words

barley, genetic analysis, proline

Influence of NaCl concentration on the roots growth in some wheat (*Triticum aestivum* L.) cultivars under laboratory conditions

Velicevici Giancarla^{1*}, Madosa E.¹, Ciulca Adriana¹, Petolescu Cerasela¹, Camen D.¹, Cretescu Iuliana², Malaescu Mihaela¹, Oproi E.¹

¹University of Agricultural Sciences and Veterinary Medicine of Banat ,, King Michael I,, of Romania from Timisoara , Faculty of Horticulture and Forestry, Aradului Street 119, Timisoara, Romania; ²“Victor Babes” University of Medicine and Pharmacy, Department of Functional Sciences, Timisoara, Romania.

*Corresponding author. Email: giancarlavely2000@yahoo.com

Abstract The objective of the present study was to evaluate the roots growth dynamics as an early stage screening criterion for characterization of salt tolerance in wheat. The studied biological material consisted of four wheat varieties with different genetic and ecologic origin. Salt stress was induced by NaCl solutions, in different concentrations (150m, 200mM.). Determinations of roots growth were effectuate after a periods of 7/14/ and 21 days from the induction of osmotic stress. Root growth was significantly reduced by , 200mM concentration.

Key words

wheat, salt stress, rooth growth

Research concerning the effect of some growth stimulators on the plants height of certain *Lisianthus* varieties

Crăciun (Nan) Cristina^{1*}, Băla Maria¹

¹ Banat's University of Agricultural Sciences and Veterinary Medicine Timisoara, Faculty of Horticulture and Forestry

*Corresponding author, email: nan_christina@yahoo.com

Abstract The need to study the species *Lisianthus exaltatum* comes from the permanent wish to diversify cut flower cultivars and meet the increasing demands of the market. To do so, we need to study the different cultivation technologies of the species *Lisianthus exaltatum* to produce plants with longer stems, with larger flowers and with larger numbers of floral buds in modern green houses. This study concerns four cultivars of *Lisianthus exaltatum* cultivated in green house monitored from tie stage of seed to the end of vegetation. We monitored growth features in the four hybrid cultivars (Twinkles Dark Blue, Arena Series Red, Arena Series Rose, and Heidi Salmon) with application of four types of biological fertilisers (Lithovit, Zoldpajzs, Cropmax and Biofluid).

Key words

Lisianthus varieties, growth stimulators, plants height, growing period

Study of the dynamics of *Lisianthus* plant growth during the growing period

Crăciun (Nan) Cristina^{1*}, Băla Maria¹

¹ Banat's University of Agricultural Sciences and Veterinary Medicine Timisoara, Faculty of Horticulture and Forestry

*Corresponding author, email: nan_christina@yahoo.com

Abstract The need to study the species *Lisianthus exaltatum* comes from the permanent wish to diversify cut flower cultivars and meet the increasing demands of the market. To do so, we need to study the different cultivation technologies of the species *Lisianthus exaltatum* to produce plants with longer stems, with larger flowers and with larger numbers of floral buds in modern green houses. This study concerns four cultivars of *Lisianthus exaltatum* cultivated in green house monitored from tie stage of seed to the end of vegetation. We monitored growth features in the four hybrid *Lisianthus* cultivars (Twinkles Dark Blue, Arena Series Red, Arena Series Rose, and Heidi Salmon) with application of four types of biological fertilisers (Lithovit, Zoldpajzs, Cropmax and Biofluid). The goal of the research was to show the efficacy of the treatment with different fertilisers on plant height in the studied cultivars. It was also to investigate the effect of some growth stimulators on plant height in four cultivars of *Lisianthus* to establish plant technological requirements per vegetation stages.

Key words

Lisianthus cultivars, biological fertilisers, dynamics of plant growth, vegetation period

The content in macroelements (Na, K, Ca and Mg) of some vegetables collected from Rachita locality, Timis County

Heghedúş-Mîndru Ramona Cristina*

Banat's University of Agricultural Sciences and Veterinary Medicine „King Michael I of Romania” from Timisoara, Aradului Street No.119, RO – 300645, Timisoara, Romania.

*Corresponding author. Email: ramo75ro@yahoo.com

Abstract In this study were evaluated in terms of content in (Na, K, Ca and Mg) from six samples vegetables collected from the Rachita locality, Timis county. The selected vegetables was: Cabbage (*Brassica oleracea var capitata*) Bell Peppers (*Capsicum annum*), Tomatoes (*Lycopersicon esculentum*), Potato (*Solanum tuberosum*), Carrots (*Dacus carota subsp. Sativus*) and Onion (*Allium cepa*). Vegetables samples were subjected to the process of cleaning, drying oven, mineralization dry, wet mineralization. The content of macroelements in the vegetable samples analyzed was determined by atomic absorption spectrophotometry method. The equipment used was a type SpectrAA Variant FS 380. The values obtained were reported in mg/Kg dry matter.

Key words

macro elements, atomic absorption, vegetables

The content in macroelements (Na, K, Ca and Mg) of some fruits collected from Rachita locality, Timis County

Heghedúş- Mîndru Ramona Cristina¹, Heghedúş- Mîndru G^{1*}, Negrea P², Şumălan R.L.,¹ Ştef D.S.¹

¹Banat's University of Agricultural Sciences and Veterinary Medicine „King Michael I of Romania” from Timisoara, Aradului Street No.119, RO – 300645, Timisoara, Romania; ²Politehnica University Timisoara, Faculty of Industrial Chemistry and Environmental Engineering, P-ta Victoriei No. 2, RO - 300006, Timisoara, Romania

*Corresponding author. Email: gabone2003@yahoo.com

Abstract This paper presents the macroelements evaluation content (Na, K, Ca and Mg) for some fruit samples. Fruit samples were collected from the Rachita locality, Timis county. The fruits analyzed were: Peach (*Prunus persica*), Apples (*Malus domestica*), Cherry (*Prunus avium*), Sour cherry (*Prunus Cerasus*), Plums (*Prunus*) and Grapes (*Vitis vinifera*). Fruit samples were subjected to cleaning process, removing water, dry ashing and wet. The solutions obtained were analyzed using standard equipment SpectrAA Variant FS 380. The values obtained are reported in mg / kg dry matter.

Key words

atomic absorption, fruits, calcium, magnesium, potassium, sodium

Research on the interaction genotype x technological factors in some morphological features in Macău onion bulbs cultivated in the vegetable basin Belinț (Romania)

Balint M.,^{1*} Poșta Gh.¹

¹BUASVM "Regele Mihai I al României" from Timisoara, Faculty of Horticulture and Forestry

*Corresponding author. Email: balint_marius_viorel@gmail.com

Abstract Onion has been cultivated for about 5,000-6,000 years. Tackholm and Draw mention as proofs of using onion were found in some tombs from 3,200 BC. It is mentioned in both the Bible and the Quran. Onion was cultivated in Ancient Egypt (6,000 BC), from where it passed to Ancient Greece and then to Ancient Rome. In Antiquity, it was used as both food and medicine.

Key words

Allium cepa L., Macău onion bulbs, morphological characters

The biological material used in the experiment was represented by two onion forms: Dughagyma Csanad IIO and Dughagyma Makoi CR, developed by the Research-Development Station in Onion from Makó, Hungary.

Phenotypical expression of onion bulb diameter as very significant differences compared to the control variant (experimental mean) is considerably influenced by onion bulb diameter (over 20 mm) and by the interaction between planting time and genotype.

There were very significant differences of the onion bulb diameter compared to the control variant in the onion genotype Dughagyma Csanad IIO using onion bulb for planting measuring 0 mm in diameter and applying 600-700 kg raw matter/ha chemical fertiliser.

Specific management measures for the forest habitats 91Q0 – Calcicolous *Pinus sylvestris* forests and 9530* - Sub-Mediterranean forest with endemic *Pinus nigra* ssp. *banatica*

Merce O.^{1*}, Biriș I. A.², Turcu D. O.¹, Cântar I. C.¹, Cadar N.¹

¹Forest Research and Management Institute – Timișoara branch; ²Forest Research and Management Institute București

*Corresponding author. E-mail: oliver_merce@yahoo.com

Abstract The Natura 2000 network is not a system of protected areas where human activities are systematically excluded. The network is based on the principle of sustainable development; the human activities, within the framework of Natura 2000, are undertaken in a way that protects the species and the habitats for which the respective site was designated [6]. The forest habitats 91Q0 – Calcicolous *Pinus sylvestris* forests and 9530* - Sub-Mediterranean forest with endemic *Pinus nigra* ssp. *banatica* found in the alpine and continental bioregions. Due to the fact that these two habitats are located mainly on high slope terrain, rocks and scree, the timber harvesting is not recommended.

Key words

the 91Q0 habitat, the 9530* habitat, management, Natura 2000

Characteristics of the seedlings layer from the “Runcu - Groși” Nature Reserve

Merce O.^{1*}

¹Forest Research and Management Institute – Timișoara branch

*Corresponding author. E-mail: oliver_merce@yahoo.com

Abstract The regeneration of the virgin forest it realised through the seedlings layer, only when the tree layer (the canopy) is rare enough to permit the penetration of light to the soil. Within the “Runcu Groși” Nature Reserve, the biometric characteristics of the seedlings layer were studied. The research were undertaken using a network of 41 plots, circular in shape, of 1000 m² each; within each research plot, 4 circular sub-plots of 3.14m² were placed using the cardinal directions (North, East, South and West). Thus, the seedlings of 10 tree species was inventoried and a distribution of the seedlings layer by height and cardinal directions was built. Most exemplars are beech and are within the first height category, < 1.3 m. Regarding the distribution of exemplars in the circular sub-plots, the largest number of seedlings is located in the Eastern sub-plots.

Key words

Seedlings layer, Runcu-Groși, beech, sessile oak, virgin forests

Physiological responses of Norway spruce (*Picea abies* [L.] Karst) seedlings to drought and overheating stress conditions

Miron M.S.^{1*}, Sumalan R. L.¹

¹Banat University of Agricultural Sciences and Veterinary Medicine “King Michael I of Romania” from Timisoara, Calea Aradului 119, Timisoara, Romania

*Corresponding author. Email: plantphysiology.ro@gmail.com

Abstract The authors studied the effects of drought on soil and of overheating on some physiological parameters in 4-year Norway spruce seedlings (*Picea abies* [L.] Karst) from three different sources. Half of the seedlings were inoculated with *Rhizophagus irregularis*. Stress induction in the seedlings (inoculated and not inoculated) was done under controlled conditions (greenhouse) by cutting watering and increasing temperature for 16 days (1st stage), followed by rehydration and stress resuming for other 15 days (2nd stage). We sampled and analysed during dynamics to determine assimilating pigments (a and b classes and carotenoids) and free proline in the leaves (needles). Stress conditions caused a reduction of the amount of assimilating pigments and a decrease of free proline in the foliar apparatus of Norway spruce seedlings. The variants inoculated supplementarily had a higher ability of adapting to induced stress conditions

Key words

Norway spruce, drought, overheating, assimilating pigments, free proline.

Researches concerning the yield traits variability of some paprika cultivars

Bere Semeredi A. A.^{*1}, Berar V.¹

¹ USAMVB Timisoara, Faculty of Horticulture and Forestry

*Corresponding author. Email: adibere@gmail.com

Abstract The dry paprika fruits are generally used for pungent or non-pungent red powder, and also as colorant, for flavoring and garnishing different food products. The biological material was composed from eight cultivars with different genetic origin. At the technical maturity, there were made measurements on the fruits number, fruits weight, and fruit yield of each plant. This experiment was designed that using the results on different morphological traits to find the suitable cultivars for growth and yield of paprika under the agro-climatic conditions of Timisoara.

For all three traits included in the study it appears that there are real and significant differences, between paprika cultivars. The most pronounced differences between cultivars were recorded for the fruit number/plant. The heterogeneity between cultivars had a contribution of 36.28% on the yield per plant throughout the experience, while in terms of fruits weight the differences were lower but statistically ensured. The most productive plants were found at the Slager hybrid and Favorit variety that have achieved very significant increases compared with the other genotypes, from 20.90 to 88.13 %. The significant differences between the varieties of Kalocsai, indicate that they have a different potential to harness the technological and ecological conditions of the crop, amid a different genetic origin.

Key words

paprika, cultivars, yield, variability

Assessment of the phenotypic diversity between some paprika cultivars for yield traits

Bere Semeredi A. A.^{*1}, Berar V.¹

¹ USAMVB Timisoara, Faculty of Horticulture and Forestry

*Corresponding author. Email: adibere@gmail.com

Abstract The importance of paprika crop is revealed by the fact that paprika powder is the most widespread and popular spices, being used in a wide range of dishes. Regarding the content in vitamin C, paprika occupies first place between the cultivated vegetables. The biological material was composed from eight cultivars with different genetic origin. The objectives of this work were to evaluate the phenotypic diversity between paprika cultivars for yield traits, with a view to optimize the technology of this crop to maximize the expression of traits with major contribution to the achievement of yield.

Taking in to account the diversity between genotypes, these eight cultivars are major differentiated in terms of their ability to harness the technological and environmental conditions of the crop. For Favorit variety and Bolero hybrid the achievement of the plant yield is based on an average number of large fruit per plant, while for Delibab hybrid it is found a large number of fruits, with an upper length, thin and a smaller weight. At Kalocsai varieties and Rubin it was observed a small fruits number, short, bold and with a higher weight. The hybrid Slager achieved a large number of long and thin fruits, while the variety Favorit yielded on the basis of a small number of short fruits, thicker and with a high weight.

Key words

paprika, cultivars, phenotypic diversity, yield

The typological analysis of the forest and diversity of indicator flora in Unit of Production V Luncani - Stâlpu

Moatăr Mihaela¹, Ștefan Carolina¹, Foră C.¹, Banu C.¹, Stanciu S.²

¹Faculty of Horticulture and Forestry Timișoara; ²Faculty of Farm Management

*Corresponding author. Email: mihaelamoatar@yahoo.com

Abstract Research indicator flora, despite its millennial history, continues to preserve freshness, sparking an interest. Exploring systematic seasonal territory studied, allowed us a detailed knowledge the taxonomic, ecological, chronology of UP Luncani-Stâlpu amid through knowledge of the flora and vegetation peculiarities of this geographic area. Our scientific approach, developed on the basis of appropriate protocols, inspired by literature, has completed an inventory of all plants and preparing a draft indicator measures aimed at the effective and rational use of flora and vegetation, in order to preserve it.

Key words

indicator flora, ecological factors, vegetation, protected area

Characterization of the arboreal vegetation from Dendrological Park Bazoș, Romania, based on satellite images

Herbei M.V.^{1*}, Sala F.²

¹Cartography and GIS, Banat University of Agricultural Sciences and Veterinary Medicine, "Regele Mihai I al României" from Timișoara, Calea Aradului 119, 300645, Timișoara, Romania, Phone:+40722 751782, Fax:+40256 200296, Email: mihai_herbei@yahoo.com; ² Soil Science and Plant Nutrition, Banat University of Agricultural Sciences and Veterinary Medicine, "Regele Mihai I al României" from Timișoara, Calea Aradului 119, 300645, Timișoara, Romania, Phone:+40256 277280, Fax:+40256 200296, Email: florin_sala@usab-tm.ro

*Corresponding author: Herbei M., e-mail: mihai_herbei@yahoo.com

Abstract Remote sensing is an easy way to analyze vegetation in terms of structure, the degree of development and health, biomass production, providing information for decision making in real time. The purpose of this study is creating a spectral analysis of arboreal vegetation in Dendrological Park Bazoș, Romania. The survey is based on Landsat 8 satellite images, over a period of 258 days including inactive and active growing time periods. From the analysis of satellite images we obtained the spectral bands R, G, B and IR (NIR, MIR) based on which the indices NDVI, NDBR and NDMI were calculated used in the characterization of the arboreal vegetation. Indices NDVI, NDBR and NDMI have recorded minimum values during the inactive vegetation periods and they had an ascending distribution in the early stages of active vegetation, over the course of March and April. They recorded maximum values in the month of May (NDBR and NDMI) and in June-July for NDVI, and then beginning with August –September there has been a descending distribution of vegetation indices characterization. Indices distribution regarding the duration in days for the study period was described in polynomial function of 4th range, in terms of statistical certainty (NDVI: $R^2 = 0.953$, $p < 0.01$; NDBR: $R^2 = 0.965$, $p < 0.01$; NDMI: $R^2 = 0.926$, $p < 0.01$). Based on the spectral data from NIR band the prediction of the studied indices was done with high statistical certainty: NDVI vs NIR ($R^2 = 0.896$, $p = 0.13$; $F = 24.97$; $RMSEP = 0.0379$); NDBR vs NIR ($R^2 = 0.922$, $p = 0.015$; $F = 82.59$; $RMSEP = 0.0166$); NDMI vs NIR ($R^2 = 0.984$, $p = 0.016$; $F = 24.68$; $RMSEP =$

Key words

GIS, forest, spectral information, NDVI:NDBR report

0.0138). The report of the indices NDVI:NDBR reveal subunit values (0.702 – 0.858) in the inactive vegetation period and over-unity values (1.015 – 1.181) in the active arboreal vegetation periods for the studied area. Multivariate analysis facilitated the grouping of the variables into two distinct clusters with three sub-clusters regarding the spectral properties of arboreal vegetation, cophenetic index value is 0.776.

Research on spontaneous and subsponaneous flora of Botanical Garden "Vasile Fati" Jibou

Szatmari P-M*.¹, Căprar M.¹

¹)Biological Research Center, Botanical Garden "Vasile Fati" Jibou, Wesselényi Miklós Street, No. 16, 455200 Jibou, Romania;

*Corresponding author. Email: paul_marian87s@yahoo.com

Abstract The research presented in this paper had the purpose of inventory and knowledge of spontaneous and subsponaneous plant species of Botanical Garden "Vasile Fati" Jibou, Salaj, Romania. Following systematic investigations undertaken in the botanical garden a large number of spontaneous taxons were found from the Romanian flora (650 species of vascular plants and 20 species of moss). Also were inventoried 38 species of adventive plants, permanently established in Romania and 176 vascular plant species that have migrated from culture and multiply by themselves throughout the garden. In the garden greenhouses were found 183 subsponaneous species and weeds, both from the Romanian flora as well as tropical plants introduced by accident. Thus the total number of wild species rises to 1055, a large number compared to the occupied area. Some rare spontaneous plants and endemic to the Romanian flora (*Galium abaujense*, *Cephalaria radiata*, *Crocus banaticus*) were found. Cultivated species that once migrated from culture, accommodated to environmental conditions and conquered new territories; standing out is the *Cyrtomium falcatum* fern, once escaped from the greenhouses it continues to develop on their outer walls.

Key words

Jibou Botanical Garden, spontaneous flora, adventive and subsponaneous plants, floristic analysis, Romania

Study on wine grape varieties worldwide and in Romania: a Review

Boc R. D.¹, Dobrei A.¹

¹USAMVB"Regele Mihai I al României" from Timisoara, Faculty of Horticulture and Forestry

*Corresponding author. Email: ghitaalina@yahoo.com

Abstract Despite the favorable conditions for the cultivation of vines and retraining measures, Romania, the sixth largest wine producer in the European Union is sending abroad only 3% of the domestic production, far behind countries such as France or Italy. This study refers to some very important aspects for growing wine grape varieties from economic and social, food and medical perspectives as well. This covers: the genesis of wine, wine importance as food production and consumption of wine worldwide and in Romania, the content of anthocyanins in red wine grape varieties.

Wine, throughout its evolution, having been compared to a being who is born, lives and dies, has had a major influence in areas with direct or indirect contribution: economic, social, religious, cultural and commercial [18].

Key words

wine grape varieties, wine genesis, consumption of wine, alcohol, phenolic compounds

A study of alignments of trees from Timisoara

Silivăşan M.^{1*}, Berar C.¹

¹Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" from Timișoara, Faculty of Horticulture and Forestry

*Corresponding author. Email: marius_silivasan@yahoo.com

Abstract The studied alignments are situated along the important streets and boulevards from Timișoara and contribute to its embellishing. The species of trees are various : *Liquidambar styraciflua*, *Robinia pseudoacacia*, *Prunus mahaleb*. The studies of green cadastral survey evidenced many characteristics of trees as the category of age, category of height, landscaping value, volume of useful trunk, volume of standard coronet and the global value of the tree (1). The necessary works are specified for every alignment.

Key words

tree, alignment, green survey, coronet

Study on vegetation landscaping value in some squares from Timisoara

Silivăşan M.^{1*}, Berar C.¹

¹Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" from Timișoara, Faculty of Horticulture and Forestry

*Corresponding author. Email: marius_silivasan@yahoo.com

Abstract The amplacement of the square and its relation with the rest of the city is essential. A comparison between the squares of Timisoara is needful to turn to good account their qualities and to identify the things to be done. As unity of green area, the square has different functions : passing, recreation, playing. The landscaping value of squares derives from the special vegetation, from functionality, from presence and aspect of objects of furniture.

Key words

trees, square, functions, landscaping value

Study regarding the influence of bacterial strains on improvement of plants for salt tolerance

Schmidt Brigitta^{*1}, Şumălan R.¹, Samfira I.¹

¹Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I st of Romania" from Timisoara, Calea Aradului 119, 300645, Timisoara, Romania

*Corresponding author. Email: brigischmidt@yahoo.com

Abstract Three salt tolerant bacterial strains collected from Romanian saline soils were assessed for their influence on tolerance of plants to osmotic stress during germination. Seeds were germinated in Petri dishes in sterile conditions for 16 days. Three variants of saline solutions were used: 0mM, 100mM and 130 mM NaCl and seeds of three local landraces of tomatoes were tested (Cruceni 102, Sanmartinu Sarbesc, Tarnova 673). The

Key words

tomato local landraces, salinity, growth promoting bacteria

germination of seeds was 100% when no NaCl was used, meanwhile salinity affected mostly when concentration was the highest. The tomato landrace with the highest germination rate (100%) at 130mM NaCl solution, without any inoculation of bacteria proved to be Sanmartinu Sarbesc. The tomato landraces had a different response to inoculation with bacterial strains. The best combination of tomato landrace-bacterial strain was Tarnova 673-Rh1. Further tests are planned to assess the best combination of tomato landrace-bacterial strain in order to be used in future development of integrated agricultural products.

Benefits of arbuscular mycorrhiza on development of marigold in different nutritional conditions

Schmidt Brigitta*¹, Şumălan R.¹, Samfira I.¹

¹Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I st of Romania" from Timisoara, Calea Aradului 119, 300645, Timisoara, Romania

*Corresponding author. Email: brigischmidt@yahoo.com

Abstract Mycorrhizal interactions are some of the most wide-spread symbiotic relationships on Earth, being formed by the roots of terrestrial plants and some specific edaphic fungi. It contributes to phosphorous acquisition, water absorption and resistance to diseases. The aim of the study was to determine the effects of arbuscular mycorrhizal (AM) fungi on growth and phosphorous nutrition of marigold (*Tagetes* sp.), frequently used in urban gardens as decorative plant. As AM contributes to a better phosphorous absorption of the host plant, we determined the effects of this symbiotic association by measuring the growing rate, development, plants' height and weight (biomass), also determining some physiological indexes, as transpiration, leaf area, chlorophyll content and dry matter. The results indicate that the greatest differences between mycorrhizal and non-mycorrhizal plants appear when the substrate is poor in phosphates. Also, mycorrhizal plants had a higher leaf area, biomass and a lower rate of transpiration per unit of leaf area.

Key words

arbuscular mycorrhiza, marigold, *Glomus* ssp., physiological parameters

The influence of fertilization and weed control methods on hybrid maize PR 35 P 12

Turc Alina¹, Cârciu G.¹

Faculty of Horticulture and Forestry, USAVMB "King Michael Ist of Romania" from Timișoara

*Corresponding author. Email: doobra.alina@yahoo.com

Abstract This scientific paper is part of both sustainable and economical rural development. This aspect is reflected in the possibility of increasing crop yield per hectare of maize and reduces environmental pollution by using new strategies for weed control strategies that significantly decreases the amount of herbicide per unit area.

Key words

grain corn, hybrids corn, fertilizers and organic chemicals, herbicides, weed mapping, statistical processing.

Influence of fertilisation and of weed control methods on yield in the maize hybrid pr35p12

Turc Alina^{1*}

¹Banat's University of Agricultural Science and Veterinary Medicine, Faculty of Horticulture and Forestry

* Corresponding author. Email: dobra.alina@yahoo.com

Abstract Research in the maize hybrid PR35P12 in the two experimental years confirmed, once more, the biological value of this hybrid. Applying proper technology – fertilisation and weed control – allowed proper yields. In 2005, increases in yield compared to the control variant oscillated between 13.40 q/ha and 53.46 q/ha, respectively. The highest yield (88.51 q/ha) were in the variant fertilised with N₁₃₅P₁₃₅K₁₃₅. In 2006, after fertilisation, yield reached 92.82 q/ha in the variant treated with N₁₃₅P₁₃₅K₁₃₅. Increases in yield compared to the control variant (b₁) oscillated between 14.48 q/ha and 57.66 q/ha.

Key words

grain maize, maize hybrids, chemical and organic fertilisers, herbicides, weeds, mapping, fertilisation, statistic processing.

Lime trees in green areas of Timisoara

Țenche-Constantinescu Alina-Maria¹ Borlea Gheorghe Florian¹ Szekely Gabriel¹ Hernea Cornelia¹ Madoșă Emilian¹

¹Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" of Timișoara

*Corresponding author. Email: fborlea@yahoo.com

Abstract Using *lime trees* in park designs and for streets alignments is very common in Timișoara and the number of *Tilia* spp individuals has grown considerably during the last decade. The studies had as a goal to make evident the importance of *Tilia* spp. which exist in some of the green areas of Timișoara. With this purpose are identified and described the *Tilia* spp which are present in some parks of central Timișoara, (*Central Park, Justiției Park, Copiilor Park, ILSA Park, Centrul Civic Park, Alpinet Park, Stadion Park, Lidia Park, Botanical Park, Crucii Park and Poporului Park*) due to their **age, ecological value (VE)** and **landscape value (VP)**. Also have been studied the *Tilia* spp, planted since 2007 in street alignments in certain districts of the town, which are dominated by housing units. It was observed that numerous newly introduced *Tilia* spp cultivars exist, which shows the growing interest of the citizens for these trees. Good ecological and landscape values are a strong arguments for the use of *Tilia* spp. in the green spaces that will be planned in Timișoara.

Key words

Tilia spp, green areas, streets alignments, ecological value, landscape value

The symbolism of the linden tree

Tenche-Constantinescu Alina-Maria¹ Varan Claudia² Borlea FI.¹ Madoşa E.¹, Szekely G.¹

¹Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" from Timișoara; ²West University of Timisoara Faculty of Geography

*Corresponding author. Email: clau_varan23@yahoo.com

Abstract This paper presents in a synthetic manner aspects regarding the importance of the trees in the cultural and spiritual life of the civilizations during the history. The organic link between humans and wood, as a primordial material can be found in *the oral creation and beliefs of the traditional craftsmen*, in different symbols and rituals during the centuries. *Linden trees* have a special place in **symbolism** (*sacred tree*, the tree that is a symbol of love, fertility, prosperity, fidelity, friendship, peace, justice, altruism, good luck) and also in the **popular traditions** due to the positive aspects (healing trees, protective trees, trees that are keeping away the diseases and the evil spirits). Their numerous usage as universal and renewable raw material, (wood, bark, fiber), medicinal plant, one that is important in beekeeping and also as ornamental trees, are well known. In this respect the *symbolism of the linden tree* is detailed in the *traditional religious doctrines, astrology, legends and folklore*. The linden tree is presented as a *Romanian cultural and literary symbol* in various situations. There are also described some linden trees with an important local symbolic value.

Key words

linden trees, symbol, legends, traditions, culture

Hydromorphological pressures identified in the hydrographic basins Timis and Bega - threats for the species *Chondrostoma nasus* (L.)

Tenche-Constantinescu R.V.¹, Borlea Gh. F.¹, Tenche-Constantinescu Alina-Maria^{1*}, Tenche M. I.²

¹Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" from Timisoara; ²National College of Banat Timisoara

*Corresponding author. Email: consta_alina@yahoo.com

Abstract *Chondrostoma nasus* is one of the most common fish species of the family Cyprinidae living in the rivers of Western Romania. The morphological characters of the nase confers it adaptability for fast swimming. This gregarious species prefers to live in flocks in the places where the streams are not so strong, near the dikes and it has a substantial advantage due to the present local conditions in comparison to the other species in the rivers Timis and Bega. After the age of four they begin to migrate in the superior area of the rivers where they are spawning. The existing hydromorphological pressures can endanger the *C. nasus* species in the local area as it happens in other regions of Europe. In order to study this, the present situation in the rivers Timis and Bega on the aspect of the existing threats upon the studied species is analyzed and measures for reducing the threats are proposed.

Key words

Chondrostoma nasus, hydrographic basin, hydromorphological pressures, habitat fragmentation