CONVERTING FROM CONVENTIONAL TO ORGANIC VITICULTURE IN MINIS-MADERAT VINEYARD

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Abstract: *Organic viticulture in our country is at the beginning, observing vine technology is currently growing a very large number of synthetic chemicals: fungicides, herbicides, insecticides and chemical fertilizers. However all these substances undo even the concept of organic viticulture. Without soil protection, vines can not provide healthy wines and grapes, organic quality. Active biological control of soil favors a balanced nutrition, rich in humus and mineral elements required for the plants development. Knowing the results of using synthetic chemical fertilizers, pesticides and herbicides it is necessary to know, through mass media, enough of the soil protection laws. In EU countries this protection laws were well highlighted and firmly applied. Converting from conventional viticulture to organic viticulture is a dynamic process of creating a sustainable and self-regulating system. This issue is implemented within a longer or shorter period of time, depending on the preexisting chemicalization degree, on the soil pollution, the degree of attack on disease, pests, weed infestation, training and environmental awareness of farmers. The period from year zero until the obtaining of accreditation authorization is called the conversion period which lasts for about 5 years in viticulture, being carried out in 2-3 stages. This is called conversion step by step. It is necessary to underline that organic viticulture achieves lower yields compared to current conventional production system, which generates higher production costs. In compensation to organic wine products, they may be sold with a price 35-45% higher than the other conventional wine products, thus becoming more profitable. Romania's integration into European Community structures requires adaptation of vine-wine production in our country to the best current quality standards as organic products. Measures have an important role: a rational fertilization of plantations, avoiding nitrogen excess which causes raising vine diseases and pests attack, avoiding deficiencies or excess of potassium, making timely tillage, eliminating by the work in green, of many sources of infection, determining the elements of forecasting and warning based on economic pest thresholds. Benefits of alternatives for biological control of pests and diseases are: it is avoided the use of polluting products, the use of low phytotoxicity products, obtaining crops without chemical treatments, prevention of resistance to pesticides, ensuring human and other creatures health by using cleaner control methods.*

Key words**:** *Organic viticulture, conventional viticulture, a rational fertilization, organic products.*

INTRODUCTION

Organic viticulture in our country is at the beginning, observing vine technology is currently growing a very large number of synthetic chemicals: fungicides, herbicides, insecticides and chemical fertilizers.

However all these products undo even the concept of organic viticulture and do not protect the living earth, soil bacteria and other microorganisms needed for natural fertility of the soil, for healthy plant growth capable of ensuring human health through consumption of wine and grapes having the required organic quality. Guideline specific to organic farming involves the conservation of soil fertility by increasing its microbiological activity, environmental protection and respect for human health.

MATERIAL AND METHODS

Knowing the results of using synthetic chemical fertilizers, pesticides and herbicides, it is necessary to know, through mass media, enough of the soil protection laws. In EU countries this protection laws were well highlighted and firmly applied. In Romania timid measures were taken by Emergency Ordinance no. 262 of 7 dec. 2000 of Romanian Government on the procedures for setting maximum levels for pesticide residues in plants and plant products. It does not clarify the concept of agriculture, i.e. organic viticulture.

For land reclamation to make support for organic viticulture it is required for a period of 6-8 years through natural composting, rotations, alternations, etc.Human health depends on the use of a full plant nutrition, clean water, unpolluted air, and on respecting the order laws of life. These laws were discovered by Bircher-Benner who introduced and defined the terms of complete vital food (healing) based on biological agriculture, which states that: Illness is a state of disorder and loss of energy. Making a policy in all areas of life, nutrition, in relationships with living and non-living world, in the spiritual life, this is the only way to cure the patient.

Complete and vital source of food is spontaneous vegetation and organic farming. Therefore, we cannot conceive the health of a nation outside the organic farming system. Converting from Conventional viticulture to organic viticulture is a dynamic process of creating a sustainable and self-regulating system. This issue is implemented within a longer or shorter period of time, depending on the preexisting chemicalization degree, on the soil pollution, the degree of attack on disease, pests, weed infestation, training and environmental awareness of farmers. The period from year zero until the obtaining of accreditation authorization is called the conversion period which lasts for about 5 years in viticulture, being carried out in 2-3 stages. This is called conversion step by step. Soil serves as a medium for the vine, so its properties cannot be separated by characteristics of the plant to which it shall provide water, nutrients and other factors which determine its nutrition. Mineral fertilizers not only complete the reserve of equivalent elements, but also alter a number of processes, reactions by which they determine the dynamics change of many existing substances in soil. Insufficiency or excess of nutrients causes the vine nutritional deficiencies and physiological imbalances that manifest themselves through changes in visible, different colors of leaves, grape berries, etc.. In Minis-Maderat vineyard most affected are those for red wine varieties: Cadarca, Merlot, Cabernet Sauvignon and Burgundy.

1. Viticulture in this area has the following characteristics: Absence or maximum limitation of environmental pollution, soil, groundwater, by removing synthetic chemicals.
2. Maintaining equilibrium in terms of soil microorganisms activity.
3. Crop protection by natural defense and self defense means.
4. Maximum reducing of the energy intake to achieve a minimum reliance to this factor.

By using certain assortments of vine varieties adapted to the environment, with natural resistance to pests and diseases, it is also provided the maintenance of a genetically important capital for the future.

RESULTS AND DISCUSSIONS

It is necessary to underline that organic viticulture achieves lower yields compared to current conventional production system, which generates higher production costs. In compensation, organic wine products may be sold with a higher price than the other conventional wine products.

Romania's integration into European Community structures requires adaptation of vine-wine production in our country to the best current quality standards as organic products.

In this respect EU rules must be known Council Regulation EEC no. 2092/1991 is a starting point in learning organic farming at European or even global level. Subsequently appeared other regulations, provisions or rules aiming clear and unambiguous presentation of all aspects of viticulture and wine products in order to avoid the occurrence of abuse. Aids granted to vine holdings are targeting 3 aspects:

a) direct support of vine holding as aids for conversion from conventional to organic viticulture by providing a technical and economic consultancy.

b) providing aids as technical assistance consisting in implementation of special services for spreading biological viticulture through grants provided to specialists.

c) aids for education and training which may be of national or regional jurisdiction.

The soil in organic viticulture, as edaphic factor together with the other ones influences the process of growth and fructification of the vine. Vine itself can change in a certain measure the content of organic substances or some soil properties. By improving soil structure in organic viticulture it is emphasized the avoidance of its drainage by cultivating perennial plants before planting vines, using organic and green fertilizers, increasing of maintenance works complexity.

Planting grass on the intervals between rows of vines improves soil structure, favors the multiplication of microorganisms, facilitates the movement of cars, while allowing the application in due time of plant treatment plant and harvest transportation, especially in rainy periods.

Soil treatment (with straw, straw manure, hay.etc.) also contributes to the formation and maintenance of a structured soil. Under the conditions of natural plantation of grass (with spontaneous vegetation weeds, permanently mowed) it is found out an augmentation in water stability, of soil aggregates. The use of green manure and temporary or permanent grass plantation in viticulture requires the existence of a quantity of water in the ground (provided by rainfall or irrigation) in order to avoid competition between the vegetal carpet and plant vines. Maintenance of soil in organic viticulture has in view the works that least disturbs the soil microbial activity and ensures the maintenance of its structure. In order to avoid invasion of plantations by unwanted weeds, preventive means are strongly emphasized.

Green fertilizers use is very important in organic viticulture. Species with short growing cycle, which rapidly produce considerable biomass, can be used as green fertilizers. Using of organic fertilizers – consists of manure management, most popular in viticulture.

CONCLUSIONS

In conclusion it is necessary that the primary objective for European integration is adapting viticulture and wine production to the current EU quality standards.

Biological control has many advantages as:

- avoiding the use of polluting products
- products with reduced phytotoxicity
- production of crops without chemical treatments
- prevention of resistance to pesticides
- ensuring health of environment, of humans and of other creatures by using environmentally friendly methods of control.

In organic viticulture, considering the step by step conversion, the organically cultivated lots will be distinctly marked on the spot and it will be applied a mineral fertilization.

Viticulture and wine products will be stored and sold separately.Organi c wine-making will based on Vineyard and Wine Law and on the technical norms. Restoring ecological balance in wine agro-systems, by environmentally friendly technologies

offers wine crops without chemical residues, products which can be labeled biologically, very successful on today's market, as well as practical ways of conservation and environmental protection.

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