

120 YEARS OF RESEARCH, EDUCATION AND VITIVINICULTURAL PRODUCTION AT PIETROASA

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Abstract

Pietroasa is known by two local treasures: the treasure „Hen with golden chickens” and the wines produced here, especially the Tamâioasa românească and Grasa. In 1893, thus 120 years, at Pietroasa, one of the first nurseries in the countries was created, as a measure taken by the state for the production of viticultural planting material. From here, new solutions and methods of viticultural planting material production, choosing new varieties, establishing plantations, vine growing and wine production, continuously started growing, in the Romanian vitiviniculture. Extensive experiments performed here allowed the publication of valuable works by many leading personalities for the viticulture and agriculture of the country: G. Nicoleanu, I.C. Teodorescu, Gh. Constantinescu, T. Savulescu and others. Pietroasa Research and Development Station for Viticulture and Enology distinguished itself the last decades, also by enriching the assortment by new and valuable grapes varieties: Otilia, Timpuriu of Pietroasa, Centenar Pietroasa, Istrita and Alb aromat.

Key words: Pietroasa, anniversary, grapevine, wine.

INTRODUCTION

Celebrating 120 years of research, education and vitivinicultural production at Pietroasa is a good opportunity to recall some moments, places and people that have marked this field and paying homage to some first class personalities, who have greatly contributed to the development of the Romanian viticulture, to enriching knowledge, in affirming the Romanian viticulture worldwide.

Romanian modern and contemporary era of viticulture was, for good reason, divided in the pre-phyllloxeric stage (until the late nineteen century) and the post-phyllloxeric one, thus mass destruction of vines has determined profound changes in the viticultural area.

Reconstruction of vines has been accomplished during the first stage with imported grafted vines, then with vines obtained from local nurseries, out of which a special place in the Romanian viticulture history was occupied by Pietroasa Nursery.

MATERIALS AND METHODS

The work is a documentary synthesis of the main activities of special importance for the Romanian viticulture, starting with the role of Pietroasa nursery in restoring the viticulture after the phylloxera disaster, continuing then with introducing the modern production techniques, creating new varieties, obtaining high quality wines, dissemination of results of researches, training specialists with high qualification etc.

At the same time we pursued the role played by many prestigious personalities in affirming the Romanian school of viticulture in the world.

RESULTS AND DISCUSSIONS

History. According to the Official Gazette no. 168 of the 31st of October 1891, the tasks of the nurseries and vineyards stations were to “experiment and choose the best species and varieties of rootstock, produce planting

material and distribute it, learn systematic cultivation of American vine, treat diseases, manufacture and preserving wine, learn the art of vine-grafting” (Picu M.V., 2008).

Established in 1893, Pietroasa Nursery had the role to become a “model and experimental vineyard for the culture of vine and wine manufacturing” of the Ministry of Agriculture, Industry, Commerce and Domains.

Pietroasa Nursery was established on the state domain in Pietroasa-Badeni, which had been impropriated from Bradu Monastery in 1864. When established, Pietroasa Nursery was attributed the courtyard of the former monastery and a total surface of 32.162 ha (Damian T. et al., 2008).

By Law no. 986/16th of March 1893 in addition to other funds, 500 thousand lei were allocated to the Ministry of Agriculture, Industry, Commerce and Domain, for establishing the

model farm Pietroasa and 500 thousand lei for building a winery and cellar in this farm.

Between years 1893-1895, at Pietroasa a collection of 737 varieties of vine for table grapes and wine is established, on the 10 ha surface, an impressive accomplishment for that time, hard to imagine during our days.

In 1924, the viticultural and enological Station Pietroasa-Buzau is being established, linked to Pietroasa Nursery, which passes in 1929 to the Academy of High Agronomic Studies in Bucharest, under the name of „Pietroasa Experimental Vineyard”. Management of the unit was assigned to Gherasim Constantinescu. Here at Pietroasa, in the interwar period, the foundations of rigorous scientific research in the viticultural domain were laid, coordinated by professors Ion C. Teodorescu (Figure 1), Gherasim Constantinescu (Figure 2), Traian Savulescu and others.



Figure 1. Ioan C. TEODORESCU (1886-1978)



Figure 2. Gherasim CONSTANTINESCU (1902-1979)

In 1928, an experimental plantation is established, under the guidance of I.C. Teodorescu, with 24 varieties for wine (12 Romanian and 12 foreign), each variety grafted on 10 rootstocks and submitted to 5 pruning systems (1200 combinations). Also, a weather base was established to warn downy mildew of grapevine.

During that same year, I.C. Teodorescu publishes the work *Productive value of Romanian vines*, which contains the results of a comparative study made starting from 1922 at

Pietroasa on some Romanian and foreign varieties.

In 1939 at Pietroasa a collection of 16 varieties of table grapes grafted on 4 rootstocks is being established. Based on the studies made at Pietroasa and Istrita, Gherasim Constantinescu writes in 1949 his PhD thesis entitled *Comparative study of vine varieties Braghina and Negru vartos at the experimental Vine Pietroasa-hill and Istrita Nursery-lowland, Buzau County*.

Data from these experimental plantations were published in the monumental work “*Ampelographic RSR*” (8 volumes), published under the coordination of Professor Gherasim Constantinescu.

Following these extensive experiments, continued in time, **the famous variety of Pietroasa** was profiled led by the Tamâioasa româneasca and Grasa, varieties well adapted to local climatic conditions (long autumn, relatively dry, soils rich in calcium carbonate, smooth slopes with a good exhibition, etc), with high potential to accumulate sugars (240-260 g/l) and other noble products, that allow obtaining high quality wines. Varieties of Italian Riesling, Chardonnay, Sauvignon, and Pinot have also proven superiority for white

quality wines, as well as Cabernet Sauvignon and Merlot for red wines.

Creating new varieties of grape-vines and improving the main varieties of the assortment by clone selection were a basic concern of the researchers at Pietroasa, since 1957.

Recent achievements of the Station are remarkable, related to obtaining and approving some new valuable varieties (Otilia, Timpuriu of Pietroasa, Centenar Pietroasa, Istrita, Alb aromat) (Figure 3) and some new clones (Grasa of Cotnari 4 Pt. and 45 Pt.; Babeasca neagra 94 Pt.; Muscat of Hamburg 4 Pt.; Tamâioasa româneasca 36 Pt. and 5 Pt.; Muscat of Adda 5 Pt.; Busuioaca of Bohotin 26 Pt. and Feteasca neagra 10 Pt.) (Toma O. and Aspas S., 2008).

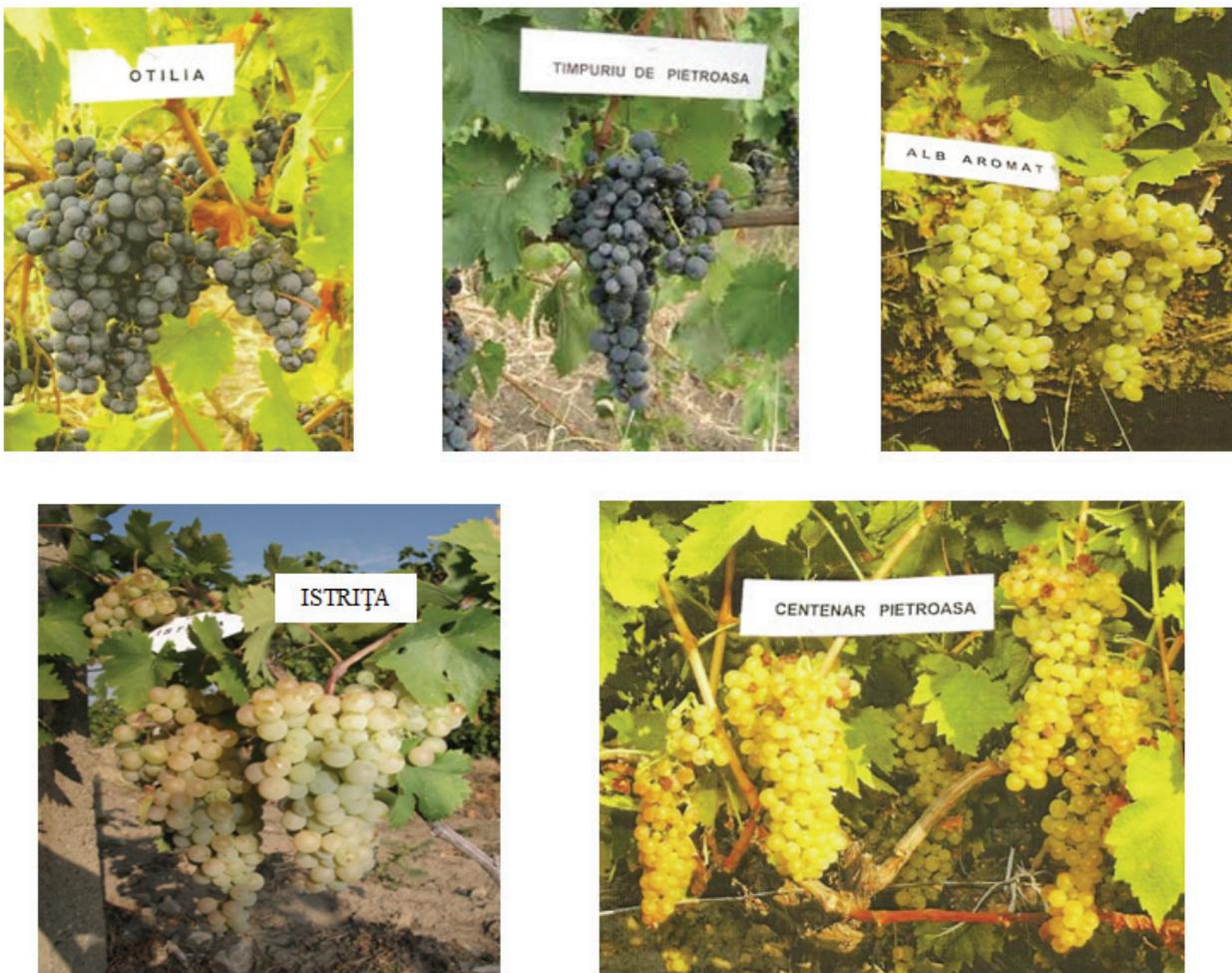


Figure 3. New grape varieties obtained at Pietroasa

Research on **vine pruning** was initiated in the experimental plantation established with grape varieties for wine in 1929, using 5 types of pruning and bud loads (Damian et al., 2008). Later on, researches have extended on varieties

of table grapes in the plantation established in 1939 with 16 varieties grafted on 4 stocks and 4 training forms.

A special preoccupation of the researches in Pietroasa Station was, since 1962, the study of

high form of leading of stocks, increased production being highlighted; lower attack of downy mildew and grey mould, as well as an increased efficiency of exploitation of these plantations.

At the basis of the modernization action of vineyards in Romania stood the numerous researches made at Pietroasa, during a long period of time, on high and semi high leading forms, on varieties of table grapes, as well on those of wine, which have proven their validity up to date, related to the planting distances, types of pruning, bud loads and length of the production elements.

First researches on **vineyard protection** conducted at Pietroasa have aimed at fighting against phylloxera and downy mildew. In 1927, Professor Traian Savulescu has initiated systematic studies on biology of the fungus and warning treatments to downy mildew, which has proven to be the most dangerous disease of the vineyard. One year later (1928) has established near Pietroasa Experimental Vineyard, the Station for Warning downy mildew of grape vine, announcing the local vine growers about the optimum moment for applying treatments.

After 1957, researches on protection of the vineyards have amplified by establishing a specialized laboratory. Gradually researches have extended to powdery mildew, virus diseases, excoriosis, grey mould, useful fauna in the vineyard plantations, using of pheromones to control pests, integrated control, of biological means of control.

During the last decade researches have intensified in the area of **organic viticulture**, in collaboration with specialists of the Department of Viticulture and Winemaking of USAMV Bucharest, by developing 3 projects, an organic plantation was established and a methodology for accreditation has been developed (Antoce A.O. et al., 2008).

Production of viticultural planting material has been a basic activity of the Station throughout its existence. If in the beginning the planting material has been destined for reconstructing the vineyard plantations destroyed by the phylloxera, later increasing these activities was destined for extending the viticulture in all favorable area, introducing new varieties in the culture and exporting.

Today seedling material with high biological value is produced according to the European legislation and is destined for establishing modern plantations, whose exploitation must meet the new requirements for promoting quality, without which we cannot speak about the viticulture of future.

In **winemaking**, first researches refer to determinations of the chemical composition of the wines obtained from the experimental plantations. In the work *Introduction à l'ampelographie roumaine*, Gh. Nicolescu (1900) presents the main features of wines in Buzau County, based on the analysis made at Pietroasa.

Data on the qualitative potential of varieties in the plantation established in 1928 are contained in *Viile experimentale din România (Experimental vineyards in Romania)* (1943) written by I.C. Teodorescu, Gh. Constantinescu, S.S. Gogalniceanu and C.V. Oprea. Authors have noticed the fact that the highest technological potential was showed by the varieties Grasa, Tamâioasa româneasca, Pinot gris, Muscat Ottonel, Sauvignon and Pinot noir, considering that Pietroasa wine center can be defined as a complex destined for producing desert liquor wines (Damian I. et al., 2008).

In 1940 at Pietroasa a wine center was created, equipped with modern facilities imported from Italy, which lead to improving the work methods used in primary winemaking, valuing the technological process of the varieties Tamâioasa româneasca and Grasa.

Research in the field of wine were diversified and intensified after 1972, together with renewal of the whole technological process of primary winemaking. The importance of leading the alcoholic fermentation at low temperatures has been established, the favorable role of bentonite on musts, the duration of contact between must and marc was mentioned for producing the aromatic wines of Tamâioasa româneasca, the rotating metal tanks were introduced on the technological process for obtaining aromatic wines etc.

Wines of Pietroasa, especially those of Tamâioasa româneasca and Grasa, especially after 1957, have enjoyed a good appreciation at the international and national competitions, obtaining various medals.

Researches conducted during the last two decades have aimed to establishing new methods of primary wine production which influence the content in volatile compounds of the Tamâioasa româneasca wines, influence on wine production technology and of enological materials on wines typical, using the flotation equipment for settling the must in continuous flow etc. (Varaticeanu Gh. et al., 2008).

The production activity is further considering, production of seedlings, grapes and high quality wines. It is aimed to further reduce inputs and increase the quality of grape production, modernizing the technological process for obtaining quality wines, developing the marketing activity (Stanica F., 2008).

The educational activity was, also, a constant concern of the Station, from preparing the grafts (at the end of the 19th century) of agricultural apprentices, of the cellar men, to practice of students, to researches made in the dissertation works and PhD thesis.

This is where the first school for grafts personnel was established in 1894 thus the practice of grafting has spread to nearby places. Later on, a professional school for cellar men and a school for agricultural apprentices, with duration of 3 years, for the formation of practitioner growers.

By complexity of the activities developed, Pietroasa Resort has imposed itself also as preparation center for teaching in higher education, passing in 1929 to the Academy of High Agronomic Studies in Bucharest (Pomohaci N., 2008).

Collaboration with growers in the area, dissemination of the research results, has been a constant concern of the Station, from training courses, conferences, training, practical demonstrations, up to assistance in obtaining the wines in the winery, in the purpose of applying and respecting the enological practices authorized for obtaining quality wines with name of controlled origin.

Pietroasa - an ideal place for enoturism. It is known that the name of Pietroasa has become famous after discovering the famous treasury in 1837, although viticulture and winemaking has a long tradition in these areas. Pietroasa Station is the only wine unit in Romania, which can weave its history with that of the treasury, discovered right at the superior part of the hill

cultivated with grape-vine, in the „Via Ardelenilor” (Ivascu M., 2007).

The Station is keeper of a luxury edition of the monography „Le trésor de Pétroussa”, edited in Paris by Alexandru Odobescu, between 1895 si 1900.

Along with the exceptional quality of Pietroasa wines, the wines presentation room is admired here by visitors, furnished and decorated by director Valeriu Popa (1957-1962; 1972-1986), who was inspired not only by the local tradition of wine, by the locals preoccupation to carve stone, but also by the history of these places. You can admire here the lamps, the engraving of Master Marcel Chirnoaga entitled „Strugurii mâniei” („Grapes of anger”), the stained glass, pieces of the famous Treasury from Pietroasa (in copy, natural size) etc.

The golden book of the Resort is keeper of a significant number of testimonies of moments of enjoyment spent by numerous Romanian and foreign visitors, who have crossed its threshold accompanied by the famous wines. Not incidentally Nichita Stanescu recorded that „Here at Pietroasele, our stone heart has changed into a heart of heart”.

All these accomplishments have entitled Professor Gherasim Constantinescu to assert with good reason: „Pietroasa can be considered, unmistakably, as being the cradle of Romanian vine science. Its purpose was to restore life to vineyards and to harness the efforts of the vinegrowers exploiting by vine plantations (...) the Carpathian hills which the grape vine occupies for millenniums, being above all crops” (Macici M., 2008).

CONCLUSIONS

The anniversary of 120 years of research, education and vitivinicultural production at Pietroasa, allows remembering the place and people who laid the foundation of the scientific research in this field.

Pietroasa nursery, established in 1893, shortly after the invasion of phylloxera had an important role in restoration the viticulture and introducing the modern production techniques.

This is where leading personalities of the Romanian viticulture from the last century have developed their activity, Ioan C. Teodorescu and Gherasim Constantinescu.

Over time, Pietroasa Station noted itself by studying the wine varieties, creating new varieties, obtaining clone selections, adapting rootstocks, extending the high and semi high training forms of the grapevines, introducing some new techniques in wine production.

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