

**VITICULTURE OF MINIS – MÄDERAT VINEYARD,
HISTORY AND ACCOMPLISHMENTS
- METHODOLOGICAL ISSUES –**

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Abstract

The author presents the history of vine culture and wine production in Arad County Vineyards, MiniŞ - Măderat area, focusing on the diseases of vine plantations along the way. In the end, the author shows some methodological aspects which increase the efficiency of content teaching by seminar activities with the students of „Aurel Vlaicu” University of Arad, Food Engineering, Tourism and Environment Protection Faculty.

Key words: *viticulture, methodological issues, MiniŞ Vineyard, Vine pests, history*

Beginnings: It's very important to show that starting from XIX-th century (1855) in Arad county there were 5216 ha of vine plantations, and by 1880 the Phylloxera year, 6540 ha divided 72 % hills and 28 % plane. On 26 of July 1880 there was seen from the first time the Phylloxera (*Phylloxera vastatrix* Planch sin. *Daktulosphaira vitifoliae*) in citizen Kover Gabor's vineyard from Arad. A few days after (12 August) they start treatment by spraying the ground with Carbon disulphide solution but the treatment was ineffective.

In Miniş – Măderat Vineyard area, the Phylloxera appeared for the first time at Şiria during 1883 on a surface about 115 acres. Until 1884 it spreads to Cuvin, Covăsânţ and Pâncota, by 7 October 1885 to Miniş and by 1886 to Ghioroc, Păuliş, Mâsca, Măderat.

We noticed that geographically speaking, the Phylloxera started in the middle of the area (Şiria) went fast towards South (Şiria – Radna) and then North (Şiria – Mâsca – Măderat). Phylloxera has it's origins in North America, arrived in Europe in 1863 for the first time in England and France.

The pest has two biological cycles, one complete with all the 4 forms: eriophyes vitis, riparia, sexuparia și sexual specific for American vine (*Vitis rupestris* și *Vitis riparia*) or hybrids and incomplete cycle for European vines.

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Root form attacks the vine roots by biting and sucking, in the injection site the tissues get deformed and weakened and nodules appear. This form develops only in heavy soil, loamy and clay soil. It doesn't develop on sandy soils with over 60 % silica and temperatures over 30 – 50 °C. Root form attacks the American vines too but the damages are low because of the thick root structure.

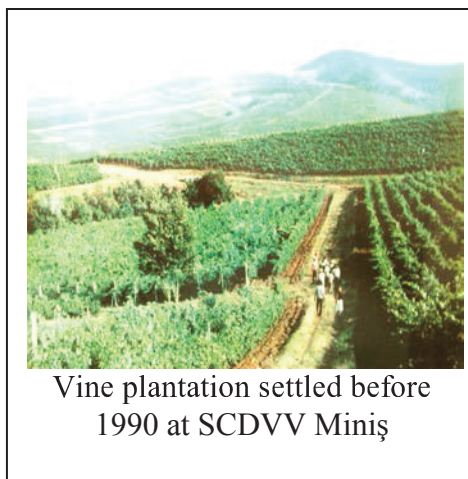
Fighting the Phylloxera. We found the highest interest on fighting the Phylloxera at Ghioroc residents, where on 1885 was founded the „Cooperativa pentru cultivarea portaltolului” – „ The rootstock cultivation cooperative”. The insecticide treatments employed in those years were unsuccessful.

Bela Reichter's work „Înștiințarea despre reușita combaterii filoxerei în Podgoria Aradului” – „Notice about Phylloxera fighting success in Arad County Vineyards” from 1888, mention the method of vine logs flooding producing good results. This means that in the roots area is kept the water provided by rain and snow for about 6 months (November – April). The Phylloxera disaster was so highly spread that by November 1887 there were 1600 acres affected and 860 acres completely ruined. In 1888, when Richter from France visited the Vineyard, 25 % of its entire surface was destroyed.

Miniș Viticulture School, founded on 1881, had an important role in formation and training specialists and viticulture recovery after the Phylloxera disaster, employing new grafting techniques and cultures. Here on 1885 was employed for the first time the grafting on Riparia rootstocks but from 600 vines only 2 or 3 pieces succeeded in dry grafting and none in green grafting.

Green grafting was demonstrated afterwards at Ghioroc Viticulture Cooperative by Arad's Chamber of Agriculture on May 1885. The method applied in the next year at Miniș Viticulture School was 50 – 60 % successful.

In the same year 1885 was founded the State Vine Nursery at Barațca – Păuliș. In 1890 the entire surface of 69 ha was repotting, in 1892, from 800 thousands of grafted seedlings resulted 42 % vines good for planting. On 1893 the State entrusts the private sector (bankers, barons, land owners) with seedlings production.



Barons Bohus Ladislau and Vasarhely Adalbert agreed by contract to replant 144 ha at Barațca – Păuliș and 400 ha at Ceala Arad.

The European varieties used for reconstruction were those pre-Phylloxera: white wine: Mustoasa de Măderat, Bacator roz, Alle Mărunt (Aprofehér), Ardeleanca, Alb mios (Mezesfehér), Galbenă de Ardeal și Riesling; and red wine: Cadarcă, Oporto, Burgund și Cabernet Sauvignon.

There are local literature speaking about the vines and wines of our Vineyard, in Hungarian Perestsinyi at the beginning of XIX-th century, and Romanian Petru Vancu - „Vieritul sau cultura viței de vie (1898)”, I. Tuducescu (for primary schools) „Traducere în economie (1893)”.

Viticultural Economy. Between 1870 – 1880, the medium annual production of grape juice in the county was 250500 hl, 10 %only from Șiria. The effects of Phylloxera disaster showed in 1890 when production falls down under 9 hl/ha.

Export of wines between 1846 – 1862: Brazil, 1885 India and Australia. Towards West and North European countries the wine export was made by water Mureș – Tisa – Danube. After 1900 Austria left the only country to import wine from Miniș-Măderat Vineyards.

By the end of XIX-th century, the number of cooper and barrels manufacture centers was highly increasing, between 1881-1888 the barrels authorised by the 10th metrological offices of the county was around 286 thousand pcs. The biggest barrel from Romania, 70124 liters capacity was produced at Diosig, Bihor county in the second half of XIX-th century, was bought by a cooper from Arad and exposed at the exhibition of 1935 (Arad).

The first concrete tanks to keep the wine in Arad were made by Domány enterprise on 1878 when wine production was very good, then employed in the cellars of the Viticulture School of Miniș between 1912-1914 (26 pcs. – 3600 hl). Arad industries in the second half of the XIX-th century produced smashing machines and grape press, machinery and tools for viticulture. The medium cost for working day was 5,2-5,4 l wine or 8-10 kg of wheat. The establishment of one hectare of (grafted) vine was as 7500 liters of red wine.

In 1883 was founded „Cercul gospodarilor Arad - Podgoria” – The cooperative of managers; in 1905 „Asociația viticultorilor” – The association of viticultors, „Cooperativa producătorilor de vin din Miniș și Măderat” The wine producers cooperative of Minis and Maderat.

Between 1872-1913, at Ghioroc and Arad were organized 12 exhibitions and fairs of grapes, fruits, and wine and agriculture tools. Internationally, they participate to contests and exhibitions, for example on 1862 at London the Miniș red wine got the highest distinction and was nominated „the king of all wines”.

In Miniș-Măderat Vineyard was founded the Arad-Podgoria narrow railway, with branch from Ghioroc to North (Pâncota) and south (Radna), first on 1906 with mechanical traction and from 1913 with electrical traction.

Viticultors Congress. After the great union of Transylvania and România, the most important changes appeared with the agrarian reform of 1921, which brought a significant improvement of economic and social life of peasantry.

In Arad, Bihor and Satu Mare counties, the Hungarian and German landlords represented 0,9 % of all holders and owned 51 % of the entire agricultural area, while the peasants were 65 % and had properties under 5 acres.

September 1, 1924 the number of expropriated landlords was 344, for an amount of 145,387 ha, while the vine surface was only 72 ha. This shows that the Arad viticulture was employed in small surfaces and had peasant feature.

The Congress of Viticulture from Arad and Focșani on 1922 asked the Government the wine export tax repeal and offered some advantages for railway transport.

In 1923 appeared the first number of „Viticultura”, magazine of agriculture, viticulture and economy, organ of viticultural unions of Arad and Timiș – Torontal, bi-monthly publication. During the economic crisis between 1929 – 1930, the situation of viticulture aggravated much, the Minister of Agriculture I.C. Teodorescu, took specific measures: delimitation of viticultural areas, keeping famous vineyards, limitation of cultivated varieties, prohibition to plant hybrids directly produced (HPD).

The law for establishing the provenience and denomination of wine origin was elaborated and it was organized the fraude control service and wine record. The viticulture defense law of 1936 provides for viticultural areas the creation and function of warning stations, to fight the vine diseases and pests. It also provides the foundation of wine producing cooperatives, cellars, distilley plants for wine and brandy, vinegar and grape juice. In every main viticultural area were supposed to be established experimental Viticultural and Oenological Stations, guided by „Institutul de cercetări Agronomice a României” (ICAR).

The Arad Plantations Census. In 1936 there was the census of Arad county vine plantations, the 6160 ha were in the property of more than 22000 viticulturists – owners, from which 94 % had less than 1 acre of vine (1 acre = 0,5755 ha). The viticultural area defined by the Agriculture Ministry by order no. 4077 from 8 March 1944 comprised 24 villages of vineyard hills. For this area I. C. Teodorescu on 1942, recommends the following varieties and percentage:

- Cadarcă – 35 %;
- Cabernet s. – 30 %;
- Pinot noir – 80%;
- Oporto – 5 %.

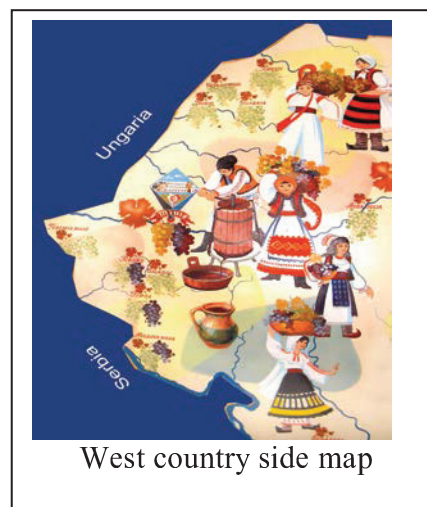
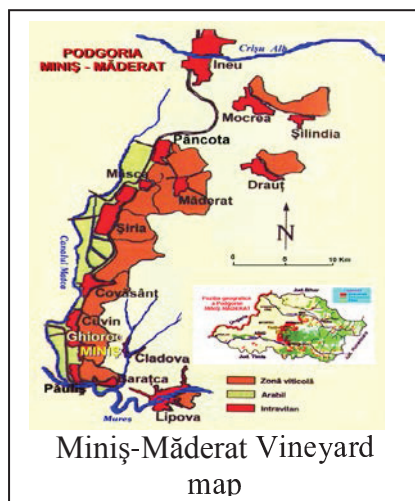
This prescription is one of the famous types of „ROȘU DE MINIȘ” – Minis red wine. For superior white wines he recommends the following varieties:

- Riesling italian – 25 %;
- Furmint – 25 %;
- Rujța (Bacator) – 20 %;
- Sauvignon – 15 %.

In 1939, Arad chamber of Agriculture became an external service of Agriculture Ministry and took over the schools, farms, nurseries of seedlings, all except laboratories, stations and research institutes.

Together with the Chamber of Agriculture, at Ghioroc was activating Adalbert Kaufmann (1888-1985), the first breeder and creator of new vine varieties, on 1911 he graduated the „Școala Superioară de viticultură de gradul I” – Superior 1st degree School of Viticulture, from Geisenheim – Germany. After the Great Union of Transylvania and Romania, the Viticulture School of Minis was reopened on 1921. In 1930, became „Școală de viticultură de gradul I” – First degree viticulture school. Professor. I. C. Teodorescu started here a meteorological station of 2nd degree on 1936, an experimental vine plantation, which were 10 of all in the entire country. School principal Vasile Juncu, and his colleagues had an important contribution to viticulture development between 1928-1938. By 1945, from the entire vineyard surface, 2/3 were old plantation with more than 30 % blanks. During 1957 – 1965, in Arad county have been planted 750 ha of vines, from those 685 in state area. In 1957 was founded „Stațiunea de Cercetare Viticolă Miniș” - the Minis Viticultural Research Center, located on Minis Viticulture School. The new center was ready by 1982.

Production potential. Between 1970 – 1975, started the modernization of vine plantations in order to get a higher production by a complex action plan based on fertilizing, planting the empty spaces, modern support system.



Plant nursey sector. Between 1967 – 1976 every year in the county were grafted 18 – 20 millions of seedlings, obtaining 6 – 7 millions vines, which could start 1100 – 1400 ha of plantations. The major share of grafted vine production was in Cooperative sector (65 %) – Târnova.

On wine sector, the grape production until 1989 was taken in two major statal centers Miniş and Baraţca.

The Research department of Minis had as major goals the modernization of vine varieties and grafts in the West Romania area, the use of sloping lands to plant, raise of biological value of seedlings, improvement of technologies in order to reduce the workforce, energy and production costs, improve the quality and composition of wine

New wines were obtained, the clones of Cadarcă 123 și 2000 and Mustoasă de Măderat 79, then Roz de Miniş and Sylvania.

The vine varieties from the vineyards have been mapped, cartograms of soils reaction, agrochemical mapping for soil fertilizing. There was defined the types of red and white wines and their features of their composition along the vineyard. The blue clay treatment for red wines was the first time applied in the country. The red special wine named „Mara” was homologated here.

The special quality of Minis red wines from the year 1950 to 1985 is documented by more than 100 awards, of which 58 gold medals and 38 silver medals gained in national and international contests. The scientific results obtained by Minis Research Center were implemented in all western Romania counties: Arad, Timiș, Caraș – Severin, Bihor, Satu Mare. By the end of 1987, the productive sector had 20 ha grafted vines and 457 ha fertile vines.

Situation of Arad County’s viticulture after 1989. The transition from centralized to private economy was very difficult for Arad county viticulture. The plantations were divided in small pieces, had inadequate technical equipments, lack of professionalism, and distrust for working in common. The vine plantations area was dramatically decreasing, here is the situation for the past years evolution:

1986 – 1990 : 3550 ha
1991 – 1996: 2868 ha
1996 – 2000: 2790 ha
2003: 2775 ha

By the end of 2008, vine plantation areas should be:

Specific	Surface - ha
Vine – fertile - wine grapes	1470
Vine – fertile - table grapes	138
Grafted seedlings	27
Nursery	19
Plantations newly founded 2008	72
*HPD	78
TOTAL vineyards area	1804

In 2000, at the Research Centre we had 10 themes and 12 experiments inside the „Orizont” – Horizon Program and 6 projects financed by Relansin Program.

In Miniş – Măderat Vineyard, after 2008 there were founded with A.P.I.A financial programme 1200 ha of young vines, until the end of 2011.

Methodological issues. There are some specific techniques that I propose on seminars for the students to study all the informations reported above, using the constructivist model⁵⁷:

Role-play: can be used in any moment of the activities. The teacher presents the scenario, distribute the roles dividing the group into actors and audience, or role observers. Then follow the play, the audience opinions, and the conclusions of the teacher. This method aims to encourage the communication, stimulate dialogue.

Delphi. Students are divided in groups, every group analyzing a different problem or situation. The conclusions are written and argued than the paper passes from one group to another in scale and are read, analyzed and commented

Puzzle. Denomination for a synthetic approach to a field, starting from its components. The teacher will employ this technique for complex situations.

Rotative. This technique aims to discuss a complex theme eliminating the controversy. The groups debate the basic theme and the ideas derived sending a written message. The conclusions comes out in message set passing clockwise from one group to another.

Philips 6x6 involves all the participants in analyzing and debating the above theme. Every group has 6 members and activates 6 minutes, after that the secretary makes a summary of the problems and in the end the conclusions are reported to everyone.

Active interruption is a method based on a theme presented by the teacher, free discussions between the students and then a break to put down the main ideas. The debate reports the impressions and a new active interruption is possible if necessary.

Brainstorming means an active participation of all members in debating a theme. The students are asked to express quickly their ideas, then written, recorded and analyzed by the group

I know – want to know – I studied technique aiming to make the awareness of learning. Individually or in groups the students progressively complete a table of a theme, with what they know about it, what they would like to find out and finally the results

Grapes reveal the method where students find the connections and associations between ideas, elements of concept or notions. In the middle of a board is written a word or a sentence and they must mark other words or ideas derived from it, in more levels, resulting a grape shape.

Cube stimulates thinking, developing the students' capacity to involve and understand the information. On the edges of a paper cube we write the instructions: describe, compare, associate, analyze, apply, argument, then the cube is rolled as a dice and the students debate and make conclusions and suggestions.

This kind of methodological models is very efficient for seminary activities and helps the students to become an active part in their own formation, democratic teaching gives the student a conscious role in building its multiple intellectual structure and necessary capacities to fit the changes, adapt and positively react in social-professional life⁵⁸.

Conclusions. This highly scientific content theme regards the history of a vineyard which produces ones of the most important red wines of the country. In the course of history we improved the wine production techniques, by the activity of the Research Center

⁵⁷ Anton, Ilica, *O pedagogie modernă*, Editura Universității Aurel Vlaicu, Arad, 2012, p. 218.

⁵⁸ Ibidem, p. 219.

and accurate soil management. In this article I show that the efforts of specialized institutions and scientists made famous the wines of Arad county vineyards, where the sun shines for almost 180 days annually, and the rocky soil increase the marvelous quality of our red wines, literally called red wine without blemish.

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