

## RESEARCH ON LOCAL VARIETIES AND BIOTYPES OF VINE-GROWING IN BUZIAȘ-SILAGIU AREA

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### **ABSTRACT - Research on local varieties and biotypes of vine-growing in Buziaș-Silagiu area**

Buziaș-Silagiu area has a tradition for the cultivation of vines in the western part of Romania. It is an area characterized by a very favorable climate and soil conditions, offering the possibility of successful cultivation of many varieties, from the earliest to more autumnal. The presence of numerous local varieties and biotypes in this area is an important source of biodiversity and production of authentic, specific vine and wine products. Some of these varieties have valuable agrobiological and technological features both for growers and consumers, but also for breeders: high production, high quality, drought resistance, frost resistance, tolerance to some diseases and pests. In recent years, consumer requirements are turning to ecological products, so finding those varieties with resistance to diseases and pests could cover an important market segment. Unfortunately, many of these varieties are in danger of extinction due to negligence or growers' preference for foreign varieties. They are found only in small groves of familial households, therefore saving them from extinction and reinstating them into the national patrimony became an important objective. All these considerations determined us to do research and make observations in wine growing areas in the western part of Romania, to discover or rediscover those varieties and biotypes, which correspond to current market requirements, but also for preserving the growing germplasm. We made ampelographic, physical and chemical measurements of these varieties and studied the quality and quantity of production. In this paper we summarized, on production lines, the principal ampelographic features of the identified varieties.

**Keywords:** biotypes, local varieties, biodiversity, Buziaș, Silagiu.

## INTRODUCTION

Local varieties are the result of natural and primitive artificial selection long practiced by anonymous winegrowers. They were formed in specific climatic conditions and have a more limited distribution. In this manner have resulted a number of indigenous species, preserved for their values: *Tămâioasă românească*, *Grasă de Cotnari*, *Galbenă de Odobești*, *Mustoasă de Măderat*, etc. These local varieties are represented as biotypes, or ecotypes. They have a good adaptation to growing conditions in the viticultural area in which they were formed, usually in the center of vineyards. Some of these varieties are recognized in the world because of their productive performance and are more prevalent in culture (DOBREI ET AL., 2009a). There are also less common varieties, with many valuable features, but poorly exploited by growers and breeders. Silagiu-Buziaș growing area is characterized by an abundance of local varieties, and biotypes encountered especially in small family plantations of householders. The technology of culture practiced in the case of these varieties is a simple one, it is reduced to pruning, 1-2 weedings, harvesting, while the phytosanitary treatments are missing or are limited to 1-2 spraying with bouillie bordelaise, which entitles us to claim that the grapes obtained can be considered ecological grapes, which in future will be very appreciated by a major segment of the market that is increasingly oriented towards ecological products, healthy for the human

body (DOBREI ET AL., 2009b, 2010a, 2010b). To this end we have undertaken an action to identify and research existing varieties of grapes growing in this area. In the family plantations of this area there have been identified and studied between 2008 - 2010 a total of 26 local varieties and biotypes, divided into three production lines: local grape varieties and biotypes for fresh consumption, varieties with mixed characteristics and varieties for winemaking.

## MATERIAL AND METHOD

Research has been conducted in the old plantations of householders from Buziaş-Silagiu area. During the field trips, there have been identified and sampled more than 40 varieties of plantations, but only 26 of them were considered interesting and retained for study. To establish the name of the varieties and local cultivars, we used several criteria: local name if any, name of the settlement where it was discovered, prevalent ampelographic and technological characteristics, etc. Of the 26 local cultivation retained in the study, 15 local varieties and biotypes have specific features for table grape varieties, 5 we found suitable for vinification, and 6 show mixed characteristics, consequently suited for both wine and fresh consumption.

## RESULTS

For a summary of the ampelographic characteristics, we used tabular presentation to refer only to the most important ampelographic traits: leaves, grapes, berry (*Tables 1-3*). The varieties were divided on production lines: table grapes, mixed varieties and cultivars for wine production.

**Table 1: Ampelographic characteristics of grape varieties for fresh consumption**

Nr.c rt.	Variety/Biotype	Leaf	Grape	Berry
1	Alb crocant de Buziaş	Medium to large, with slightly sketched sinuses	Medium to large, cylindrical-conical, with rare grains	Large, oval, with thin skin, elastic, greenish yellow
2	Alb lax de Silagiu	Medium to large pentalobed, but show foliar polymorphism	Large branches, cylindrical-conical, with rare grains	Large branches, cylindrical-conical, with rare grains
3	Coarnă albă	Medium to large, orbicular, pentalobed	Medium to large, cylindrical-conical sometimes wing	Large, oval, slightly pointed tip, thick-skinned, greenish-white, with a specific taste
4	Coarnă neagră	Medium, oblong, trilobate	Medium to large, cylindrical, or cylindrical-conical, dense berries	Medium to large, oval, thin-skinned, dark red, abundant bloom. core has a specific taste
5	Coarnă vânătă	Medium, pentalobed	Medium to large, cylindrical-conical with very dense berries	Medium with thick skin, bluish, with a thick bloom
6	Conic auriu	Small to medium,	Medium, conical, with rare	Large, to very large,

		pentalobed, with little obvious sinuses	grains	ellipsoidal, with thick skin, elastic, yellowish-green, covered with a thick bloom
7	Moldovel	Middle, kidney-shaped	Large to very large, cylindrical-conical, dense berry	Large to very large, oval, thick skinned, rigid, black-blue, covered with a thick bloom
8	Negru crocant de Buziaş	Large, almost full, with tends to lobar	Large, cylindrical-conical, lax, with rare grains	Large, inversely ovoid, with thick skin, elastic, bluish black, covered with a thick bloom
9	Ochiul boului	Large, almost full	Large to very large, branches, lax, with berries rarely placed	Very large, elastic skin, black-bluish, covered with a thick bloom.
10	Răşchirată albă	Medium, with pentalobed trends	Large to very large, branches, lax	Large, oval, thin-skinned, elastic, yellow-green, covered with a thin layer of bloom.
11	Roşu crocant de Silagiu	Medium to large pentalobed.	Medium, cylindrical-conical wing	Medium spherical. The peel is thin, elastic, dark reddish
12	Țâța caprei albă	Medium, pentalobed, with slightly sinuses sketched	Medium to large, cylindrical, with dense berries	Medium to large, oval, with thick skin and elastic, greenish yellow, covered with bloom
13	Țâța caprei neagră	Small to medium sized, with slightly sinuses sketched	Medium, branches, lax	Medium ellipsoidal, thick-skinned and elastic, bluish black, covered with a thick bloom.
14	Țâța vacii	Medium	Medium, branches, lax	Large, cylindrical, elastic skin, greenish, covered with bloom. It has a seed.
15	Auriu de Silagiu	Small, pentalobed round kidney-shaped	Medium cylindrical-conical, with rare berries	Large, round, slightly oval, the skin thick, elastic, yellowish-green, intense bloom.

Biotypes and local varieties of grapes for fresh consumption are characterized by large grape branches, of average weight, 250-350 g and length of 20-30 cm. Grape form was cylindrical, cylindrical-conical, or branch. Berries are large, uniform size, spherical, cylindrical or ovoid, pulpy flesh and crunchy. Some varieties can be distinguished by their long duration of storage on the hub, resistance to transport and long storage duration, even in unprepared conditions. The berry skin is rather thick, adherent to the pulp, elastic, of different colors, ranging from green-yellow and golden-yellow, to pink, purple or dark red, usually covered with bloom, giving them a pleasant commercial aspect. The taste is pleasant and some varieties have "scented" flavor or "Muscat" taste. Berries contain 1-2 seeds. It is known that consumers prefer large berries, brightly colored, crisp and refreshing. From this point of view, the following varieties stand out: *Negru crocant de Buziaş* și *Țâța vacii*.

**Table2: Ampelographic characteristics of grape varieties with mixed properties**

Nr.c rt.	Variety/Biotype	Leaf	Grape	Berry
1	Alb aromat de Silagiu	Middle, cuneiform, presents foliar polymorphism.	Medium, cylindrical-conical, rarely placed berry	Medium, oval, the skin is thick, elastic, yellowish-gold, heavy bloom, the aroma of scented
2	Coada oii	Large, pentalobed, with deep sinuses	Great, cylindrical-conical, sometimes parts, with dense berry	Medium to large, oval, the skin is thick, yellowish-green, with bloom fine.
3	Gras aripat de Silagiu	Medium, almost full, with slightly sinus sketched, large and sharp teeth	Large to very large, cilindroconic, wings, berries are often placed	Large to very large, the skin is thick, crisp, yellowish-green, with rust spots
4	Mărcovață	Large, wide, with large teeth	Medium cylindrical-conical, sometimes wing, with rare berry	Middle, with greenish yellow skin, intense bloom
5	Roz aromat	Very small, pentalobed	Medium, cylindrical-conical, and berries are often placed according	Medium spherical, the skin is elastic, pink, covered with a fine layer of bloom and has an aroma of muscat.
6	Roz bătut	Medium to large, cuneiform, with small sinuses	Large, cylindrical-conical, sometimes wing, with dense berry	Small to medium, slightly ovoid, the skin is thin, greenish pink with fine bloom

Local varieties with mixed qualities are generally characterized by medium-sized grapes, cylindrical-conical or cylindrical shape, with dense berry under the stem. Berries are medium sized, with elastic or rigid skin, colored in greenish yellow or pink, covered with a medium bloom layer. Berry pulp is fleshy, crunchy and juicy, with a pleasant taste. Some varieties have distinct flavors. Berries have 2-4 seeds of medium size. Grapes of these varieties are suitable both for fresh consumption, but also for producing wine with lower alcoholic strength. Following the qualitative and quantitative traits of this group, we note the following varieties: *Alb aromat de Silagiu* și *Gras aripat de Silagiu*.

**Table 3: Ampelographic characteristics of wine varieties**

Nr.c rt.	Variety/Biotype	Leaf	Grape	Berry
1	Arămiu de Silagiu	Large to very large, cuneiform, pentalobed	Large, cylindrical-conical wing with dense berry	Small, spherical, elastic skin and translucent.
2	Pătrujarcă	Small, orbicular, pentalobed, with deep sinuses and teeth rare	Small, cylindrical, with dense berry.	Medium, slightly oval, the skin is golden green, with thin bloom
3	Cabasmă neagră	Middle, tri or pentalobed, slightly sketched with sinuses	Medium cylindrical wing with dense berries	Medium spherical, the skin is thin, bluish black, with bloom
4	Negru compact de Silagiu	Middle, trilobite, or pentalobed	Small to medium, cylindrical-conical with dense berries	Small, spherical, black leather, covered with bloom
5	Vulpe	Medium to large, pentalobed	Large, cylindrical-conical, wings and forked at the top.	Medium spherical thin skin, reddish, covered with fine bloom

The biotypes for wine grapes are characterized by small or medium-dense berries, grapes with a toil-hardened appearance. Berry pulp was juicy and the thin skin allows significant accumulation of sugars. In this respect we distinguished *Pătrujarcă* variety.

### CONCLUSIONS

Local biotypes constitute a valuable genetic patrimony. In recent years, global but also local research trends aim to restore local varieties' importance in order to obtain high quality, typical authentic products. Rediscovery, research and promotion of local ecotypes contribute to the enrichment of the science of viticulture and wine development practices. The analysis results were remarkable for a number of valuable qualities of local biotypes: *Negru crocant de Buziaș*, and *țâța vacii* in the table grape varieties, *Alb aromat de Silagiu* and *Gras aripat de Silagiu* in the mixed varieties and for wine production *Pătrujarca* has been noted.

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