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FRUIT GROWING & TECHNOLOGY

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A.M. Andrei, V. Fătu, A.C. Fătu, M. Tudorache
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Keywords: entomopathogenic fungi, *Beauveria*, biological control

ABSTRACT

The present study was conducted to determine the natural occurrence of entomogenous fungi in insect populations of fruit-tree growing interest. The most abundant entomopathogenic species was *Beauveria bassiana* (Bals.) Vuill, whose isolates constituted 56% of the total of isolated fungi, Pathogenic fungi, opportunistic pathogens and secondary colonizers were also found.

New breeds and elites with perspective, with genetic resistance against the principal diseases and pests of the pear tree

N. Andreieş, Valeria Petre and Mihaiela Erculescu
Research & Development Tree Growing Station Voineşti

Keywords: *Pyrus serotina*, *Erwinia amylovora*, *Psylla sp*., *Venturia pirina*, hybridization, selection

ABSTRACT

One of the causes determining the regress of the pear culture in Romania was the sensibility of the present assortments' breeds to scurf, bacterial fire and meliferous fleas attack; attack; in order to counteract these shortcomings, in the year 1960 at D.P. Voineşti an improvement program was initiated, having as the principal objective the resistance against the principal diseases of the pear tree, through inter-specific sexuate hybridization, after the backcroos and the modified backcross methods. The first homologated breed, obtained after this method, was the Euras breed (1994), and followed by the breeds: Orizont, Corina (2003) and Tudor (2007). There is a series of selections in different testing stages, selections which have the proprieties required by the proposed selection objectives.

The behaviour of some walnut biotypes in the city of Urseni, county Timiş

Aurelia Blidariu, Olimpia Iordănescu, Roxana Micu, Anca Drăgunescu
Banat's University of Agricultural Sciences and Veterinary Medicine Timişoara

Keywords: walnut, biotypes, biometry, chemical composition

ABSTRACT

Seniority of walnut culture and the fact that it is spread widely in different climatic conditions and soil around the globe have led to the conclusion that the walnut species is a very plastic, easily adaptable one. The long time culture of walnut and its wide spread in different climatic and soil conditions in the world made up the conclusion that the walnut is a very plastic species, easy adaptable. Because of its heterosexual pollination, within the species *Juglans regia* L. there are some trees resistant to frost and others very sensitive, some with late flowering and others with early flowering, resistant to diseases in different ways, productive or less productive. This variability has an advantage because it is possible to choose the most representative biotypes proper for the soil, climatic and economical conditions of each region. On the occasion of propagation is evident that the fruits were chosen, the ones which seemed more valuable and it was a small selection. Natural conditions of the new regions of the outstanding culture may often harsh than those in places of origin of the species have led to a natural selection, by eliminating less rustic biotypes. The best biotypes in Urseni area are considered U 1007, U 1009 and U 1008 as they have a good size and form index and a high percentage of kernel.

The biological efficiency of some products for the combat against the San-José (*Quadraspidiotus perniciosus Comst.*) louse under the conditions of the tree growing Voineşti region

Cecilia Bolbose
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Keywords: apple tree, pest, attack, new insecticides, attack degree.

ABSTRACT

The San-José (*Quadraspidiotus perniciosus Comst.*) louse is an extremely dangerous pest for the Dâmbovița County orchards.

The researches, performed at SCDP Voineşti in the period 2006-2008, present the results regarding the efficiency of some new insecticides, besides the classical insecticides with known biological efficiency, in the combat of the San-José louse. A good efficiency was found at the substances Movento 150 OD in the year 2006, respectively at Movento 150 SC in the year 2007. Also a maximum efficiency was observed in the year 2008 at the mixture of the chemical product Movento 100 SC conc. 0.1% and the mineral oil (Confidor oil) conc. 0.2%, with a mobile grub's mortality of 94.6%.

Some results in Clingstone breeding from south-eastern of Romania

Liana-Melania Dumitru
Research Station of Fruit Growing Constanța

Keywords: clingstone, pavie, fruit quality, can, cultivar

ABSTRACT

In the last years, the clingstone peach or pavie are appreciated more and more. Some of them were cultivated for processing and for fresh consumption too. The goals of this program were to study and obtain new cultivars with superior fruit quality, different ripening time and resistant to diseases.

The influence of the constructive and functional parameters of the sprinkling equipments in tree growing on the qualitative work indices

Gh. Erculescu
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Keywords: pump**,** flow, nozzle, pressure, output, parameter.

ABSTRACT

The rapid development of the new plant protection methods is strongly related to the rapid development of the technical realization means. Hence it is necessary to perform an integration of the research works in the domain of the agro-pharmaceutical products and also in the domain of the sprinkling devices and machines. The diversity of sprinkling devices and machinery, the physical-chemical features of the pesticides, of the pathogens, require particularly pretentious endeavour regarding the preparation, the applying and the evaluation of each treatment. The applying quality consists in assuring a certain commercial product dose (active substance) per surface unit. The assurance of the phytosanitary product dose per surface unit and of the solution repartition uniformity (the quality working indices) – the principal conditions for the realization of a treatment - depend on respecting the solution norm, its concentration and the constructive and functional parameters of the sprinkling machinery's active organs.

Integrated management of weed control in stone-fruit orchard in a sustainable agriculture

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**National Institute of Mechanical Agriculture Bucharest

Keywords: environmental protection, agrotechnical methods, gliyphosate, postemergency period, control efficacy

ABSTRACT

This study aimed to design an assessment program for the efficacy of agrotechnical methods compared with the chemicals ones, in stone orchards. The result of the observations showed that agrotechnical methods assure an satisfactory efficacy level in weeds control and the best results showed on the mulching variant plots. On the scything plot, though the weeds control was not completely diminished, after the three consecutive scything, the weeds were kept at an unharmful growth level, for the trees. The weeds are also unable to store nutrient reserves to survive over the winter.

Though the highest efficacy level in weeds control was achieved by the chemical methods, they are not recommended in a sustainable agriculture. As chemicals for the weeds control plot we have used herbicides based on gliyphosate, to protect the useful fauna and also because they showed to be easily degradable in soil and residual deposits free in fruits.

On the mulching plot, this method assured o very good weeds control and could be easily applied with low costs. Unless it showed a good weeds control, especially on the perennial ones, mulching layer showed also to have a fertilizing effect on the soil, contributing to the organic enrichment of the ground.

Research regarding the influence of distances between plants on saplings in Sapling's School

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University of Craiova

Keywords: transplanted, seeded, nursery, saplings

ABSTRACT

Classic technology for producing grafted trees supposes the existence of three years cycles for generative multiplication (in the first year we get rootstock, in the second year we graft the rootstock and finally at the end of the third year we get the grafted tree). On can seed directly in field I but the saplings are uniform less and they have taproot. In Europe, the technology of producing grafted trees extends on two years. We consider it is necessary try to reduce the time of producing grafted trees by improving some technological sequences of classical technology.

Researches concerning the influence of late frosts upon the apricot production of some varieties cultivated in conditions of the Didactic Station Timişoara

Olimpia Iordănescu, Roxana Micu, Aurelia Blidariu, Anca Drăgunescu
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Keywords: apricot, varieties, late frosts, phenophases, production

ABSTRACT

The apricot tree is one of the most sensitive species to late frosts in our country. Due to its early beginning of phenophases and early flowering, it frequently gets affected by the late frosts that come in spring. During 2006-2008, twelve varieties of apricot cultivated in conditions of the Didactic Station of our University were observed and studied: Earlyryl, Dana, Neptun, Saturn, Cea mai bună de Ungaria (witness), Venus, Callatis, Sulina, Favorit, Selena, Silvana and Olimp. There were noted the development of fruiting phenophases of these species and the influence of the climatic conditions in that period upon the fruit binding degree and the production in summer. The best productions were obtained in 2006, because the flowers and the bind fruits were not affected by late frosts, as the temperatures were higher. The damages were observed in 2007 and 2008 when, because of the high temperatures in February, the apricot trees started their phenophases and they were strongly affected by the late frosts in March. Concerning the production of apricots per tree, in 2006 the best production was given by Venus variety, in 2007 the witness „Cea mai bună de Ungaria" and in 2008 we could remark Favorit variety as having the highest production per tree.

Preliminary studies in designing for mathematical pattern for the apricot dieback

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Keywords: stone fruit trees, cryptogamic diseases, ecological elements

ABSTRACT

The ecological debilitation and the biological dieback of the apricot is a phenomenon frequently encountered in the plantations from Romania, with different intensities in accordance with the cultivated soil, the area climatic conditions, trees' phenology, lignicolous fungi development conditions, pathogens' virulence. From branches of trees starting decline, pathogenic fungi with lignicolous behavior have been isolated, such as: from stem and branches older than 2 years – *Monilinia laxa, Cytospora cincta, Eutypa lata, Schizophyllium commune, Stereum purpureum, Coniothyrium amygdali;* from root and collar*: Cylindrocarpon radicicola, Fusarium sambucinum* The attack moment, determined by the climatic conditions that increase the host plant's sensitivity (temperature, rainfall) and the pathogen's virulence; the phenology phase of the host plant development; apricot physiology; the moment when the plant is the most sensitive – in the autumn when the leaves fall until April next year.

Preliminary results concerning the fruit rate-setting in peach tree by fruiting pruning

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Keywords: peach tree, fruiting pruning, rate-setting, load of fruits

ABSTRACT

The peach tree is one of the most valuable fruit species mainly because of fruit's quality. The peaches are nice coloured fruits, flavoured, juicy, with excellent taste, rich in organic and mineral substances. All the different types of peaches, including industrial peaches and nectarines, have a phasing ripening of over 100 days, from 15-20 June until September, giving fruits to the consumers for a long period. The experiment was placed in Periam, the studied varieties being: Spring Lady, Caldesi 2000, Nectaross and Maja. The trees were grafted on peach and they were planted at the distance 4.0 x 2.5 m, having a density of 1000 trees/hectare. The rate-setting of fruiting branches (mixed branches) was made considering the age of the trees (4 years), their vigour and high density in the orchard, being chosen only the vigorous mixed branches. In 2008, all the peach varieties, mainly the nectarines (Caldesi 2000 variety) had twin fruits, some times triple or even four fruits. This situation is due to the double pistils and to the flower buds that are very close one to another, which led to the union of the closed fruits. This is the main reason why the fruit rate-setting is necessary in the peach tree culture technology. A proper number of fruits left on the tree will give superior quality fruits, richer in sugars and less acidity, with a normal weight, adequate to the variety.

Soil maintaining methods implied in the apples quantity and quality increase in the intensive orchards

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Tree Growing Research & Development Station Voineşti

Keywords: apple tree breeds, vegetative tree growing, production, ecological weed combat

ABSTRACT

The researches performed at the Tree Growing Research & Development Station Voineşti in the period 2004 – 2007 point out some soil maintenance methods with beneficial influences on maintaining the soil fertility and humidity status in the drought periods. Among the soil maintenance methods, the variant implied in the apples quantity and quality increase is that with the soil lying fallow on the interval and with the soil covered up on the trees row, which maintains a high humidity in the roots zone and a temperature with minimum variations, prevents the weeds growth on the trees row, without herbicide intervention – and in the same time contributes to the increase of the organic material content, due to the decomposition in time of the vegetal material, resulting from the grass mowing from the interval between the tree rows or under the crown projection.

Drip irrigation in the nursery – technological measure for increasing of economic efficiency

Stănică F., Grivu P., Georgeta Temocico, Alecu Eugenia
University of Agronomic Sciences and Veterinary Medicine Bucharest

ABSTRACT

In the nursery, the obtaining of high productions of tree on surface unit, which generate consistent profits, is necessary to use performing technologies.

There are two technological sequences in the nursery practice which must be appreciated simultaneously: irrigation and fertilization.

On the Istrita Nursery, which is located in the steppe area, the climatic conditions of the latest years can be described as pour in precipitations. In this case, the rational furnishing of water irrigation in the nursery, on the entire vegetation cycle is a necessity.

The Istrita Nursery has a classic irrigation system, which is often inefficient (problems in springtime with water supply, and also in summer with inconstancy of the water debit). All this difficulties generate:

- high lost of graft trees (50% in the arid years), specially on the case of some tree species. Because of the lack of water in the early spring a high graft eye drop off, get late in life or staying dormant.
- decreasing or diminishing of the standard trees as products the nursery

Researches regarding climatic conditions interaction over apricot culture in Dobrogea

Elena Topor
Research Station for Fruit Growing Constanța

Keywords: climatic changes, *Prunus armeniaca*, assortment, cultivar

ABSTRACT

The apricot, which is a fond species warmth, found from always good growth conditions and bearing in south-east zone of Romania and particularly in Dobrogea. The climatic changes recorded in last ten years effected negative over apricot culture, effect which was perceived differentiated depending on the cultivar and the biology of this. The effected studies and the outcomes demonstrate important cultivated cultivars of assortment choice on zones and allow the choice to the most appropriate cultivars to the clime conditions and specifics soil of each zone.

Researches regarding the herbicides applications influences over the peach-trees plantations

Aurora Venig
S.C.D.P. Bihor

Keywords: Prunus persica, postemergent weed control

ABSTRACT

This research represents the synthesis of the experimental results that were carried out in 2007, at S.C.D.P. Bihor, by using 11 kinds of postemergent herbicides applied on a four years old peach-trees plantation. The made reproof and analysis were concerning the followings: the wild-growing plants' number/m^2, their weight/m^2, the plants' vegetation evolution, their extension after E.W.R.C. and the phytotoxic effect over the grafted trees. The obtained results show that after using the 11 kinds of herbicides, the number and weight of the monocotyledonous and dicotyledonous wild-growing plants were low and there was no phytotoxic effect over the grafted trees from the orchard.

The behaviour of some cherry varieties in the plain conditions of the north-western part of the country

Aurora Venig
S.C.D.P. Bihor

ABSTRACT

This research resembles the results of some reproof made during two years (2007 and 2008) on nine cherry varieties at S.C.D.P Bihor. The reproof were concerning: crown's diameter on the rows and between the rows, trees' height, crown' height, trunk's diameter, development of the fruit-bearing phases. Related to the obtained results, all nine cherry varieties were divided up to the vigour in three categories (low, middle and high vigour) and concerning the fruit-bearing phases in other three categories: early, middle, late. These results take an important place in establishing the planting distance.

Research on the importance of leaf-falling chemical treatment against *Stigmina carpophila* fungus

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University of Agronomic Sciences and Veterinary Medicine Bucharest

Keywords: *Stigmina carpophila*, chemical treatment, drupaceous species, fungus, fungicides

ABSTRACT

Over the past few years, there has been growing interest in fruit-tree growing, mainly in the drupaceous species. Based on either indigenous or imported varieties, the plantations must be given particular attention to their phytosanitary aspects, especially to the disease known as leaf spot caused by the pathogen *Stigmina carpophila*. The symptoms of the disease occur on the leaves as red-purple spots resulting in the fall of the attacked tissue and leaf perforation; lesions occur on the leaves, and the fruit become rugged which decreases the commercial value. Considering that conidium's germination occurs between 2-32ºC, and the conidia are present in the atmosphere all year round, infection is possible in any season, particularly in autumn when leaves are falling. Thus, this phenophase requires chemical treatment.

Phytosanitary condition of fruit-tree species in the Bucharest area in 2008

C.R. Zală, Stelica Cristea, D.I. Marin, E. Docea, Carmen Mihaela Cristea
University of Agronomic Sciences and Veterinary Medicine Bucharest

Keywords: attack degree, diseases, fruit trees

ABSTRACT

Part of the biotic factors represented by a large range of phytopathogen viruses, bacteria and fungi lead to diseases that significantly limit the fruit-tree yields. For modern plantations and their advanced technology, it is necessary to know the occurrence and spreading of these pathogens on a certain area, as well as their evolution in time and space, together with the main determining factors, particularly the weather. These issues will support the organisation and application, in due time, of the prophylactic and disease control actions. Observations and measurements have been performed on seed species (apple, pear, quince), drupes (cherry, sour cherry, peach, nectarine, apricot), nut and mulberry tree. Climatically, the year 2008 was very favourable to the occurrence and spreading of an important number of pathogens in fruit-tree growing.

VITICULTURE&OENOLOGY

Application of an ecological favourability index for the analysis of the production potential of the Viticultural Centre Pietroasa under the conditions of ecological viticulture

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**Institute for Research and Development of Vine and Wine Valea Calugărească

Keywords: ecologic viticulture, organic viticulture, ecological viticultural index

ABSTRACT

In recent years considerable interest has been building up among our vine growers regarding ecological viticulture, which is enjoying strong development in other wine producing countries. An important step in the successful establishment of an ecological plantation of grapevine is the thorough evaluation and selection of the plot of land, taking into consideration all the specific requirements of ecological viticulture. This paper presents a new indicator named "ecological favourability index" or EFI which is based on the bioclimatic index of grapevine defined by Constantinescu in 1964, but also takes into account the specific effects of the land exposure and slope in relation to the degree of attach of diseases and pests against grapevine. The new index is applied to the evaluation of the suitability of the land in the Viticultural Centre of Pietroasa for ecological viticulture.

Studies regarding the evaluation of the performance characteristics in order to validate a method for iron determination from wines using flame atomic absorption spectrometry

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**University of Bucharest

Keywords: iron, wines, FAAS, selectivity, linearity, limit of detection, limit of quantification

ABSTRACT

The aim of this paper is to evaluate the performance capabilities of a method for iron determination from wine samples. The used analytic technique is flame atomic absorption spectrometry (FAAS) with nitrogen oxide/acetylene flame after calcinations and uses the simple calibration method. It were followed the performance characteristics of the method. Thus, it were established the limit of detection (0.1068 mg/L), determination limits (0.3561 mg/L), range (1.5÷15mg/L), linearity (R=0.9998).

Influence of the grafting wax types used for vine grafting on callosing during the forcing period and on vine quality within vine school

C. Burlacu
Research and Development Institute for Wine Growing and Vinification Valea Călugărească

Keywords: propagation, soudure, grapevine, grafting, cutting

INTRODUCTION

The research on the influence of grafting wax types used for vine grafting on callosing has been conducted in order to reduce the material losses in the forcing greenhouse as well as after field plantation, determined by uneven callosing in the grafting point. The modernization of the grafted vine facilities led to studying the factors which determine very good quality grafted vine.

The research conducted in Romania has proven the positive influence of certain stimulating substances on vine yield. During the last years it has been studied especially the influence of stimulators such as beta-indolil-acetic acid on tissues reconstruction and rooting stimulation.

Preliminary results regarding the influence of agro technique system on soil microbiology and grape

I.C. Dumitriu, Monica Motounu, Cristian Popescu
University of Piteşti

Keywords: green fertilizers, soil respiration, micro organisms, private vineyards

ABSTRACT

Soil cover corresponding to the global earth and was elaborated as erosion succession and transformation chemical – physics processes and the accumulated organic matter from plants, animals is a favorable habitat for developing of microorganisms (bacteria, fungus, algae). Microorganisms are a lot in the soil.

A lot of microorganism from soil is inactivated due the fact that at one moment the nutritive substances can be deficiency. Microorganism has an important role in the chemical reaction from soil, increasing the soil fertility.

Parts from soil microorganisms are responsible with disintegrate the organic matter from soil. Fungus increasing the availability of mineral nutrients for plants, agro bacterium bacteria increasing the nitrate nutrients from soil, in this sense in microorganisms will be used as bio fertilizers.

Another's microorganisms synthesis and eliminated vitamins in the soil which increasing the health of plants and their productivity, these are considerate phyto stimulators.

Integrated Crop Management solutions to increase quantity and quality of the yield in viticulture at Pietroasele – 2006

I. Enoiu

Keywords: *Integrated Crop Management (ICM), main issues, targets, ag. chem, products, influences on crop and yield.*

ABSTRACT

Establishing an ICM programme should take into account the regular soil and the climatic conditions, history of the plantation, main targets for the current year, but for the coming years as well.

Product used should cover harmful agents control, improve resistance to the abnormal climatic conditions, improve resistance to the harmful agents and enhance the quality and quantity of the yield.

All the products used had to prevent accumulation, harmful agents' resistance, insure a good ripening both for grapes and wood.

Preliminary results concerning the biological control of some vine pest by using extracts of vegetable products

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Research and Development Station for Viticulture and Winemaking Murfatlar

INTRODUCTION

Obtaining grapes from a bio culture is a chance not at all to be neglected for Romanian viticulture and the small but natural productions which this type of technology guarantee them can be sustained by the prices which the occidental market offers them today.

The insecticides of vegetable origin are fitopharmaceutic products extracted from plants, with contact and ingestion action causes the death of the insects through paralysis. It presents the advantage that the insecticide effect disappears quickly and it won't leave any residue being suitable very well for bio culture (Bobit Dana s. 2001; 2003).

Testing the effectiveness of some medicinal and aromatic plants extract and even some vegetable have like target, the reconsideration of the roles and recognition of their place in promotion of a healthy viticultures witch protects the environment in the vine plantation (Ciulei S. 1993; Dejeu S. 1997). These experiments demonstrate the possibility of resolving the problem of vine pest control with low costs.

Morphological and anatomical changes at several horticultural plants when are attacked by aphids

Vasilica Luchian, Elena Săvulescu, Minodora Tudose
The University of Agronomic Sciences and Veterinary Medicine Bucharest

Key words: mesophyll, aphids, epidermis, tissue, spongy

ABSTRACT

In order to track down and identify the leaf aphids that attack the horticultural plants samples were taken and observations were made in the tree plantation of U.S.A.M.V.-Bucharest. The pests have been identified in the Genetics, Plant Improvement and Protection Department, Entomology Subject, and the study of the morphological and anatomical changes that followed the attack of several pests was realized in the Botanics and Plant Physiology Department, Botanics Subject. A part of the material was directly scanned or photographed with a digital camera. We mention that there are few data in the speciality literature regarding the morphological and anatomical modifications caused by the presented pests.

Behavior of several varieties of *Vitis vinifera* L. to the attack caused by *Colomerus vitis* Pagst. and *Tetranychus urticae* Koch

Vasilica Luchian and Elena Săvulescu*, Minodora Tudose
The University of Agronomic Sciences and Veterinary Medicine Bucharest

Keywords: mesophyll, mites, epidermis, *Colomerus vitis* Pagst.

ABSTRACT

In order to detect and identify mites which attack *Vitis vinifera* L. plants, samples have been taken from twenty-one varieties of vine and observations have been performed as well in the vine plantation at USAMV - Bucharest. The Department of Genetics, Amelioration and Plant Protection, through its Entomology Section - has identified the mites species. The Department of Botany and Plant Physiology- trough its Botanical section – has followed and performed analyses on the morphological and anatomical changes resulting from the attack of certain mites' species. Part of the material has been scanned or photographed with a digital camera. Morphological and anatomic analyses of the leaf have been performed so as to see what happens to the foliar limb when attacked by mites.

Grape dieback in Romania induced by pathogenic lignicoulus fungi

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Keywords: grapevine, biological decline, lignicoulus fungi

ABSTRACT

Biological decline of grapevine is determined under the pedoclimate conditions prevailing in Romania by the lignicolous fungi parasiting the trunk and branches:: *Eutypa lata, Phomopsis viticola, Stereum hirsutum, Cytospora vitis, Verticillium dahliae, Phoma uvicola, Diplodia viticola, Pestalozzia vitis, Sphaeropsis malorum* and telluric fungus which found on drying roots *Roesleria hypogea, Roesellinia necatrix.*

Micromyceta involved in grapevine decline can attack during the autumn-spring period, when grapevine are in dormancy and temperatures are low for a more prolonged period. Evolution of the progress of early drying of grapevine, as a result of the pathogenic action of lignicoulus fungi is influenced by the age of plants, pruning system and cultivar behaviour.

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