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BOTANY AND PLANT PHYSIOLOGY

RESEARCH REGARDING THE PHYSIOLOGICAL AND BIOCHEMICAL PROCESSES ON *ORIGANUM* SP.

I. BURZO, LILIANA BĂDULESCU, LILIANA SIMIONESCU

Keywords: *Origanum* sp., photosynthesis, respiration, transpiration, minerals, dry matter, pigments

ABSTRACT

Origanum vulgare is a species with a large extent in shrubberies, underwoods and forest glades, as far as the subalpine zone.

The world references emphasise the practical aspects, namely the active compounds and their composition depending on the tissues and variety, as well as their applicability. The *Origanum* volatiles, especially carvacrol, have an antimicrobial and antioxidant activity, which confers the plant' extracts useful proprieties as: antiseptic, antipyretic, antihelminthic, antioxidant, expectorant. The vegetal extracts enriched in β-cariophylene have the antiasmatic, antimicrobial, antiinflamator effects and those enriched in terpineol have important proprieties as antiasmatic, antimicrobial, diuretic and antiallergenic (1,2,3,4).

As a consequence, there is few data regarding the intensity of physiological processes, and this paper intends to characterise some aspects concerning the *Origanum* physiology.

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ASPECTS REGARDING ORNAMENTAL POTENTIAL OF WILD FLORA SPECIES

MIHAELA IOANA GEORGESCU, C. BĂDULEŢEANU,
VASILICA PALANCIUC, ELENA SĂVULESCU

Key-words: Wild flora, *Anthyllis vulneraria* subsp. boissieri, *Aster oleifolius*, *Euphorbia glareosa* subsp. dobrogensis, *Hedysarum grandiflorum*, *Scutellaria orientalis* var. pinnatifida, *Agropyron brandzae*

ABSTRACT

The paper presents ten species of the wild flora, with ornamental potential.

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FRUIT DEVELOPMENT IN SOME *MALOIDEAE* SPECIES

MIHAELA IOANA GEORGESCU, VASILICA PALANCIUC,
ELENA SĂVULESCU, C. BĂDULEȚEANU

Key-words: pome, drupe, endocarp, floral tube-carpel ratio

ABSTRACT

The paper briefly presents the results obtained from the research of some species of the *Maloideae* focused on the evolution of different inner parts of the fruit. It has been noticed that all the species have their receptacle grown together with the carpels. The *Cotoneaster* fruit is a pome, because the carpels are free on the adaxial side and united with the receptacle on the abaxial side. There is also the way the receptacle tissues and the carpel tissues develop during fruit formation that supports our idea. As for *Crataegus monogyna*, the existence of only one carpel and the larger development of the carpel parenchyma compared to the receptacle one proves the fact that the fruit is a drupe.

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COMPARATIVE DETERMINATION OF ORIGANUM VULGARE ESSENTIAL OIL COMPOSITION BY GC-MS AND GC-FT-IR

MIHAIESCU, D., BURZO, I., SIMIONESCU L., DOBRESCU A.

Key words: *Origanum*, essential oils.

ABSTRACT

Essential oil from *Origanum*, extracted in a Clevenger - type extractor by hydrodistilation, has been analyzed using GC-MS and GC-FT-IR techniques. Most application of *Origanum* essential oils are in the pharmacological field due to the high level of thymole and carvacrole – phenolic compounds with antibacterian properties. Qualitative analysis has been performed using identification of specific compounds by MS and IR spectra in conjunction with Kovats indexes for peak position confirmation. The quantification has been performed by FID detector coupled after FT-IR. Recent researches prove that *Origanum* essential oils have a various composition depending on species, altitude, geographic distribution, phenophase and others. Vogel (1996) established that the essential oil quantity from *Origanum* plant increases during its vegetative growth period and the extraction yield during florescence reach 4 ml/100g. Kokkini (1997) determined the *Origanum* plants essential oil composition from six different Greek localities. Plants coming from the north part of Greece had a larger timole content (30,3 – 42,8 %), comparing to the plants coming from the southern part which had a higher carvacrole content (57,4 %). The highest essential oil content was determined in low altitude locations with higher temperatures. Ravid and Putievsky (1986) established that the oils from *Origanum vulgare viride ssp*. have two chemotypes: one accumulates carvacrole and the other timole. Danin (1997) extracted the volatile oils using two methods: distillation followed by CH_2Cl_2 extraction and extractive distillation followed by separation and GC-MS identification. More than 132 compounds were extracted using these methods. Uses of *Origanum* oils are reported as spices, antimycothic, antibacterian, antihelminthic, antispasmodic, stimulant, analgesic, hemostatic and others.

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CHOROLOGICAL AND ECOLOGICAL ASPECTS OF *Nepeta cataria* L. (*Lamiaceae, Nepetoideae*) IN ROMANIA

IOANA MARCELA PĂDURE [*]

Key words: chorology, ecology, *Nepeta cataria*, *Lamiaceae*, distribution map.

ABSTRACT

The paper presents chorological and ecological aspects concerning *Nepeta cataria* L. (*Lamiaceae*) in Romania. *N. cataria* is a common and widespread species throughout Romania, considered by different authors also as antrophophylus and nitrophylus. Chorological data regarding *N. cataria* distribution are presented using bibliographical information, numerous data from different Herbaria of Romania and data collected from fieldwork. An important revision of voucher specimens was performed. A chorological map using U.T.M. system is presented and commented in detail.

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CHOROLOGICAL AND ECOLOGICAL ASPECTS ON *CONYZA CANADENSIS* (L.) CRONQ. (*ASTERACEAE, ASTEROIDEAE*) IN ROMANIA

NICOLETA SĂNDULESCU, IOANA MARCELA PĂDURE

Key words: chorology, ecology, *Conyza canadensis*, *Asteraceae*, distribution map.

ABSTRACT

Conyza canadensis (L.) Cronq. (syn. *Erigeron canadensis* L.) is a common species which is widespread as weed in Romania. The species has not very specific ecological requirements being well known that is growing in ruderal places or wood margins. This work is based on partial results provided by bibliographical papers, Herbaria information, and data collected from fieldwork. A chorological map using U.T.M. system is presented and commented in detail.

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RESEARCHES ON FITPOL INFLUENCE FROM VARIOUS AGROFOUNDS ON ENGRAFTED GRAPE VINE PHYSIOLOGICAL PROCESSES

STANCU R., MONICA FLEANCU, DUMITRIU I., EUGENIA DRĂGHIA, ALINA ENACHE

Key words: Fitpol, grape vine, agrofound

ABSTRACT

The aim of this paper consists in optimal Fitpol doze identification. Fitpol is a super absorbance aqueous substance that has to be added in the nutrient soup for *Victoria*, and *Muscat Ottonel* grape vine brackens. The product Fitpol C is a reticulated polyacrylamide (PAA) and it is considered to be the most indicated support the produce an aqueous material for engrafting fertilizing elements. World wide and national scale conducted researches have proved that Plastic made super absorbance aqueous substances are fit to use in agriculture and horticulture, due to their capabilities to retain water. Experimental sample have been produced in Stefanesti Vine Research and Production Station Phytotronic Complex. Those two grape vine brackens mentioned above were planted in plastic bags, in which rooting promoter soil mixtures were enriched with Fitpol C polymer. During the researches conducted in Pitesti University Plants Physiology Laboratory, there were observed photosynthesis intensity, respiration and transpiration intensity, the number of shoots and the foliated surface.

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FLORAL MORPHOGENESIS OF *SALVIA OFFICINALIS* L. (*LAMIACEAE*)

TOMA I., TOMA C., ZAMFIRACHE M. M.

Key words: *Salvia*, development, stamen, ovary, petal, sepal

ABSTRACT

Salvia officinalis is a medicinal and aromatic plant witch contain volatile oils (1,5 – 2,5 %). The main chemical components of sage oil are: borneol, camphor, thujone, phellandrene, salviol and cineole. The therapeutic properties of sage oil are: anti-inflammatory, antiseptic, astringent, digestive, diuretic, emmenagogue, insecticide, laxative and tonic. The volatile oils are produced by secretory hairs, frequents on the leaves and the floral pieces.

In this paper we investigated the floral morphogenesis stages. First, on the external part of the vegetative apex bract primordial – which will protect the flower - arise. Subsequently, the sepals, petals and the ovary primordia are initiated. The stamens are inserted from the beginning on the corolla tube. Because the ovary arises before the stamens, the flower is protogyne. When the stamen growth the filament is extended and the connective is bifurcated: his longer branch has a fertile anther, with two pollinic sacs; the shorter branch has also a little fertile anther. This is a rare case in *Salvia* genre because, usually, the anther form the posterior part of the filament branch is sterile. The ovary has two carpels and four locules, each with one campylotropous ovule.

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RESEARCH REGARDING FRUIT QUALITY OF NEW CREATED TOMATO EARLY HYBRIDS FOR GREENHOUSE AND FIELD

C. VÂNĂTORU, LILIANA BĂDULESCU, C. PETRESCU, I. BURZO

Keywords: tomato, F1 hybrid, fruit, quality

The increasing interest for preferable utilisation of early tomato F1 hybrids for protected areas and field lead to the predominant utilisation of imported seeds, special adapted for greenhouses and advanced technologies.

Because of the high level of seed cost price, the growers prefer F1 hybrids created before 1989 or tomato cultivars for summer growing.

We studied at the Experimental Station for Vegetables Buzău (SCDL Buzău) 4 F1 early hybrids adapted for greenhouses and open field. The amelioration aims were: earliness, environment extreme condition adaptability, storage capacity, disease tolerance, optimum qualities as aspect, taste and a good balance concerning the acidity and dry matter content (1, 2, 3, 4).

The trials with the best F1 hybrids conducted between 1996 and 2001 emphasised the new F1 hybrid superiority by comparison with the local cultivars and F1 hybrids concerning the earliness, productivity and ecological adaptability.

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THE EFECT OF AIR POLLUTANTS FROM BORZESTI INDUSTRIAL CENTER (BACAU DISTRICT) UPON PHISIOLOGICAL PROCESSES AND MORPHO-ANATOMICAL CHARACTERS OF WOODEN ANGYOSPERMES (NOTE IV)

ZAMFIRACHE M.M., IVĂNESCU L., APETREI R.

Key words: angiosperms, chlorosis, histological modifications, physiological modifications

ABSTRACT

The negative influence of air pollutants typical for the studied site (the industrial centre of Borzesti, Bacau district) is evidenced, first of all, by total or partial defoliation phenomenon, foliar chlorosis and necrosis, various teratological cases, notable especially at the species found on the limitrophe areas of the polluting source. The foliar chlorosis and necrosis represent the clear manifestation of profound physiological modifications, as well as severe structural alterations, which affect the average content of water, dry substance and assimilating pigments. Under the influence of both solid and gas pollutants, in the angiosperms' leaves, the average content of chlorophyll a, chlorophyll b and carotene pigments drops significantly, comparing with the standard values. The phenomenon is most often connected with the distance from the polluting source.

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FLORICULTURE AND DENDROLOGY

PERFUME COMPOSITION ON SOME FLOWERING BULB SPECIES

BURZO, I., MIHĂIESCU, D., DIANA ZAMFIR VÂŞCĂ, CONSTANŢA ALEXE, NICOLETA SĂNDULESCU

Key words: bulb species, perfume

ABSTRACT

Empirical studies about flowers perfume exist thousand years ago. These substances called perfume were the base of many synthetic essences developing a very rich industry.

Many cut flowers have characteristic fragrance owned to some chemical substances (terpenes, esters, and eters) synthesized on intense metabolic activities.

Mookherjee (1986, 1988) identified in *freesia* flower linalool, ethyl trimethyl pirazine, α-terpineol, β-ionone, and on *lilies* flower indol, methyl benzoat, benzyl benzoat, eugenol; *Lingfeng Zu (1983*) identified 16 substances in tuberoses flower perfume (methyl benzoate, 1,8 cineol, methyl salicilate); Garnero and Joulain (1984) discovered 99 components on some flowering bulb species (tetradecanoic acid and cis-α-irona on *iris* flower) and Brunke (1993) found benzyl acetate and phenyl ethanol in *hyachints* flower.

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RESEARCHES REGARDING THE VEGETATIVE PROPAGATION ON *COTINUS COGGYGRIA*

MONICA DUMITRAŞCU

Key words: *Cotinus coggygria*, cuttings, ANA, IBA, rooting substrates

ABSTRACT

During these experiments the rooting capacity of *Cotinus coggygria* cuttings was studied. The influence of rooting stimulators treatments (ANA and IBA) was studied, for different cutting periods, regarding roots quantity and quality. Also, the influence of substrate rooting type was evaluated, respective sand + pearlite 2:1 and peat + pearlite 2:1. The final results showed that the cuttings treatment with IBA gave better results compared with the variants treated with ANA, for both substrate types.

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RESEARCHES REGARDING THE INITIATION OF AN *IN VITRO* CULTURE ON *CLEMATIS VITALBA*

GÂLĂ RUXANDRA, STĂNICĂ F.

Key words: *Clematis vitalba*, rootstock, micropropagation, initiation, stabilization

ABSTRACT

The aim of this paper was the *in vitro* stabilization of some *Clematis vitalba* explants, starting from shoot-tips and uninodal fragments. The sterilizing agents we used were: oxygenate water 15%, mercuric chloride ($HgCl_2$) 0.05% and 0.025% and an universal detergent, applied in 4 experimental variants. The best results were obtained in V_3 ($HgCl_2$ 0.05% + detergent – 3 minutes) and V_4 ($HgCl_2$ 0.025% + detergent – 3 minutes). For stabilizing this culture we tested Murashige&Skoog medium (1962) in two variants, the differences between them being represented by the antioxidant substances amount added to the basal medium (ascorbic acid and citric acid).

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STUDIES REGARDING *IN VITRO* PROPAGATION OF ROSE

AURELIA CORINA GHEORGHE, IULIA NIȚU,
MARILENA STĂNESCU

Key words: rose, *in vitro* propagation, explant, nutritive substratum.

ABSTRACT

A healthy biological material obtaining and reducing the obtaining period represent one of the specialists concerns.

The work followed:

- to study the genotype's influence regarding the explants growing in initiation stage;
- to establish an optimum auxin/cytokinin ratio for the efficient propagation of rose;
- to study the interaction auxin – genotype in rooting stage;
- to establish the factors who influence the *in vitro* plants acclimatization in septic life conditions.

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RHIZOGENESIS STIMULATION IN *ROSA* SP. FOR THE OBTAINING OF HIGH BIOLOGICAL VALUE PLANTS BY CUTTINGS

OLTEANU I., PETRESCU C.

Key words: rose, propagation, cuttings, own roots

ABSTRACT

A large number of rose varieties are actually propagated by cuttings and transplanted directly with their own roots. An experiment using two miniatures rose varieties and five cultivars from bush and climber floribunda type has been conducted to achieve an efficient propagation method to speed up the transplanting material obtaining. We tried to evaluate the effect of some commercial phytohormones in order to stimulate the rhizogenesis process in demy-ligneous small cuttings. We obtained the best results with Rhizopon IBA 0.1% powder for miniature roses and with Incit 5 NAA for climber floribunda type roses. For bush Floribunda – Bonica the best result were registered on Rhizopon solution 1500 ppm for 3 seconds.

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THE INFLUENCE OF SUBSTRATUM AND pH UPON THE GROWTH AND BLOSSOM PROCESSES ON *LISIANTHUS RUSSELIANUS* HOOK.

PETRA SORINA, DAVIDESCU VELICICA,
TOMA F., CIOBANU FLORICA

Key words: *Lisianthus*, dwarf, substratum

ABSTRACT

Worldwide, scientists have as an aim that, starting from a basis flower species, they obtain several types and hybrid species of a most reduced size as possible. Thus, those species are likely to be cultivated in flowerpots and flower stands, and they can also be found in the decoration of the gardens or of the green spaces.

One of those species from which different types and hybrid species of reduced size were obtained is also *Lisianthus russelianus*.

In our country, their culture is lesser known, but it can be grown successfully. That is why we have tried to establish some technological links.

Results were obtained after the researches have demonstrated the influence of the culture substratum upon the precociousness of the blossoming, of the flowers number formed on the plant and of their quality.

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RESEARCHES REGARDING THE SEEDS GERMINATION DEPENDING ON SOWING TIME AND SEEDS AGE ON *LISIANTHUS RUSSELIANUS* HOOK.

PETRA SORINA, ŞELARU ELENA,
TOMA F., CIOBANU FLORICA

Key words: seeds, photosensitivity, germination, vitality

ABSTRACT

Lisianthus is used both as cut flower and pot plant.

A *Lisianthus* culture can be establish from transplants, rooted cuttings or planting material resulted from *in vitro* propagation techniques. The most common propagation method is sowing for transplants production. However, the culture quality and the plants number resulted (1 g contains 22000-25000 seeds) highly depend on the environmental conditions during germination and on the seeds age.

The results obtained showed the importance of both light (*Lisianthus* seeds are known like photosensitive) and temperature during germination process (the higher temperature is over 25°C, the smaller is the germination percent) and also the seeds age.

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RESPONSE TO TRANSPLANTING OF *CHAMAECYPARIS* AND *PICEA* ORNAMENTAL SPECIES

ALINA POSEDARU, STANCIU NICOLAE

Key words: species, transplanting, stimulator

ABSTRACT

The interest for the coniferous trees culture for ornamental purposes is great lately, since they play an important part in nursery production – Iliescu Ana-Felicia, 2002.

All researches in this field aim to set up the culture technologies for these ornamental coniferous and their introducing in the landscape arrangements.

Regarding cutting in hotbeds, usually the cuttings remain there until the spring, or seldom, as for hardly rooting species (like coniferous ones), they remain another vegetation season. After this culture cycle, the rooted cuttings are planted on pots. This pots are kept for 1-2 years in solariums or greenhouses, being careful taken off, and after that the plants are planted in the nursery formation field. For the cutting and pot plants, in the culture technology (temporary or permanent) the soil is substituted with other substratums, prevalent organic materials.

In the present paper, the rooted cuttings were treated before pot planting with Transvital and TL stimulation products, applied once with the plant watering.

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STUDIES AND RESEARCHES REGARDING METHODS AND TECHNIQUES OF BONSAI OBTAINING FOR INDOOR PLANTS

ŞELARU ELENA, PETRA SORINA, AVRAM MIHAELA,
PASCU BEATRICE, BALTAG DANIELA, TOMA MARIANA

Key words: bonsai, pruning, wiring

ABSTRACT

These researches are part of a larger project regarding: growing the biological material for Bonsai processing, methods and techniques of Bonsai obtaining, caring and perfecting of Bonsai at user, educate and professional formatting of young people for Bonsai creation and caring.

The experimental program included two aspects: first, obtaining and growing the biological material required by the proposed purpose and secondary, Bonsai specific interventions (pruning, wiring, transplantation etc.).

At first, the work was done on *Podocarpus macrophyllus* plants. The results regarding plant's reaction at pruning and wiring operations are interesting, they including private aspects of behaviour.

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PRACTICAL ASPECTS CONCERNING HETEROCARPY IN *CALENDULA OFFICINALIS* L

ELENA ŞELARU, DIANA ZAMFIR VÂŞCĂ, IOANA SĂFTOIU

Key words: *Calendula*, heterocarpy

ABSTRACT

According to the heterocarpy phenomenon, the *Calendula officinalis* seeds were separated, by shape and colour, on six different types: light - brown hook, dark - brown hook, light - brown horseshoe, dark - brown horseshoe, dark - brown snail, light - brown snail. Sorted on seed size, the following decreased order results: hook, horseshoe, and snail.

There were studied the influence of seeds character (shape, colour and size) on germination and further evolution of the new plants.

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STUDIES CONCERNING THE INFLUENCE OF TYPE EXPLANT UPON THE REGENERATIVE CAPACITY OF *POLYANTHES TUBEROSA* L. PLANTS

TOMA, FL.

Key words: explant, culture media, regeneration, tuberose

ABSTRACT

The *in vitro* production of the biological material is already well known for a lot of flower species. The *in vitro* multiplication in case of tuberose is strongly recommended because of the difficulties concerning the flower bulbs production.

The aim of our researches, extended on more years, was to study the effect of the *in vitro* multiplication upon the production of flower bulbs and the blossoming of percentage of tuberose.

We used two types of explants – buds of 1 – 2 mm excised from bulbs and inflorescence fragments of 3 – 4 mm (excised from the flowers insertion point). These explants were inoculated on five culture media, based on variation of NAA, KIN and BAP concentration.

The results of our studies showed a clearly superior regenerative capacity of the tuberose plants for the variants initiated from buds explants.

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RESEARCHES REGARDING THE INFLUENCE OF *IN VITRO* PLANT PRODUCTION UPON SOME PHYSIOLOGICAL PROCESSES FROM *POLYANTHES TUBEROSA* L. PLANTS

TOMA FL., BURZO I., DOBRESCU AURELIA, PETRA SORINA

Key words: tuberose, planting, respiration, perspiration, chlorophyll pigments

ABSTRACT

Polyanthes tuberosa L. is one of the most appreciated flowers because of its very strong and pleasant perfume. The present work belongs to a larger researches program concerning the biology and technology of this beautiful flower.

We analyzed the respiration, perspiration and chlorophyll pigments levels in the tuberose plants depending of the bulbs obtaining method (*in vitro* and in field) and the climatic conditions the bulbs were stored in during the latent period (20–22°C + 80–85% UR and 10–12°C + 50–60% UR).

The results of our studies showed that for the plants regenerated from *in vitro* tissue cultures the metabolism is more intense in the first part of vegetation, assuring this way an early and better flowering process. Similar results were recorded in the case of the plants regenerated from the bulbs stored under 20–22°C + 80–85% UR.

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STUDIES REGARDING THE GROWING OF *NEPHROLEPIS X MUSCOSA* HORT. PLANTS ON ORGANIC AND MINERAL SUBSTRATUMS

TOMA FL., PETRA SORINA, ANGHEL CATALINA

Key words: *Nephrolepis*, peat, river stony sand, plants growing

ABSTRACT

Replacing classical substrates, based on several components, by mineral or organic substratums, consisting of one material only, is one of the newest links in the researches programs concerning the culture of flowers species.

In this reason, we organized some researches regarding the possibilities that flowers species could grow on the river stony sand substratum, assuring the plants nutrition by mineral or organic fertilization.

In this work we used the control variant on peat. The plants nutrition was assured with weekly mineral fertilization.

Our results showed that the plants cultivated on the mineral substratums had similar or comparable growth with the plants cultivated on peat. These results mean that the river stony sand may be a serious alternative to peat, more expensive and difficult to obtain.

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STUDIES CONCERNING THE BEHAVIOUR OF THE *FICUS BENJAMINA* L. PLANTS ON THE SOME ORGANIC COMPOST

TOMA, FL., PETRA SORINA, VLAD PETRA

Key words: ficus, organic compost, growing

ABSTRACT

Because its *habitus* and leaves aspects, similar to the birch tree, *Ficus benjamina* L. is one of the most appreciated indoors plants.

Our researches followed the plants reaction at different organic composts, obtained from other agricultural activities (in this work flax and husk of grapes compost). These substrates were added in the basis substrate in 3 different ratios each other.

We used two varieties of *Ficus benjamina* – with green leaves and variegated leaves. The plants were obtained from cutting on sand + peat substrate.

The cuttings were obtained in May and in June we started the experiment. Monthly we realized biometrical observation and monthly we determined the growing rate, too.

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STUDIES REGARDING THE SOILLESS CULTURE OF *GARDENIA JASMINOIDES* L. PLANTS

TOMA FL., SELARU ELENA, VASCA DIANA, PETRA SORINA

Key words: substrate, fertilizer, *Gardenia*, growth

ABSTRACT

The utilization of "universal" substrates or soilless culture is very frequent in the last years because of their multiple advantages.

The aim of our researches was the study of *Gardenia* plants behaviour in conditions of soilless culture using as substrates river stony sand.

The plants nutrition has been assured by two complex fertilizers (Complex I – 15N:15P:15K and Complex II – 20N:18P:18:18 SO2:1,5Cl) in 0.05% concentration applied weekly and 0.1% concentration applied weekly and twice per month.

Our results showed that in case of using Complex II, the plants response concerning the growing and flowering was best.

Regarding the concentration and application frequency of fertilization solution, the results were better in the variant with weekly application of 0.1% concentration of fertilizer solution.

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THE LOTUS – AN INDIAN SOUL REPRESENTATIVE

MARIANA TOMA

Key words: lotus, symbol, India

ABSTRACT

Rosea plena

Having an amazing beauty doubled by an exquisite perfume, lotus rightly gained its first place between the aquatic flowers, being one of the most fascinating flower species from the world. Representing the metaphor of the universe which is born from the primordial waters, as well as, according to Hinduism, the origin of the divine characters, the lotus symbolizes perfection, fertility, purity, and the enlightenment. The lotus flower – seen as a symbol of the cosmic harmony and considered the only flower which can transcend the time – is in fact, through its diverse colours, a link between earth and heaven, a gate towards eternity. An eyes and soul relish, a generous miracle of life, heavenly blessing, the lotus will always have a special place in the heart of every human being who seeks for the Absolute.

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FRUIT GROWING

INFLUENCE OF PLANTING DISTANCE ON STRAWBERRY FRUIT BEARING, WHEN MULCHING WITH BLACK POLYETHILENE FILM

A. BACIU, I. GODEANU,
SINA COSMULESCU, M. CICHI

Key words: strawberry, mulching, fruit bearing

ABSTRACT

Soil mulching, by using polyethylene black film, represents an alternative in improving the growing technology on strawberry.

The advantages of this method consist in: keeping the soil humidity, the culture is not being invaded by weeds (Diaconeasa M. and all., 1996), clean and good quality fruits are being obtained, and the insect attack risk is low.

Further, to experiments made in various planting distances on strawberry mulched with black polyethylene film, it was seen that the distance of 25/25 cm gave the best results regarding the yield.

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PARTIAL RESULTS REGARDING IRRIGATION INFLUENCE ON THE HIGHBUSH BLUEBERRY CROP, UNDER PEDOCLIMATIC CONDITIONS OF MUSCEL SUBMONTAINOUS AREA (Bilceşti - 840)

CĂTĂLIN BĂDESCU

Key words: highbush blueberry, irrigation

ABSTRACT

Although Bilceşti is sited at 840m altitude, the rainfalls reach yearly over 740 mm but the blueberry crop is affected by dry periods which occur mainly during fruit growth and maturation phenophases. The studies performed in 2003 have emphasized that for obtaining high yields irrigation is needed. When the irrigation water amounted 110cm, the yield increase was 72%. The fruits in the irrigated plots were bigger vs. non-irrigated control but the dry weight was a bit low. Our investigation results in sub-mountain area have led to an irrigation need in such areas.

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ASPECTS ON THE IMPACT AND CONTROL OF PEAR FIRE BLIGHT UNDER BILCEŞTI CONDITIONS

CRISTINA BĂDESCU

Key words: *Erwinia amylovora*

ABSTRACT

The studies have been carried out in a pear orchard (Cure′CV.) grafted on quince and established in 1994. Six control treatments were tried. The climatic conditions in 2003 were generally favourable to this pathogen (*E. amylovora*) spreading. Although, in spring the infection spots were removed, in late May and early June the infection was rapidly spread. The attack frequency ranged from 4.76% to 20.48%. The intensity was rather different, between 3.33% in the treatment 1 and 56.48% in the untreated control. The attack level was between 0.48 % (T1) and 6.34% (T2) being levelled than in case of control (12.03%). Among the control schemes, those applied in T1 and T2 were mostly effective (95.76% and 87.32%) respectively, however, their use did not succeed stopping the spread of this pathogen. Having in view the danger caused by this pathogen it might be possible that in the future the pear orchards are entirely killed if the authorized organizations did not take severe control measures.

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RESEARCH REGARDING THE INFLUENCE OF CONDUCTING MODALITY UPON PRODUCTIVITY OF SOME APPLE CULTIVARS

BĂRBAT NICOLETA LAURA

Key words: productivity, apple

ABSTRACT

The researches were done during the period 2000-2002 within the experimental field of the Fruit Growing Department, University of Agronomic Sciences and Veterinary Medicine of Bucharest. Florina and Prima apple trees, which were conducting in four crown forms, represented the biological material: Solen, Solen with two branches, structured Ax and Free Palmetta.

The results of these studies showed that the highest productive potential was found on structured Ax (18.4 kg/tree on Florina and 17.2 kg/tree on Prima) and the smallest productivity were registered on Free Palmetta (6.2 kg/tree on Florina and 6.4 kg/tree on Prima).

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COMPARATIVE STUDY OF APPLE TREES DEVELOPMENT IN THE NURSERY

BĂRBAT NICOLETA LAURA, PĂUN C.

Key words: nursery, scion, rootstock

ABSTRACT

The quality of material seedlings obtained through grafting is expressed through: aerial part height, bud's viability, stock and scion diameters in the grafting point, the roots size and the degree of root system embranchment.

Persistent analysis effectuated to Pioneer variety emphasized the fact that rootstock M.106 favourably influenced the trees grafted height, so there were obtained heights of 125 to 160 cm.

In the case of Florina variety grafted on rootstock M.106, the trees aerial part registered bigger growths, despite the more reduced vigour of this variety (145-210 cm).

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THE HIBRIDS CHERRY x SWEET CHERRY, POTENTIALS ROOTSTOCK FOR INTENSIVE GROW CHERRY

CEPOIU N., PĂUN C.,
DARJANSCHI ADRIANA-MIRELA

ABSTRACT

At the end of study we obtained natural hybrids with small vigour between cherry and sweet cherry. Only 16 natural hybrids from all 38 had been retained for complex investigations. The hybrids investigated were 1.12 – 3.75 m high, with either cherry, sweet cherry or intermediary characteristics. We recommend some of them for rootstocks.

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THE IMPLEMENTATION OF HACCP (HAZARD ANALYSIS AND CRITICAL CONTROL POINTS) SYSTEM ON CONCENTRATED FRUIT JUICES TECHNOLOGY

CHIRA A.

Key words: food safety, hazard

ABSTRACT

HACCP is the abbreviation for the English expression „Hazard Analysis and Critical Control Points".

To obtain high-quality products-capable of meeting the consumers' demands and complying with the European standards, it is recommended the certain risk-prevention and control methods should be applied.

In the horticultural product industry, the application of a HACCP system allows the identification of the technological process key-elements. The system analyses the hazard related to the concentrated fruit juice and the process, indicating the critical control points to the hygienic quality of the product.

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THE EFFECT OF WINTER PRUNING ON THE YIELD OF CHESTER THORNLESS BLACKBERRY

LENUŢA CHIRA

Key words: floricane, buds, yield, blackberry

ABSTRACT

Five-year-old Chester Thornless blackberry (*Rubus* sp.) plants were pruned, during the dormant period, to three floricanes with three, six, nine and twelve node lateral branches in order to determine the effect of lateral branch on bud-break, fruit cluster number, fruit number per cluster, fruit weight, total soluble solids (TSS), and yield level.

Percent bud-break of primary and secondary axially buds was reduced as the lateral branch number increased. Pruning did not affect weight (6g) or TSS (9.3%).

Yield per lateral branch was reduced as lateral branch number increased. A plant with three floricanes, each with 12 lateral branches produced 22.5 kg of fruit.

The results indicate that pruning lateral branches to a manageable length may be advantageous for thornless blackberry trained on double fence system.

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PHENOLOGICAL AND CLIMATIC SIMULATION ON THE APPEARANCE OF DAMAGES CAUSED BY LATE FROSTS IN PLUM CULTIVARS IN ROMANIA

E. CHIŢU, MĂDĂLINA BUTAC

Key words: late frost, plum, simulation

ABSTRACT

The study is an attempt of uncertain estimation, which accompanies the damages in the orchards due to late frost and it uses the probability theory. In this study we considered that this climatic accident occurs only in case of simultaneous appearance of phenophase and temperatures below critical values. It is found that in Mărăcineni area (5 km far from Piteşti), once in 22 years the yield could be ruined due to late frosts between 21 and 25 of April. To extend the applicability field of these studies for areas with no phenological observations, a package of multiple regression equations is settled, which can simulate the phenology dynamics till the end of plum blooming. The input data of the model are the daily average, minimum and maximum temperatures, starting with February 1st. Those are changed in 24 hours temperatures, by means of two original sinusoidal functions and taken over by regression equations, which every 5 days generate the beginning date of phenophase. Estimate precision of phenological dynamics is very high, the maximum deviation being not longer than two days. Phenological data calculated for tens of years, stand for the representative sample in settling the functions of cumulative frequency. By multiplying the phenological cumulated frequencies for 5 days and appearance probability of minimum temperatures below critical values, the damage probability may be calculated. This methodology is computerised.

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A NEW CLASS OF MULTIFUNCTIONAL FOLIAR NUTRITIVE PRODUCTS

VIORICA CHIŢU, E. CHIŢU, ADINA PERIANU, F.C. MARIN, ANIŞOARA HORORoI, MIHAELA CALOGREA, L. FILIPESCU

Key words: foliar fluids, sequential application, multinutrients

ABSTRACT

Foliar nutritive fluids are multicomponent products including both well-known nutrients common for liquid fertilizers and a new class of micelle overbasic naphthenates, which bring about growth regulator entities born by carbonation on the leaves surface, immediately after application. Four commercial brands have been formulated to provide appropriate amounts of nutrients at the convenient uptake rates according to the crop development stage. The sequential use of these brands has been tested on three-years base experiments.

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PRELIMINARY RESULTS CONCERNING INSECTICIDE ACTION OF SOME PLANT INFUSION

ROXANA CICEOI, PAŞOL P.

Key words: infusion, insecticide action, *Conyza canadensis, Nicotiana tabacum, Melissa officinalis*, aphids.

ABSTRACT

Nicotine has been used since time and is the most hazardous botanical insecticide available to home gardeners. Although many books and articles presents the insecticide properties of some plants extracts, infusions, etc. and many recipes are presented, few researches were conducted in aim to demonstrate theirs efficacy.

In this paper we try to establish if infusions made from different plants have the insecticide action that has been presumed. Tobacco and fleabane (*Conyza canadensis*) infusions have an insecticide action. Lemon balm (*Melissa officinalis*) infusion attracts beneficial insects.

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STUDY REGARDING FRUITING PERFORMANCE OF SOME NEWS PLUM TREE VARIETIES GRAFTED ON SOME ROOTSTOCKS, IN ORDER TO IMPROVE THE ASSORTMENT IN OLTENIA HILLS ZONE

CICHI MIHAI, BACIU ADRIAN,
SINA COSMULESCU

Key words: plum tree, assortment, rootstock, variety

ABSTRACT

The Oltenia hills zone is characterized through 10.3 – 11.0ºC average temperatures, 500-630 mm rainfall, forest brown – reddish soil, all these conditions being favourable to plum-tree culture.

The results obtained concerning the fruiting precocity, its potential, technological characteristics, chemical composition, fruit organoleptic features, confirm the different value of some new varieties of plum tree grafted on some rootstocks.

The rootstock plays a very important part in growing and bearing fruit-trees. In Oltenia hills zone, plum varieties grafted on Miroval or Pixy rootstocks can be extended.

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THE INFLUENCE OF TREE PLANTING DISTANCES ON APPLE FRUITS QUALITY

AURELIA DOBRESCU, DANIELA BĂLAN,
MARILENA IONIȚĂ

ABSTRACT

The purpose of the researches presented in this paper was to reveal the influence of the planting distance in an apple tree orchard on the main quality indicators in the apple fruits: the epicarp content in pigments, the content in dry soluble substance, ascorbic acid and mineral substances, the titrable acidity. The studies were performed on Jonathan apple tree cultivars, cultivated in different orchard types: Classic, Super and Intensive. The results obtained allow us to remark that the planting distance influenced the synthesis and the accumulation of the biochemical compounds in the apples.

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THE FOLIAR FERTILIZATION – TECHNOLOGICAL, UNCONVENTIONAL AND UNPOLUTING ACTION METHOD UPON SWEET CHERRY METABOLISM FOR A LASTING DEVELOPMENT

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ABSTRACT

The foliar fertilization through small nourishing quantities during the vegetative period represents a modern method of positive influence upon plants metabolism. Also, it represents a complementary, unconventional and non-polluting source of nourishing for trees.

In the present work, our research emphasizes the significant production increase, statistically assured, as well as high power and photosynthetic efficiency to Sweet Cherry in an intensive orchard at the University of Agronomy of Iasi on a fertile soil (chernozem), where foliar fertilization has been used.

Also, the nourishing reduced the entropic spread at soil and plant level, following in the same time a better correlation between nourishing, ecological and technological factors.

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RESEARCH CONCERNING THE INFLUENCE OF FOLIAR FERTILIZATION UPON THE GROWING AND BEARING OF THE PLUM TREE

D. HOZA

Key words: plum tree, foliar fertilization

ABSTRACT

In the actual pomiculture trend, passing from phasial soil fertilization to extraradicular fertilization represents one of the measures taken in order to reduce the negative impact of the chemical fertilizers on the environment and to rectify some elements deficiency, or as phasial fertilization. Five varieties were used: Stanley, Tuleu timpuriu, Agen, Anna Spath and Centenar and 2 complex foliar fertilizers: Agroleaf and Nitrophoska, both having macro and microelements. The fertilizers were applied in the same time with the phytosanitary treatments, three times, at 20 days delayed, starting from 3rd decade of May. It is remarkable that after the foliar treatments the trees becomes more resistant at specific diseases and ensure a bigger tolerance at environmental conditions less favourable. Applying the Nitrophoska product, an average yield of 24 t/ha and a maximum of 29.5 t/ha at Stanley variety is ensured, and using Agroleaf product, it was observed that this was more valorised by early varieties (Tuleu timpuriu, Centenar) on which the yield was slightly bigger.

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THE INFLUENCE OF THE MIXED BRANCHES SHORTEN DEGREE UPON THE YIELD AND PEACH QUALITY

D. HOZA, A. ASĂNICĂ

Key words: peach, mixed branches

ABSTRACT

For the peach tree, the pruning operation is a very important and an obligatory measure in order to obtain a good quality of fruits and to ensure good conditions for growing and bearing processes. The bear branches of the flat fruit peach tree are thinner than standard peach, which justify the overcharge with severe consequences upon the tree integrity. So, we used 4 variants represented by mixed branches shorten at different lengths. During the research period, observations and determinations were performed, regarding the growing capacity, fruit-setting percentage, yield and the fruits quality. Regarding the vegetative growth, the pruning reaction was slightly influenced by variety and the shorten degree also. The shorten of the mixed branches on flat fruit peach tree at 50 cm ensures a slightly bigger fruit charge, which could have negative consequences upon the branches integrity in the years with a good fruit-setting percentage. The limitation of bear branches length at 40 cm, ensured a normal charge at branch level but a slightly smaller yield in the long pruning type and the shorten of mixed branches at 30 cm ensured a good rate setting at branch level, but the yield decreased with approximate 15 %, because of the smaller fruit-setting in the basal part of the branches.

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STUDIES REGARDING THE NEW BLACKBERRY GENOTYPES INTRODUCTION INTO ASSORTMENT

PAULINA MLADIN, MLADIN GH., COMAN M.,
V. ISAC, C. MUTAFA, A. PERIANU

Key words: cultivar, ripening, yield, winter hardiness, disease resistance

ABSTRACT

Seventeen thorny and thornless blackberry cultivars and selections were being assessed in two field trials in order to choose the most valuable ones for the assortment involved in the hilly area of Southern Carpathians and other similar climate zones. The major plant and fruit characteristics have emphasized the thornless cultivars “Chester”, “Hull Thornless” and “Loch Ness” and the thorny and early selections “D8-99” and “D24-99”. The first ones have overcome or equalled the control cultivar, “Thornfree”, regarding the quality, the amount of ripened fruits before the autumn frosts, yield, hardiness and the latter ones as regards the fruit quality and yield. “Triple Crown” cultivar should be also mentioned for its hardiness, berry quality and tolerance to purple blotch of the canes.

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RESEARCHES REGARDING THE STORAGE CAPACITY ASSESSMENT IN MICROPERFORATED PLASTIC FOIL ON SOME NEW LETTUCE VARIETIES

NICOLAE D., ELENA DRĂGHICI

Key words: perishable, storage conditions

ABSTRACT

The researches followed the storage behaviour for these lettuce varieties: Piroga, Salad Bowl Carthago, Gringo, Ascona Everest, Iceberg and Little Caesar.

There were two variants for the storage conditions, listed bellow:

V_1: T= 20°C, RH= 75 %;

V_2: T= 4°C, RH= 90 %;

The results depended on variety and storage conditions. Almost all varieties kept their proprieties for about two days in variant V_1. In the second variant (V_2) case, they lasted between 5 and 9 days. Weight loss during storage was between 20.5 % for Ascona –V_1 and 3.7 % for Little Caesar – V_2.

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RESEARCH CONCERNING THE CATKINS EVOLUTION ON HAZELNUT

PĂUN C., BĂRBAT NICOLETA LAURA, CEPOIU N.

Keywords: hazelnut, catkins, flower

ABSTRACT

The hazelnut's male flowers are named catkins and are willing separated by female flower. They are visible on the plant for a very long period, and their evolution is different than other species.

Before the dormant period the catkins have in average 3-3.5 cm length. After the vegetation beginning at the end of January, they have 9-11 cm length and liberate their pollen needed for female flower fecundation.

The catkins are formed and become visible from anterior liberate pollen year. The catkins are present on the plant about 285-290 days. Formed in summer period, the catkins are growing till the end of the autumn, they pass the winter, and in the spring beginning they set the pollen free.

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THE IMPACT OF ENVIRONMENTAL CONDITIONS ON QUALITATIVE CHARACTERISTICS OF THE WALNUT FRUITS

PĂUN C., CEPOIU N., BĂRBAT NICOLETA LAURA

Key words: walnut, quality

ABSTRACT

The national-level major changes of the climatic appearances challenged obvious modifications regarding the vegetation period duration, fruits size, diseases and pests resistance and fruits quality. These modifications were evidenced on an experimental walnut plantation, that beneficiated of minimal agrotechnical condition. Thus, in the year 2002 we noticed that the trees presented a light sensibility to *Xanthomonas juglandis* and *Gnomonia juglandis*, and had a long vegetation period compared with the year 2001 and 2003. In the year 2001 the fruits content in kernel was higher, comparative with previously years. Visible modifications were also registered in the case of colour cores.

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TECHNIQUES FOR A PROPER HERBICIDES APPLICATION ON FRUIT TREES, SMALL FRUITS AND STRAWBERRY

Adina PERIANU, Viorica CHIŢU, E. CHIŢU,
Paulina MLADIN, M. COMAN

Key words: weeds, preemergent, postemergent herbicide application

ABSTRACT

The studies between the years 1993-2003 regarding the influence of new soil management systems on the fruit ecosystem failed to find new technological sequences for the soil management along the tree, small fruit and strawberry.

This paper presents the strategy for weed control with and without herbicides and the key for a proper utilization.

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RESEARCHES REGARDING NUTRIENT SOLUTION FERTILIZATION ON ACTINIDIA ARGUTA

PETICILĂ A.G., DAVIDESCU VELICICA

Key words: Kiwi, green cutting, nutrient solution.

OBJECTIVES

- Finding out the optimum substrate for planting the cuttings obtained through green cutting
- Finding out the best nutrient solution type for shortening the necessary time to obtain plants ready for planting in the field
- Studying the effect of the nutrient solutions treatment on the rooted cuttings on *Actinidia arguta*

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SELECTION OF SOME HYBRID ELITES OF KIWI (*ACTINIDIA ARGUTA*) FOR THE EXTENSION IN FRUIT PRODUCTION

STĂNICĂ F., GAVRILUȚ CEZARA., NICOLAE D.

Key words: Gooseberry, breeding program, seedlings, physical fruit characteristics, chemical fruit characteristics

ABSTRACT

Chinese gooseberry (*Actinidia arguta* Sieb. et Zucc.) is an interesting kiwifruit specie from the *Actinidia*'s genus and it was included since 1993, in our breeding program. Being more frost resistant than the others kiwi and having tasty small fruits, smooth skin with different aroma and flesh colour, *Actinidia arguta*, can be extended in Romania in commercial and amateurs orchards.

More than 1000 hybrid seedlings were planted in 1993 in the experimental field at the Faculty of Horticulture in Bucharest. In 2001, first fruits were obtained and the selection continued in 2002 and 2003.

For each hybrid different plant morphological characteristics were studied: tree vigour, leaves and flowers shapes and aspects like phenological behaviour: date of bud opening, flowering, fruit ripening period and leaves fall.

Fruits were analyzed from the physical and biochemical point of view at the ripening moment and after different periods of storage.

After the first two years of fruit selection, few elites with interesting characteristics were chosen to be multiplied and tested during the next step of the breeding process.

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NORTHERN BANANA (*ASIMINA TRILOBA* L. DUNAL) – A NEW FRUIT SPECIE IN ROMANIA

STĂNICĂ FL., CEPOIU N.

Key words: Paw-Paw, taxonomy, plant description, ecology, propagation, culture technology

ABSTRACT

Northern banana, or asimina, is new fruit specie that incited the interest of both the specialists and growers in the native area – Northern America and also in many European countries. Beside their taste and exotic flavour, the asimina fruits are extremely appreciated for their high content in A and C vitamins, minerals like Ca, Fe, Mg, Mn and amino acids, more over the values found in apples and peaches. Asimina is hardy specie and can be successfully grown in the temperate regions. In winter it resists until -25°, even to -30°C. It needs almost 160 days for the vegetative period and grows well in areas with 700-800 mm rainfalls. The most common propagation method is from seeds, but for a qualitative planting material, that sets fruits rapidly, seedling grafting with valorous varieties scions is recommended. The main varieties cultivated at the moment are Sunflower, Overleese, Davis, Ithaca, Prolific, Taytwo and Prima 1216. The recommended planting distances in the orchard, are: 4.5-5.0 m between the rows and 2.5-3.0 m between the plants on the row. Asimina doesn't require special phytosanitary treatments being a contributing factor to the diminution of the environmental pollution level, and its fruits are naturally free of pests' residues. All these elements, suggest that, northern banana represent one very interesting fruit specie with high chances for extension in the future in Romania.

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INFLUENCE OF TREE SOIL WATER UPTAKE ON FRUIT YIELD IN THE GOLDEN DELICIOUS APPLE CULTIVAR GRAFTED ON MM 106

N. TĂNĂSESCU

Key words: crop evapotranspiration, loamy-clayey soil

ABSTRACT

The experiment was carried out at the Research Institute for Fruit Growing, Maracineni-Arges, in an intensive apple orchard during a 7-year period. The trial was organized after the split-plot method, for each treatment: control (non-irrigated), sprinkler, micro-sprinkler and drip irrigation. Irrigation was applied according to the soil water moisture content that was not allowed to decrease below the minimum value of the easily-available threshold in the wetted soil volume. Crop water uptake in the Golden Delicious apple cultivar induced a positive effect on fruit yield. A direct, linear and significant correlation was found between these two parameters. The maximum values of the average fruit mass in the Golden Delicious apple cultivar was obtained at a 500-520 mm of crop water uptake by the tree roots during a growing season under the soil and climate conditions from Maracineni.

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VEGETABLE GROWING

STUDIES CONCERNING THE MAIN CHARACTERS VARIABILITY OF CHANTENAY RED CORE CARROT IN THE CONSERVATIVE SELECTION PROCESS

AMBĂRUŞ SILVICA, CREOLA BREZEANU,
MIHU GHICĂ, CRISTEA TINA

Key words: Conservative selection, variability, carrot Chantenay Red Core, authenticity, genotype.

ABSTRACT

Maintaining the carrot varieties between the specific lines of variability represents the main objective of conservative selection. (Chira, 1996). The genetic diversity and the influence of the environmental factors over the variability of some characters from carrot varieties were underlined by Kuckuck (1979). His studies showed the fact that the observed variability was determined by the interaction of some genes with discrete effects which are called polygenes.

The variability and the quantitative characters correlation from this species were underlined by Choi and colab. (1994), Sazanana (1977). The genotype, the interaction between the environmental factors and the compulsory allogamy of the carrot plants, determine these species to act like a population with a high level of uniformity (Banga, 1963).

The correlation method used in variability analysis of the characters by Kellner and Varga (1964) and Chira (1995) revealed very interesting results concerning the existence and the meaning of the interactions between the genotype and the environmental factors. The merit of the conservative selection through the annual analysis of characters variability for the carrot varieties is that it avoids the modification of the genetical constitution and valuable features and also the varieties degeneration in time. By annual analysis of the varieties variability, the conservative selection does not allow the modification or loss of the valuable characteristics and feature, avoid the degeneration in time of the variety.

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COMPARATIVE STUDY OF NEW TOMATO HYBRIDS CULTIVATED IN COLD GREENHOUSES, IN ŞTEFĂNEŞTI – ARGEŞ

ANGHEL ADRIAN, MUŞA FLORINA

The present study's object is to compare five new tomatoes hybrids to the Arleta variety which was already cultivated in the greenhouses of our country.

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THE BEHAVIOUR OF NEW CARROT CULTIVARS IN EAST PART OF THE DANUBIAN PLAIN

N. ATANASIU, VIORICA LUCHIAN,
LILIANA BĂDULESCU, D. BUDUR

Key words: carrot, vegetable farm, harvest moments

The carrot is an important species for vegetable production in Romania, used for a fresh consumption and as raw material in the food industry.

In Însurăţei and its surroundings from Brăila County, the horticulture is represented, especially, by great grapevine plantations and various small or middle vegetable farms destined for family consumption and private market of small fresh vegetable products included sometime a low quantity of carrots.

This applicative research paper was initiated to evaluate the possibilities of the carrot growing revival, to increase the local consumption of this species.

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THE RELATIONSHIP BETWEEN THE FEATURES OF INCIDENT LIGHT ON PLANT AND THE TOMATO YIELD

LILIANA BĂDULESCU, IOAN BURZO, RUXANDRA CIOFU,
VIORICA LUCHIAN, NICOLAE ATANASIU

Keywords: light, tomato, fruit, yield, photoselective plastics

ABSTRACT

The yield increase could have unfavourable consequences on tomato fruit quality because of the inverse ratio between dry matter content and yield (Ho and Hewitt, 1994). The fruit size and its soluble dry matter content are highly influenced by radiance, especially by its influence on total leaf assimilates translocated in this sink organs. The increase of radiance performs the sugar increase (Winsor and Adams, 1976).

The aim of this paper is the yields dynamics studies on tomato cultivated in certain light conditions with a non-polluting technology using photoselective plastics.

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EXCEL – A FALSE FRIEND FOR POLYNOMIAL REGRESSIONS ? USER REMARKS

BUDOI GH., BERCA M.

Key words: Excel, polynomial regressions

ABSTRACT

Based on a data set, polynomial regressions have been calculated using the EXCEL trendline command. By other mean, a parallel set of polynomial regressions has been calculated on the same data set. Evaluations y = f(x) have been done (not with Excel) using both sets of regressions, then they have been graphically represented and compared to each other and to the testing data. The paper illustrates that *Excel correctly calculates the polynomial regressions* (proved by the fact that the curves in the graphs are correctly plotted), *but the trendline displays them with (sometimes) not enough decimal fractions for coefficients*. So, when using such an equation (published in a paper, for ex.) in order to predict y = f(x), sometimes the predicted y values can be very different from those obtained with an equation with sufficient displayed decimals (SDD equation), and far from the curve of the graph. The y errors (deviations) increase by the increase of the equation degree and by the increase of the independent x variable. *The paper suggests that, in a new version of Excel, the trendline automatically displays the polynomial regressions with so many decimals* for each coefficient *so that the equations* displayed and presented in publications *be rigorous for predictions, but (if the user does not want otherwise) no more than that for not to be difficult to handle with.*

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RESEARCHES REGARDING HARMFUL AND USEFUL FAUNA IN CUCUMBER CROPS

MARIA CĂLIN

Key words: cucumber, fauna, useful, harmful, diversity, intensive agriculture, trial.

ABSTRACT

During 1995 - 2003 a series of trials, were performed in the experiments filled at Vegetable Research Station Bacău, regarding the setting up a intensive agriculture under the particular condition of the Moldova.

Because the number of chemical treatments for diseases and pests was high, our observances signalled only 2 classes, 9 orders, 20 families and 39 species.

Among they were: **useful fauna -** the species were in: 2 classes, 4 orders, 7 families, with: a specie in order *Opistophora* (4%); 19 species in 4 family of order *Coleoptera* (76%)*;* 4 species in a family of *Hymenoptera* order (16%); a specie in a family of order *Diptera (*4%*);* **harmful fauna -** the species were in: 2 classes, 4 orders, 7 families.

Lucrări U.Ş.A.M.V.B., Seria B, Vol. XLVl, 2003

THE STUDY OF THE PREDATORY SPECIES IN CABBAGE CULTURE

MARIA CĂLIN

Key words: organic agriculture, diversity, intensive agriculture, trial.

ABSTRACT

During 1991-2002 a series of trials were performed in the experiments field at Vegetable Research and Development Station Bacău, regarding predatory fauna of cabbage in intensive and organic agriculture movements under the particular condition of the Moldova.

Our observances signalled 2 classes, 5 orders, 11 families, with predators of: 35 species in 4 family of order *Coleoptera* (77.8%)*;* a specie in a families of order *Diptera* (2.2%); a specie in a family Formicidae of order *Hymenoptera* (2.2%); 5 species in family *Chrysopidae* of order *Neuroptera* (11.1%); a specie in a family *Nabidae* of order *Heteroptera (*2.2%); 2 species in a family *Lycosidae* of order *Araneae* (4.5%).

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VARIABILITY OF THE MAIN CHARACTERS IN GREEN PEA (VARIETIES AFILA SC AND GEROLA) DURING THE PROCESS OF CONSERVATIVE SELECTION

MARIA CENUŞĂ, I. SCURTU,
MIHAELA VĂLEANU, V. MIRON

Key words: green pea, variety, variability, morphological traits, conservative selection.

ABSTRACT

In contrast with the selection process carried out during the breeding programme, aiming to create a more favourable balance in the genetic structure, in the frame of the process of seed multiplication, selection gets a specific content and goal in order to keep up an established structure and is called *conservative selection.* In order to increase effectiveness and quality of the selection works carried out in the different stages of the process of the seed multiplication, it is necessary to know in detail the main characteristics specific to the variety and which assure its individuality. Characters and traits differentiate the varieties among them by their specific expression in the frame of amplitude covering the manifestation of these characteristics. AFILA SC and GEROLA are two new green peas varieties obtained in the Research Institute for Vegetable and Flower Growing Vidra that were certified in 2000 and that were subjected to a process of conservative selection beginning with 2002 at the R.I.V.F.G. Vidra. On the base of the phenological observations and biometrical measurements, by statistical methods the intervals of variability of the main characteristics were computed.

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INVESTIGATIONS CONCERNING THE USE OF SOME FERTILE-STIMULATING PRODUCTS AT TOMATOES CULTIVATED IN THE FIELD

PELAGHIA CHILOM; NICOLAE LASCU

Key words: tomatoes, fertile-stimulating, treatment.

ABSTRACT

The researches fulfilled at the early tomato culture from the field, Ioana F1 had as a goal the influence of some fertile-stimulating products upon the growth and fructification processes.

One treatment with Cycogan 0.15 % or Cropmax 0.25 % has been effectuated at the seeds and other treatments with fertile-stimulated Cropmax 0.5 % or the fertilizing Terra – sorb 1 % at the plants culture.

The best production results were obtained in the case of treatment combinations: Cropmax + Terra-sorb; Cropmax + Cropmax; Cycogan + Cropmax, the untreated control being exceeded up to 46.2%.

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THE INFLUENCE OF IMPROVING OF AUBERGINE SEEDLING PHYSICAL CHARACTERISTICS OF NUTRITIVE SUBSTRATE USED FOR TRANSPLANT

CHIVULETE S., ELENA DRĂGHICI

Key words: aubergine, transplant, nutritive substrate

ABSTRACT

In this study we followed the influence of Fitpol C product on improving of physical characteristics of nutritive mixture used for aubergine transplant.

We seized that adding Fitpol C product to nutritive mixture the quantity of water used was the biggest at variant applied to 1% product. Meanwhile, number of cubs was biggest with 28% to control. Physical characteristics (apparent density, permeability, porosity) of pressed cubs were improved. The rooting system volume was bigger with 18-127% than the control variant

The height of plants in pressed cubes physical characteristics was bigger with 9-82% than transplant plants in cubes of control variants.

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RESEARCHES REGARDING THE INFLUENCE OF FERTILIZATION ORGANIC ON GREENHOUSE TOMATOES

TEODORA CREŢU, V. POPESCU, N. ATANASIU, GH. BUDOI

Key words: tomatoes, greenhouse, fertilization organic

ABSTRACT

Unreasonable pesticide usage in agriculture leads to a lost of nutritive elements from the soil, an interruption of natural circuit of nitrogen from nature. In this research we pursued the influence of some organic fertilizer in tomatoes culture: garden compost, a mixture of peat and forestry compost, a substratum resulted from mushroom compost, a recycled substratum made from peat and pearlite.

This experiment was developed between 2002-2003 years, in USAMV Bucharest, at the green houses sector. Five variants were fertilized with organic materials, in doses of 2.5 hg/m^2 and one unfertilized (control variant). The best results were obtained at the tomatoes fertilized with substratum resulted from mushroom compost (98.5 t/ha) and in the one with peat and pearlite (97.2t/ha).

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THE VARIABILITY OF NITRATES CONTENT IN SOME VEGETABLES FROM SOME BUCHAREST MARKETS

VELICICA DAVIDESCU, ROXANA MADJAR,
GABRIELA NEAȚĂ, IOANA DIMA

Key words: nitrates content, vegetables, maximum admitted limits

ABSTRACT

The fertilization with nitrogen, phosphorus and potassium in balanced rates directly influenced by specific needs of plants could determine the increase of the crop quantity and quality.

The application of nitrogen fertilizers without control could affect the nutritive balance and lead to the lowering of quality for each crop, the nitrate accumulations above the maximum admitted level being a real danger for human health.

The research of Agrochemistry Department was initiated as a consequence of arguments concerning the excessively high nitrates contents of some vegetables, debates published in mass media during the spring of 2003 year.

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THE INFLUENCE OF CULTURE MEDIUM ON *IN VITRO* CLONAL REGENERATION ON WITLOOF CHICORY (*CICHORIUM INTYBUS* L.)

OANA DIACONESCU

Key words: F_1 hybrids, hormonal balance, regeneration rate, plantlets length

ABSTRACT

Generative propagation on witloof chicory has an important drawback since the self-incompatibility is never 100% and there are 10-20% self-compatible plants among the F_1 descendent. *In vitro* culture systems and especially *in vitro* vegetative propagation could overcome this problem by maintaining the heterozis effect and cloning regeneration of the witloof hybrids. The aim of this experience was to establish an optimum culture medium for each hybrid studied (‘Bea’, ‘Turbo’, ‘Zoom’, ‘Totem’ and ‘Fiero’). The starting material consisted in young plantlets obtained by *in vitro* sowing on sterile culture medium, transferred afterwards on two different culture media: Murashige&Skoog (1962) and Quoirin&Lepoivre (1977) with different concentrations in salts and hormones. The final results of this work showed the influence of culture medium and hormonal balance upon the witloof chicory regeneration rate and length, pointing out the best combination for each hybrid studied.

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THE BENEFICENT ASSOCIATIONS OF HORTICULTURAL PLANTS

PAUL DOBRE, NINA MUSAT, MADALINA IVASCU

Key words: ecological culture, repellent plants, Colorado roach, chrysanthemum.

As part of our experiments, we tested the repellent effect of the chrysanthemum species upon the potato culture. During the vegetation there was no attack of the Colorado roach in this culture.

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THE BEHAVIOUR OF NEW SALAD CULTIVARS IN ASSOCIATED TOMATO CULTURE, IN TUNNELS

ELENA DOBRIN, N. ATANASIU, LILIANA BĂDULESCU

Key words: salad, cultivars, tunnel, associated culture

The salad is a very used species in human alimentation, especially in cold period, when the fresh vegetable assortment is poor represent.

The aim of this paper is to establish the behaviour of 6 new salad cultivars – commercialized by the Clause Co. – in associated culture with tomato. The experimental cultivars – Lollo rossa, Amelia, Martina, Kendo, Clx 1201, Saladin – belong to different salad types and hold a good position in the respective world assortment.

In the last years, there is an international tendency to cultivate new salad forms and sorts, with a great variety of forms, colours and fineness.

Therefore, the local assortment must be diversified by new salad sort cultivation.

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RESEARCHES REGARDING BROCCOLI IN DIFFERENT FIELD CROP SYSTEMS

ELENA DOBRIN, RUXANDRA CIOFU

Key words: broccoli, assortment, culture systems

ABSTRACT

Broccoli is a less known and cultivated species in our country, but in the future it could become an important species inside the assortment from Romania because of the special nutritive qualities and ecological plasticity. The paper is presenting results about the settling of culture periods in order to assure a better phasing of harvestings and consumption at broccoli.

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COMPARISON BETWEEN SOME BRUSSELS SPROUTS CULTIVAR

ELENA DOBRIN, RUXANDRA CIOFU, LILIANA TUDOREAN

Key words: assortment, Brussells spouts, cultivars, cultivation

ABSTRACT

The Brussels sprouts is one of "less known"` species, but it can be considerate as a species which will be well integrated on the Romanian market in the near future. The aim of the present paper was to analyze a number of cultivars, especially in respects with their behaviour in production and the yield level.

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STUDIES REGARDING THE CONTAINER SIZE INFLUENCE TO TRANSPLANT QUALITY, VEGETATIVE PERIOD AND LETTUCE YIELD GROWN IN HIGH TUNNEL

ELENA DRĂGHICI

Key Words: lettuce, container size, transplant

ABSTRACT

In this study we followed the influence of container size on the quality and the product at the lettuce. We obtained the average mass of lettuce plant bigger in a shorter period from the transplant realised in bigger container size.

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STUDIES REGARDING UNIFORMITY OF PRODUCTION FOR SOME NEW TOMATO HYBRIDS GROWN IN GREENHOUSE

ELENA DRAGHICI, GH. BUDOI, O. PETRA, CREOLA BREZEANU

Key words: hybrid, fruit, average weight, uniformity

ABSTRACT

In this study we followed the reaction of seven tomato hybrids grown in greenhouse conditions. We characterised them from fruit uniformity point of view. An index of uniformity for fruit number, average mass of fruit and total yield production was calculated. On this basis we evaluated these hybrids.

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INFLUENCE OF THERMOPHYSICALY PARAMETERS ON DRYING PROCESS OF TOMATOES

EPURE D.G., A. MITROI,
W. MUELBAUER, ALINA UDROIU

Key words: drying, dried vegetables, air temperature, air velocity, relative humidity

ABSTRACT

The laboratory dryer was created at the Institute for Agricultural Engineering in the Tropics and Subtropics, Hohenheim University. Main advantage of that consists in possibility to be regulated with high accuracy to maintain the different drying condition. Local processing of dried vegetables could have a significant contribution to provide farmers with regular income. High-energy consumption and the lack of knowledge of optimum drying parameters increase drying cost significantly. To optimise the drying process were investigated the impact of drying parameters on the kinetics of drying. By research work, the authors gave a contribution to develop a proper technology for drying of vegetables. That is an important tool to produce a high quality dried vegetables at minimum cost and energy consumption. Those products may find a place in a market as distinctive quality or as raw material for industrial application. Out of all vegetables grown in Romania, a tomato was used into that experiment.

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A NEW CREATION S.C. UNISEM S.A. OF EGGPLANTS - NICULINA

GH. GLĂMAN, NICULINA POPA, GH. POPA

ABSTRACT

'NICULINA' is a new eggplant variety, with several uses in culinary art, as well as for industrialisation.

It has been obtained through individual repeated selection, during 1996-2000, the initial material being a local population of eggplants, tested in ISTIS stations during 2000-2002 and homologated in February 2003. At present it is in process of conservative selection for remultiplication in Scânteia farm - S.C. UNISEM S.A. Ialomiţa branch, on a surface of 3 ha.

It is a mid early variety, requiring 118 –125 days from spring till the maturity of first fruits. It has a good production capacity, 35-40 t/ha, with fruits of high quality and attractive commercial aspect. This variety has a high tolerance at *Verticilium dahliae* and *Pseudomonas solanocearum*.

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THE INFLUENCE OF SOME TECHNOLOGICAL MEASURES ON ECONOMIC PROFITABILITY (ECONOMIC RESULTS) IN TOMATOES GROWN IN GEO-THERMAL WATER HEATED GLASS-HOUSES

HORGOŞ, A., DOINA OGLEJAN,
ALEXANDRA BECHERESCU, BULBOACĂ, T.

Key words: technological measures, economic efficiency, expenses, incomes, and profitability rate.

ABSTRACT

Qualitative and quantitative levels in yield together with the higher marketing price than cost price determines most of the economic efficiency of a crop. In this study we showed the share of profitability rate of some technological measures such as: diminishing expenses on seeds due to optimising growth axial system (diminution with 50% of seeds by plant growth guidance on two stems in the 1st production cycle); total diminution of expenses on seeds in the 2nd cycle by using seedlings obtained from rooting of shoots eliminated from plants by pruning; achieving a yield increase as an effect of improving fertilising with modern fertilisers (of the Kemira-Cropcare and Ferticare type) by dripping irrigation (fertirrigation), which implicitly results in greater incomes.

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RESEARCHES REGARDING THE PLANTING DISTANCE ON WITLOOF ROOTS PRODUCE

GHEORGHIŢA HOZA

Key words: witloof, planting distance

ABSTRACT

In the present research had been studied three variants of plants thinning in row, maintaining the same distance between the rows. The culture density, according to the three variants was of 625000 pl/ha at V1, 277777 pl/ha at V2 and 227272 pl/ha at V3. On the results obtained had been costated that the best variant was V3 with a density of 227272 pl/ha. In this case, the witloof roots had superior morphological characteristics, comparatively with the other variants: the colet diameter of 4.3 cm, the roots length of 22.9 cm and the roots weight of 88.6 g. The total roots production was of 20.3 t/ha and the over 3 cm diameter roots production was of 19 t/ha.

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MANAGEMENT OF INTEGRATED CONTROL OF THE WEED WITH HERBICIDES FROM CIG CÂMPIA TURZII IN ONION AND TOMATOES

MIRON V., IOSIF V., SAVULESCU I.,
STURZA F., RUSU NICOLETA

Key words: tomato, onion, herbicide

ABSTRACT

The usage of the high potential yielding ability of the new cultivars, in a more complex way, by efficient technologies, represents the fundamental problem of any agriculture system, which aims to a high productivity. The modern technologies of crop production give a great importance to identification and control of the diseases, pests and weeds in order to reduce the losses caused by these factors.

The concept of integrated control appeared at the beginning of ’70 and implies drawing up some technologies, which join together all the methods of prevention and control in order to obtain the best results from the economical point of view. This concept does not exclude the utilization of chemical products, but their use in a rational way, in minimum but efficient doses and their replacement in some technological links with other methods which can assure at least effectiveness in the weed control.

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RESEARCHES REGARDING THE INFLUENCE OF TOMATO HYBRID ON PRODUCTION AND ACCUMULATION OF NUTRITIVE ELEMENTS IN FRUITS

GABRIELA NEAŢĂ, ELENA DRĂGHICI, PETRA O.

Key words: Tomato hybrid, quality, quantity

ABSTRACT

In last time a lot of tomato hybrids are introduced in our country without being tested. The authors of this research want to test six Holland hybrids to characterize in greenhouse conditions for cycle I from the point of view of uniformity of fruits, high crop and quality. Researches were carried out in one of the greenhouses of University of Agronomic Sciences and Veterinary Medicine Bucharest in 2002/2003 years. The variants were: V1-Marissa, V2- Cyndel, V3- Velasco, V4-Gironda, V5- Aurelius, V6-Yakut

The accumulation of nutritive elements in tomato fruits was low in nitrogen and had normal levels of potassium and phosphorus. Nitrates accumulation, a dangerous compound for the quality of tomato fruits was low; the values were under the maximum admissible limits of 150ppm. Yakut hybrid presented the highest earlier crop (kg/m^2) and it could be recommended for glasshouse culture in the 1^{st} cycle.

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VITICULTURE AND OENOLOGY

THE INFLUENCE OF THE ROOTSTOCK ON THE ANTHOCYAN CONTENT OF THE GRAPES AND WINES OBTAINED FROM PINOT NOIR CLONES

ARINA OANA ANTOCE, MARINELA VICUŢA STROE,
IOAN NĂMOLOŞANU, ELENA HEROIU

Key words: Pinot noir, rootstock, wine colour, CIELAB method

ABSTRACT

This work presents the results concerning the influence of the rootstocks SO_4-5 and 3309-111 on the anthocyan content of the grapes of 3 different Pinot noir clones in the conditions of the Stefaneşti - Argeş vineyard, as well as their influence on the colour characteristics of the wines obtained. The CIELAB colour parameters *L, a, b, c* and *h* were determined and the differences among the wines were discussed.

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THE INFLUENCE OF THE ROOTSTOCK ON THE COLOUR PARAMETERS OF THE WINES OBTAINED FROM PINOT NOIR CLONES CULTIVATED IN THE STEFANESTI REGION

ARINA OANA ANTOCE, MARINELA VICUŢA STROE,
IOAN NĂMOLOŞANU, ELENA HEROIU

Key words: Pinot noir, rootstock, wine colour, CIELAB 76 method

ABSTRACT

This work presents the results on the variation of the tri-stimulus values of the colour of wines produced from 3 different Pinot noir clones grafted on the rootstocks SO_4-5 and 3309-111. The CIELAB 76 colour parameters *L, a, b, c* and *h* were determined and the differences among the wines were calculated and discussed in comparison with a standard Pinot noir wine. The differences for colour parameters and for the total colour, ΔE, were also evaluated for every clone grafted on both rootstocks, considering as control the clone grafted on 3309-111.

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A SURVEY OF ROMANIAN CONSUMERS OF ALCOHOLIC DRINKS: SOME DIFFERENCES BETWEEN GENDERS

ANTOCE OANA ARINA

Key words: survey, opinion poll, alcoholic drinks, men, women, gender

ABSTRACT

A survey was conducted to gather various information regarding the general preferences, perceptions, tendencies, opinions and knowledge of Romanian consumers of alcoholic drinks. The survey showed that the proportion of men who consume alcoholic beverages is higher than that of women. Analysis of the responses indicated that, although in many aspects the opinions of men and women are quite similar, there are also some aspects on which the opinions of the two genders differ. Despite the relatively small scale of the sample, the differences between women' and men's preferences was found to be statistically significant in a number of situations.

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PERSONAL PREFERENCES ABOUT WINES AS INDICATED BY A SURVEY OF ROMANIAN CONSUMERS

ANTOCE OANA ARINA

Key words: survey, opinion poll, consumers, preferences, wine

ABSTRACT

Part of the data gathered from a survey regarding the general preferences, perceptions, tendencies, opinions and knowledge of Romanian consumers of alcoholic drinks was analyzed aiming to discern the most wanted as well as the most unwanted features that these consumers recognize in a wine. The results thus obtained suggest that many of the likes and dislikes of the majority of wine consumers in Romania are dictated by the actual situation on the wine market – where there are still many wines insufficiently stabilized or with flaws of taste, aroma or colour.

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THE AGE OF THE CONSUMERS AND ITS INFLUENCE ON THE CONSUMPTION OF BEVERAGES IN ROMANIA

ANTOCE OANA ARINA

Key words: survey, opinion poll, wine, beer, spirits, non-alcoholic drinks, age

ABSTRACT

A survey was conducted regarding the general preferences, perceptions, tendencies, opinions and knowledge of Romanian consumers of alcoholic drinks. Analysis of the database thus created suggests certain differences regarding personal preferences and habits between consumers belonging to different age groups. It was found that, in general, the majority of consumers, of all ages, usually select an alcoholic drink, rather than a non-alcoholic one. Among those consumers who choose alcoholic drinks, wine is the most popular in almost any situation – although there are exceptions, such beer preferred by young people at a party, or by most people when it comes to have a drink while watching a sport event.

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RESEARCH CONCERNING THE VARIATION CONTENT IN LEAVES' PIGMENTS AT DIFERENT TYPES OF PRUNING AND BUD LOADS WITH GRAPEVINE

MIHAELA BELEA, L. DEJEU,
LILIANA BĂDULESCU, I. BURZO

Key words: grapevine, pruning, chlorophyll, carotenoids

ABSTRACT

This paper investigates the variation of chlorophyll and carotenoid contents of Fetească regală cultivar leaves, clone 21 B1, on Kober 5 BB rootstock at 4 pruning types (multiple Guyot, Guyot on demi-high stem, Cazenave cordon, spur-pruned cordon) and 3 bud loads (10; 15; 20 buds/m^2). The total chlorophyll and chlorophyll ***a*** contents increase during plant growth and development from flowering to veraison – without significant differences between variants, then decrease to grape ripening, most evident for multiple Guyot pruning and 10 buds/m^2 load. There is a significant correlation between the total chlorophyll accumulation and photosynthesis rate, too. The carotenoid content varied little between different types of pruning and bud loads.

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THE GLYCEROL FORMING AND ITS INFLUENCE UPON THE WINES

GEORGETA BELENIUC, MARIN GH.

Keywords: Inoculation, prefermentation period, alcohol, total acidity, volatile acidity, glycerol.

ABSTRACT

One of the secondary product of alcoholic fermentation, glycerol has the greatest importance due to its favourable influence on organoleptic properties of wines. Its synthesis depends upon many factors. This study was conducted under laboratory conditions, using selected yeast strains from the Murfatlar Research Station yeast collection, belonging to the *Saccharomyces ellipsoideus*, *S. bayanus* and *S. italicus* species. The fermentation medium was Pinot gris must which was inoculated with 1.5 to 1.7 x 10^7 cells/ ml. The objective was to enumerate the importance of several factors that determine wine glycerol concentration (e.g. must sugar and glycerol, inoculum's concentration, fermentation temperature and yeast species). The glycerol produced was determined by volumetric method with potassium periodat. The result were: Depending of the grapevine variety and sugar content of the must, glycerol concentration of the grapes varies between 1.70 to 3.02 g/l; The inoculation rate had not an influence on the glycerol concentration of wines; The most glycerol was formed in the first 2 to 3 days of fermentation; in this period 80 to 90 g/l of the initial sugar decreased and about 2/3 of the glycerol was formed; The most glycerol was obtained at fermentation temperatures of 20^0C and 25^0C; A fermentation temperature >30^0C leads to a decrease of glycerol formation; Yeast species and the sugar content had the greatest contribution to glycerol formation. Among the strains tested, SE-2, belonging to *Saccharomyces ellipsoideus* species was notable. This strain produced the highest glycerol concentration in wines (7.80 to 9.20 g/l) and did not produce foam during fermentation.

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SOME ASPECTS OF KNOWLEDGE REGARDING THE VINE'S ENERGETIC PRODUCTIVITY IN BIHOR VITICULTURAL AREA

CHEREGI VIOREL

Key words: productivity, conversion coefficient, photosynthesis

ABSTRACT

Productivity is estimated according to the economical importance of the main product accomplished per surface unit. To understand the complexity of the factors that the viticultural yield depends on, by referring especially to the productivity, there is the necessity of expressing into measurable units both the outputs regarding the production of grapes as well as the value of the main product's content.

The viticultural specialists measure the yield capacity according to the efficiency with which the plant succeeds in converting the solar energy into potential chemical energy.

The possibility of expressing into measurable units the energy consumption necessary for accomplishing the grape production and of the final result let us interfere in the process of viticultural production through agro-phyto-technical measures, in the context of increasing the conversion coefficient of the solar energy into chemical energy and of decreasing the consumption of energy on the product unit.

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SOME ASPECTS OF INTEGRATED CONTROL OF PESTS AND DISEASES AT VINE

CHEREGI V.

Key words: treatment, biotechnology, biopreparations, integrated control

ABSTRACT

For the efficient control of pests and diseases in the vineyards, during the vegetation period 6 – 7 treatments are applied, mostly with chemical insecto-fungicides toxic for the useful fauna within the viticultural ecosystem, presenting some pollution risks of the grapes and wine.

The solution for the removal of these shortcomings from the viticultural practice is represented by the integrated protection which harmoniously combines the results of the physical, chemical, agro-phyto-technical, biological means of control and which have as an objective the reduction to minimum of the number of treatments.

The present paper has in view the biological control of the grey rot of the grapes with Trichodex 25 WP, and of the grapes' moth by using the biopreparations and sexual synthetically pheromones**.**

In comparison with the chemical control of pests and diseases, the biological control presents the following advantages: removes the toxicity risks, reduces the risk of environmental pollution, reduces the risk of residues in the viticultural products, removes and reduces the negative influence of the chemical substances upon the useful organisms, etc. As disadvantages we can mention: a low biological efficiency, oscillator efficiency, the necessity of some ecology and biology knowledge, etc.

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THE PROGNOSIS, WARNING AND CONTROL OF THE MAIN PESTS AND DISEASES AT VINE IN DIOSIG VINEYARD

CHEREGI V., BURESCU P.

Key words: vineyard, pathogen agents, diseases, pests.

ABSTRACT

The viticultural plantations within Diosig vineyard are annually exposed to attacks of different pathogen agents and pests. The number, frequency and intensity of their attack are different according to the climatic conditions, the cultivated variety of vine and the circulation of the viticultural sowing material.

There have been studied the causes of the appearance, evolution and spreading of the main pathogen agents, such as: *Plasmmopara viticola*, *Uncinula necator*, *Botriotina fukeliana*, *Botrytis cinerea*, as well as of the following pests: *Lobesia botrana, Boarmia rhomboidaria*, *Panonychus ulmi*, etc.

For Diosig vineyard, there are recommended 3-8 treatments for blight, 4-8 treatments for mildew and 3 treatments for the grey rot of the grapes, according to the climatic conditions.

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THE CUTTING AND GUIDING SYSTEM AT TWO VARIETIES OF VINE CULTIVATED IN SANIOB VITICULTURAL CENTER

CHEREGI V., BURESCU P.

Key words: fruitful, fruitful short cord, fruitful plug, cutting system

ABSTRACT

The application of crop technologies with a maximum efficiency in viticulture is necessary due to the increase of the economical profit of this sector. It has in view the promotion of those technologies that lead to the diminution of the labour force consumes, without affecting the quality and quantity of the production. In this technologies there are included the cutting and guiding system applied to the vine.

In 2000-2002, an experiment took place within Saniob viticultural centre regarding the cutting in short plugs as a measure of rationalizing the cutting.

It was noticed that the cutting in short plugs of two eyes doesn't affect the quantity and quality of the production, in comparison with the cutting in plugs and short cords this type of cutting reduces a lot the phenomenon of removing the fruitful elements.

By applying this type of cutting, the work is simplified a lot and it can be made by unskilled staff leading to a productivity of work and to a higher economical efficiency.

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ANTIEROSION METHODS IMPROVEMENT OF THE SLOPPY LANDS RECLAMATION FOR VINE CROP

CHEREGI V., BURESCU P.

Key words: antierosion reclamation, terrace, slope

ABSTRACT

At present, over 70% of the vine cultivated surfaces in Romania can be found in the elevated area, fact that ascertains that the vine exploits the sloppy lands at their best.

The reclamation of the sloppy plots is made in order set up new viticultural plantations and to control the soil erosion. There are 4 types of reclamations, such as: reclamation with the plantations of rows on the direction of contour line; with the plantations of rows on the contour line and the formation of microterraces in the next years; by terracing, having as a result some terraces of different widths according to the slope of the land; by orientating the rows on the line with the biggest slope, at the end of the rows being found some roads. In the last case, the mechanized works are realized by a swipe.

While the slope of the land increases, the work volume necessary for reclamation and preparation of land for plantation and exploitation increases, too.

The erosion on the high sloppy lands decreases while the terracing is accomplished.

The control of the soil erosion is made by planting the vine on the direction of contour line where the slope of the land ranges from 4 to 14%; when it ranges from 14 to 24% the terracing is realized.

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PERFORMANCES OF FETEASCĂ REGALĂ CULTIVAR ON FIVE TYPES OF PRUNING

L. DEJEU, MIHAELA GEANINA BELEA,
DIANA MEREANU

Key words: grapevine; types of pruning; yield; quality

ABSTRACT

The effects of five types of pruning (multiple Guyot; Guyot with periodically renewed arms; Guyot on demi-high stem; Cazenave cordon; spur-pruned cordon) was followed for three years (2000-2002) in a plantation with 2,2/1,2 m distance.

The differences between types of pruning in terms of pruning weight, yield and sugar accumulation were lower as compared to the influence of the climatic conditions in the experimental year.

The dryness in 2002 favoured the diminishing of the vine vigour and increased sugar accumulations, bigger with 20-25 g/l than those of the previous years.

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GRAPE VINE' S GROWTH-YIELD BALANCE INDEX AND INFLUENCE ON QUALITY

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Key words: grapevine; yield/pruning weight ratio; growth-yield balance index; quality

ABSTRACT

This study presents the influence of five pruning types (multiple Guyot; Guyot with periodically renewed arms; Guyot on demi-hight stem; Cazenave cordon; spur-pruned cordon) and of three bud loads (10; 15 and 20 buds/m^2) on the vine's growth-yield balance with Fetească regală cultivar for obtaining the best qualitative performances. It was performed between 2000 and 2002, on a plantation established in 1995, with a plantation distance of 2.2 x 1.2 m.

To optimize the yield quality, there have been recommended those pruning types and bud loads which assure a medium quantity of wood removed at pruning (0.47-0.60 kg/vine), a "yield/pruning weight" ratio between 4.0 and 5.5, as well as a „growth-yield balance" index of 16-19.

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THE INFLUENCE OF TEMPERATURE OVER FERMENTATION ACTIVITY OF SACCHAROMYCODES LUDWIGII STRAIN, ISOLATED FROM WINE

FELICIA DRAGOMIR

Key words: *Saccharomycodes ludwigii*, fermentation activity.

ABSTRACT

Rarely sun on the grapes an in the fermentation grape juice or the wines, the yeast's which are from *Saccharomycodes ludwigii* species are characterized through the very big resistance to sulph dioxide, being this way specific to the grape juice kept with large doses from this antiseptic. It is considered the pathogen agent of sweet wines which challenge refermentation even they are very sulphites.

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PRELIMINARYS RESULTS CONCERNING THE EFFECT OF PHYSICS PROPERTYS IMPROVEMENT OF THE NOURISHMENT'S SORTIMENT WITH POLIACRYLAMIDS ON THE QUALITY OF WINE-GROWER'S MATERIAL

I.C. DUMITRIU, S. CHIVULETE, M.I. POPESCU, MARIA NASTAC-CURTESCU, STANCU R., MONICA FLEANCU, ADRIANA COSTESCU

Key words: polyacrilamids, Fitpol-C, physics and hydrophysics properties, hydrical stress

ABSTRACT

The utility of Fitpol-C polyacrylamids in the purpose of the decrease of hydrical stress in substratum of rooted is effectuated for:
- Improvement of the physic properties of the nourishment's mixtures;
- Diminish the damps number both in the plaiting materials, both the finalize plantation;
- The stimulation growth and the plants development grow;

At the saint time, the impact of Fitpol-C is presents both in improvement hydrophysical and physical property of the nutritive substratum through:
- The diminish of bulk density (DA), in correlation with growth Fitpol C dose;
- The growth hydrolytic conductivity (K) concomitant with the growth of dose/plant;
- The resistance diminish to penetration (RP) is correlated directly and positive with the bulk density values, together with grow Fitful-C dose.

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THE STUDY OF CALLUSOGENESIS ON GRAPEVINE UNDER GAMMA RADIATION USING THE CORRELATION CURVES BETWEEN CALLUS MASS AND PHYSICAL FACTORS

DANIELA GIOSANU

Key words: gamma irradiation, "in vitro" culture, callus, grapevine, correlation curves.

ABSTRACT

The aim of this paper is to study the influence of physics factor (gamma radiations) upon grapevine callusogenesis by using the correlation curves between callus mass that has been obtained and dose of irradiation.

The research was performed on four grapevine variety: Cabernet-Sauvignon, Avgustovski, Negru de Ialoveni and Muscat de Ialoveni. The explants were inoculated on a Murasige Skoog (1962) basal medium supplemented with optimal concentrations of AIA and BAP and gamma irradiated from the first day, for each explant, in different doses; we also used a not-irradiated control lot.

The interpolare curves were, in all the cases, polinome of three degree. Their equations have significant differences between the control and the other experimental lots. One noticed a negative correlation between the radiation dose and the callus mass that has been obtained.

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THE ESTABLISHMENT OF THE ORIGIN FOR SOME AUTOCHTONOUS VINE VARIETES BY MULTI-VARIABLE STATISTICAL METHODS

ADRIANA INDREAŞ, MARINELA STROE,
LILIANA ROTARU, ALINA MĂRCUŢĂ

Key-words: varieties, vine, cluster analysis, main components analysis

ABSTRACT

One has tried the origin establishment of some varieties belonging to the *Galbenă series* by using some statistical multi-variable methods. One has measured some mature leaf elements, established according to O.I.V. codes, counting 65 for 30 leaves of the 12 studied varieties. Out of the dendrograme analysis, one has determined strong links among varieties groups such as *Zghihară* and *Galbenă de Odobeşti, Alb de Moldova,* and *Cabasmă albă* as also *Bătută neagră* with *Alb românesc*. The only variety not linked to the others is Berbecel variety.

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CHARACTERISTICS OF PHYSICO-CHEMICAL COMPOSITION FOR SEVERAL WINE PRODUCTS OBTAINED FROM BIANCA VARIETY

ION M., KONTEK A., DANIELA PREDA

Key words: concentrated must, grape juice, low alcoholic beverage, wine-brandy

ABSTRACT

The recently developed studies emphasised the suitability of several varieties more or less biologically resistant to diseases and pests for being used both as table grapes, and for producing alcoholic/non-alcoholic beverages and wine-brandy.

The research works undertaken at ICDVV Valea Călugărească within 2000-2002 inside RELANSIN Program aimed at finding out the possibility of using the grapes of the resistant variety Bianca as: concentrated must, juice, low alcoholic beverages of wine-cooler type produced from wine and concentrated must, wine-brandy.

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THE CHARACTERIZATION OF THE ECOCLIMATIC RESOURCES OF "DEALURILE CRAIOVEI" (CRAIOVA HILLS) VINEYARD BY USING THE MULTICRITERIAL METHOD AND BY ESTABLISHING ITS VOCATION FOR SUPERIOR WINE MAKING

OLTEANU I., GIUGEA N., CICHI DANIELA,
COSTEA D.C., MĂRĂCINEANU C.L

Key-words: grapevine, regioning, thermo-hydric balance of oenoclimatic aptitudes

ABSTRACT

The appreciation of the climatic favourability of Dealurile Craiovei vineyard by means of multicriterial methodology of ecoclimatic indexes ((IH, IS, IF) leads to the conclusion that Dealurile Craiovei vineyard is, by its vocation already confirmed, a producer of superior red wines, especially Cabernet Sauvignon and Pinot noir.

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IN VITRO EMBRYO RESCUE OF ABORTIVE OVULES IN BREEDING TABLE GRAPES

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ELENA BUCIUMEANU

Key words: *Vitis viniferae,* ovule culture, zygotic embryos, seedless hybrids.

ABSTRACT

Immature embryos derived from crosses between seeded genitors (Muscat of Alexandria and Coarna neagra, 1-40-7, 1-39-53 clones) and seedless genotypes (Calina and 1-48-25 clone) were cultured *in vitro* in order to obtain new seedless varieties, adapted to different wine-growing areas and presenting qualities demanded by the market. The influence of pollen source, harvest date and media composition on the germination and seedling development were analysed during *in ovulo* embryo culture. From a total number of 1762 ovules inoculated on three different media, an average of 14 % of *in vitro* germinated embryos was obtained. The number of viable embryos was significant higher with ovules provided from crosses with Coarna neagra used as female plant. The best results of *in vitro* germination were obtained with zygotic embryos harvested after 55 days (21.7 %) and inoculated on medium containing IAA and BA, (21.9%). Somatic embryos were observed on the surface of zygotic embryos obtained from Coarna neagra x Calina and 1-40-7 x Calina crosses. They presented normal growth and converted into plants on a specific medium for embryogenesis.

Isoenzyme analyses of peroxidases confirmed the zygotic origin of the regenerated plants obtained from seeded x seedless crosses and showed that all plantlets produced by somatic embryogenesis from a single zygotic embryo were genetically uniform.

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BEHAVIOUR OF THE RESISTANT VARIETY „BIANCA", UNDER THE SPECIFIC CONDITIONS OF VALEA CALUGAREASCA VINEGROWING CENTRE

DANIELA PREDA, ION M., KONTEK A.

Key words: resistant variety, ecological grape, wine products

ABSTRACT

The varieties included in the "resistance" group are quite close to the so-called "ideal vines" that should be productive, qualitative, resistant to diseases and frost. Growing such varieties might be a "reply" to the directly producing hybrids, being recommended for being planted in the small private plantations. The resistant varieties may represent a background for the ecological viticulture and for the ecological final products obtained from grapes.

At the Research & Development Institute for Viticulture and Oenology Valea Călugărească The behaviour of Bianca variety was studied, this variety showing a very good resistance to diseases and pests, having at the same time a high potential of sugar accumulation in grapes that is quite useful in the winemaking process.

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THE BEHAVIOR OF SOME WINES GRAPES VARIETIES RECOMMENDED FOR MURFATLAR VINEYARD IN 2003 YEAR CONDITIONS

AURORA RANCA, CORNELIA BIAN, DIANA BRĂDUCEANU,
VIOLETA ITU, FLORICA GULUȚĂ

Key words: climatic factors

ABSTRACT

The 2003 was warmer and dryer than multiyear mean, fact who affected mainly the quantity of production. Even the vegetative period started later with 2-3 weeks, the harvest time was the same.

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THE MULTICRITERIONAL CLIMATIC CLASSIFICATION CONCERNING THE MOLDAVIAN HILLS REGION AND THE WALLACHIAN AND OLTENIAN HILLS REGION

GEORGETA MIHAELA SAVU, I. NĂMOLOŞANU

Key words: viticultural climate, climatic group

ABSTRACT

In order to make a rational classification, useful in point of viticultural region on Terra, J. Tonietto and A. Carbonneau (2000) suggested the climatic class notion, each settled class being in the position of representing, in a realistic mode, some climatic differences which will give the right reply of the grape vine or of the obtained production, all of this in point of a synthetic indicator.

So, it was suggested a *multicriterional climatic classification*, using three criterions, which are represented by three synthetic indicators: IS, IH and IF. The utilisation of those indicators allowed making an opinion about climatic variability of the viticulture and the adequate settlement of the classification and of the climatic grouping for different viticultural region.

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THE ESTIMATION OF THE ECOCLIMATERICAL CONDITIONS IN THE VITICULTURAL REGION OF THE TRANSYLVANIAN PLATEAU, USING THE SYNTHETIC INDICATORS

GEORGETA MIHAELA SAVU, I. NĂMOLOŞANU

Key words: grape vine, ecoclimat, synthetic indicators

ABSTRACT

The ecoclimate is important for the viticulture especially when we refer to temperature, sunstroke and humidity quantification. These three ecoclimaterical factors are analysed taking into account the daily added values from the conventional vegetation period. The added values or the average of these values can be used, first of all, to evaluate the resources of temperature light and humidity from different vineyards and viticultural centres, and the favourability degree of a certain grape vine cultivation area also depends on those.

Knowing that the above mentioned factors do not act in a singular mode, but always depending on each other, in the last few years, in both international and national level, it has been studied the possibility and the utility of using more synthetic indicators, which integrates one, two or sometimes even three ecoclimaterical factors.

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IMPLICATION OF EUROPEAN ORGANIC VITICULTURE IN ROMANIAN VITICULTURE

DOINA STANESCU, R. TEODORESCU

Key words: organic area, organic viticulture, organic wine, organic wine market.

ABSTRACT

In Europe the organic agriculture is a thriving sector, and in some countries 10 % of agricultural area is organic.

For organic viticulture the percentage of land compared to all vineyards is lower than for organic agriculture. This is because there are some constraints in the sector of production techniques, in marketing, legislation and state support.

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THE STUDY ABOUT DISTRIBUTION OF TERPENES COMPOUND IN DIFFERENT CONSTITUENTS PARTS AT GRAPE

FELICIA STOICA, ELENA HEROIU

Key words: terpenes compound, peel, grape

ABSTRACT

This study emphasize that the content of grapes in the terpenes compound, the fundamental constituents of flavour, are different by variety.

Thus, the Tămâioasă românească and Muscat Ottonel variety have a high content in terpenes compound than Sauvignon variety.

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THE COMPARATIVE RESEARCH OF SOME PINOT NOIR CLONES IN THE CONDITIONS OF THE ŞTEFĂNEŞTI-ARGEŞ VINEYARD DURING 2002-2003

MARINELA STROE, I. NĂMOLOŞANU,
ARINA OANA ANTOCE, C. POPA

Key words: rootstock, clones, Pinot Noir, yield, Ştefăneşti

ABSTRACT

Obtaining quality wines represents an important goal for the present Romania viticulture. The wine quality mostly depends on the production technologies, the applied treatments and last, but not least on the grapes quality. The present work refers to the influence of the cultivation year and of the rootstock on the quality and the yield of three Pinot Noir clones from the Ştefăneşti – Argeş vineyard.

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STUDIES REGARDING THE ABILITY FOR RETURNING TO MULTIPLICATION POTENTIAL AFTER *IN VITRO* CONSERVATION TO LOW TEMPERATURE ON GRAPEVINE

EMILIA VIŞOIU, ELENA BUCIUMEANU,
CARMEN FLORENTINA POPESCU

Key words: grapevine, *in vitro* conservation, multiplication.

ABSTRACT

Grasa de Cotnari 45Pt, Valeria, Donaris and Italia varieties exhibited a different behaviour after 35-40 days of low temperature treatment, depending on their stage of development and stock conditions. The multiplied material (adventitious buds, multiplicities and rooted shoots) that was conserved to 0-1°C necroses in a proportion of 62-77% after their transfer to 25°C. On the contrary, the conservation of plant material to a temperature of 3-4°C proved to be very efficacious for conservation of shoots primordial and adventitious buds (100 %), although a certain degree of necroses were observed to growing tops and the upper leaves of the shoots.

The vital functions became slowly during a longer period of low temperature treatment (50-60 days more) and plant material was able to return to a normal rate of multiplication after their transfer to normal condition of temperature and light.