Ampelographic and agrobiolocal description of a new grape variety - Roze Blaj

[1]Maria Iliescu, [1]Liliana Tomoiagă, [1]Elena-Andreea Pop, [2]Cătălina Dan, [2]Anamaria Călugăr, [2]Anca C. Babeș

[1] Research Station for Viticulture and Enology Blaj, Romania; [2] University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania. Corresponding author: A. C. Babeș, ancababes@usamvcluj.ro

Abstract. Research Station for Viticulture and Oenology Blaj is working to create new vine varieties which addresse the consumer demands, keeping a high quality of grapes. The Roze Blaj vine variety is the newly created and approved by SCDVV Blaj and an important source of germplasm, for the continuation of the breeding activity. The study established the main ampelographic characteristics (botanical and agrobiological characters), resistance to abiotic stressors, cryptogamic diseases, pest attack, agrotechnical and production features. The Roze Blaj variety can be used to induce early ripening, sugar content in must, as well as resistance to manna and mites. It is recommended to cross with varieties, clones or hybrids with a lower sugar concentration in the must. Roze Blaj is a grapevine variety appropriate for white, dry or semi-dry, good quality wines. The variety has a great production potential, whereas the wine obtained has finesse and balance, thus being a successful option for a qualitative final product. The newly created variety, Roze Blaj, exceeded the grape production of the control, Traminer pink-60Bl, had a slightly lower sugar concentration, but with a more balanced acidity, with a very good sugar / acidity ratio.
Key Words: Roze Blaj, repeated individual selection, grape vine, breeding, new grape variety.

Introduction. Research Station for Viticulture and Oenology Blaj is located in the Târnave vineyard, named because most of the vineyards are located on the slopes that delineate the valleys of the Târnava Mare and Târnava Mică rivers. Târnave vineyard includes five wine centres: Blaj, Jidvei, Mediaş Târnăveni, Zagăr and Valea Nirajului (Grecu 2010). Within its Vine Improvement Laboratory, the scientific research activity is oriented towards three main directions. The first of them is the study the varieties from the local assortment, test the new ones in the region and introduce ones from the world assortment in order to establish the capacity of adaptation in the cultivation area from the vineyards located in the viticultural area and of their ameliorating value. The second one goal is the recovery and improvement of the productive patrimony of the plantations through clonal selection, stopping the genetic erosion of the respective varieties able to capitalize as efficiently as possible on the environmental conditions. The third aim of the research centre is the creation of new genetically restructured varieties for high quality white wines characterized by high production potential and quality, different maturation periods, good adaptability to environmental conditions, resistant to diseases, frost and pests.

Following a long and persevering selection work, the Pinot gris 34 Bl, Sauvignon 9 Bl, Traminer rosa 60 Bl, Fetească regală 21 Bl, Riesling italian 3 Bl, Neuburger 10 Bl and Muscat Ottonel 12 Bl clones were obtained and approved (Calugar et al 2018). Those clones are characterized by higher grape productions compared to the maternal varieties, with constant ripening interval and superior quality. The properties, unanimously recognized, of these clonal selections have contributed to their spread in production, on larger and larger areas, in the vineyards of Transylvania and throughout the country.

The Blaj Wine Center is located at the intersection of the geographical coordinates 46°10’31” North latitude and 23°54’52” Eastern longitude. The vineyard perimeter in this area is very favourable for vine cultivation and thus obtaining quality wines with DOC and IG validation. The specific ecoclimatic conditions in Târnave Vineyard allow the

production of high quality dry, semi-sweet or sweet wines, semi-aromatic and aromatic wines and sparkling wines (Ilescu et al 2017).

Ampelography, the comparison among varieties is a scientific methodology accepted for the characterization of grapevine genotypes, based on the description of different morphological, phenological and pomological traits. The method has been standardized and extended by many scientists for more logical and accurate identification of *Vitis* genotypes (Dettweiler 1991).

The preservation of genetic resources is justified by the requirement of protecting varieties in danger of extinction, genes with current and future agronomic interests, and variability in cultural aptitudes and organoleptic complexity (Blanco et al 2007).

The aim of the hereby study was to present the features of the new grapevine variety, whereas the observations and measurements were used to obtain the patent and registration in the official catalogue of varieties for Roze Blaj grapevine variety, on 30th July 2020; investigations were also focused to establish a specific technology and to test the values of the new variety.

Material and Method

Description of the study sites. After a long and persistent selection work, the variety Roze Blaj was obtained and approved at R.S.V.E. Blaj. The experimental tests and determination were made during 3 independent growing cycles (2017-2019) on 10 vines. Given the similarity with Traminer roz-60Bl, the Roze Blaj variety was studied in comparison with the above-mentioned variety taken as control. The experimental plot is located in R.S.V.E. Blaj viticulture farm. The study area was of 0.50 ha for each variety (Roze Blaj and Traminer roz 60 Bl). The vines were planted in 2014 (Roze Blaj) and in 2009 (Traminer roz 60 Bl) at 2.0 m between rows and 1.2 m between vines. Vines were pruned according to the Guyot with replacement arms system. The trellis system was monoplan with three-row wires (1-simple, 2 and 3-double).

Roze Blaj was obtained by individual selection, from a population resulting from sexual hybridization. The method used was repeated individual selection. Initially, it was studied as the hybrid elite, EH 5-26, obtained after the sexual crossing of two other elites, hybrid elite variety 8-33-44 (Iordana x Traminer roz) x hybrid elite variety 51-19 (Raisin de Saint Pierre x Pearl of Csaba).

The ampelographic observations were carried out during vegetation cycle. With respect to descriptor lists, ten average shoots per variety were chosen for analysis. The characters of representing vines were investigated/measured following the specifications of vine growth stages indicated by OIV. According to the definition norms, the shoot tips were investigated when they were of 10 to 30 cm; the features regarding young leaves were recorded on the first four distal leaves; the mature leaf descriptions were carried out between berry set and veraison (onset of maturity), on leaves above the cluster within the medium third of shoot; the clusters were measured when matured; the berrys' characteristics were investigated at ripening ones from the middle of the clusters and woody shoots were analysed after fall of leaves.

The observed UPOV characters were presented in two sections (morphological and agronomic characters) in order to describe certain distinguished features of cultivars (Atak et al 2014).

The grapes were harvested in the second decade of September, in both experimental years, at full maturity. Observations and determinations were performed on 30 grapevines in each clone, organized in 3 replicates with 10 vines/repetition, placed in randomized blocks. Around 50 grapes grapes/clone were collected from 10 vines/ replication (Bunea 2010; Bunea et al 2018). After sampling, the grapes were placed in plastic bags and were sent to the laboratory for analysis to determine the technological maturity, the quantity of sugars, the total acidity expressed as sulphuric acid and the 100 berries weight (Bora et al 2016).

Results and Discussions. With respect to the ampelographic features, it was noted that the rosette at bud burst was reddish with light lilac hues on the edge and the tip of the

young shoot was pubescent and reddish. The first leaves were green with reddish veins, glabrous on the upper side of the blade (lamina), while whitish pubescent on the abaxial side (Figure 2). The type 5 flower was a typical hermaphrodite one, with fully developed androecium and fully developed gynoecium. The shoot was glossy, green-reddish, with small, brown inflorescences and well developed tendrils (Figure 2), with a slower vegetative growth compared with Traminer roz 60 Bl (control). The leaf was of medium size, dark metallic green, with reddish veins, with prominent teeth and less clear lobes (tri- or pentalobate), while the petiole was embossed (Figure 3).

Definitions relevant to mature leaves have been generally approved as powerful way of identifying grapevine genotypes (Kara 1990; Ortiz et al 2004; Santiago et al 2007). Mature leaf features investigated in the present study provided discriminative data, although certain parameters were similar among the studied cultivars (such as the shape of blade, general shape of petiole sinus, shape of teeth, anthocyanin coloration of main veins on upper side of blade etc.) (Figure 1).

Figure 1. Roze Blaj (left) and Tramire roz, clone 60 Bl (right).

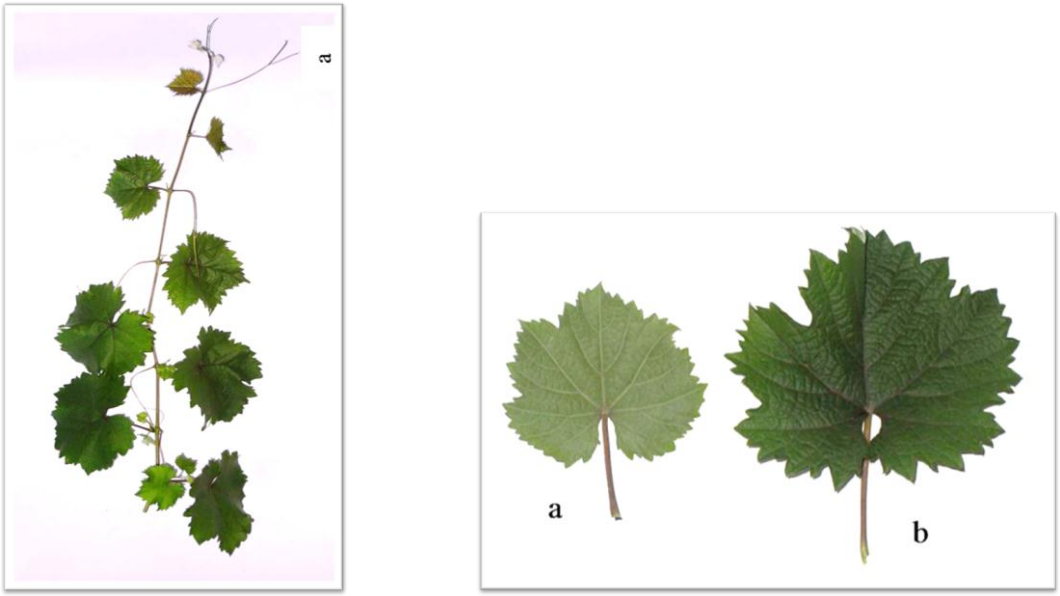

Figure 2. Shoot (left) and leaves (right) of Roze Blaj variety. a) Abaxial side; b) Adaxial side.

The grapes were of 10–14 cm long, truncated form, unrippled (Figure 3). The berry of grapes was spherical, skin had pink colour, similar to Traminer roz variety, both in shape and size. In the contrast, the density of the berries was not high, the grape clusters being semi-lax for the new variety and the skin was thick.

Figure 3. Grapes of Roze Blaj (during the berry growth – left; during rippening – middle and right).

The registration of grape varieties is based on the results of official examinations, after several field tests, covering a large number of characteristics by which the variety is described. Field testing consisted of two tests that determine the distinctiveness, uniformity and stability of the variety, while in the field agronomic, cultivation and technology are set. The characterization of a variety is completed with quality analyzes performed in specialised laboratories.

States of expression are given for each feature to define the varity characteristics and to harmonize descriptions. Each state of expression is allocated a corresponding numerical note for ease of recording the data and for the production and exchange of the description (the 5th column in Table 1). The [x] mark near the note of specific features means that the character is appropiate to the marked variety.

Table 1

Technical questionnaire for the variety Roze Blaj Târnave - TG/50/9

UPOV No.	*Feature*	*Description note*	*Reference (comparisons with well-known varieties)*	*Mark*
1(*)(+)QN	Bud burst	Very early		1
		Early	Nero	3
		Moderate	Chardonnay	5 [x]
		Late	Cabernet Sauvignon	7
		Very late	Airen	9
2(*)(+)QN	Shoot apex (young sprout)	Close	Riparia Gloire de Montpellier	1
		Slightly open	3309 Couderc	2
		Open	Kober 5 BB	3
		Wide open	Cina	4 [x]
		Completely open	Pinot noir, Riesling	5
3(*)(+)QN	Sprout apex pubescence (hair density)	Absent or very scarce		1
		Rare	Chasselas blanc	3
		Medium	Pinot noir	5
		Frequent (pubescent)	Lipovina	7 [x]
		Very frequent (tomentous)	Meunier	9
4(*)(+)QN	Reddish color pubescence at sprout apex (hair color)	Absent or very weak	Furmint	1
		A little intense	Riesling	3 [x]
		Medium	Barbera	5
		Intense	Cabernet Sauvignon	7
		Very intense	Cina	9

UPOV No.	*Feature*	*Description note*	*Reference (comparisons with well-known varieties)*	*Mark*
5 (+)QN	Sprout apex pubescence (hair orientation, in regard with erect trichomes)	Absent or very scarce	Rupestris du Lot	1
		Rare	3309 Couderc	3
		Medium	3306 Couderc	5
		Frequent	Riparia Gloire de Montpellier	7
		Very frequent	-	9
6(*)(+)PQ	Young leaf – adaxial side color of the lamina	Yellow-Green	Furmint	1
		Green	Silvaner	2
		Green with reddish spots	Riesling	3
		Copper red (light)	Koberr 5 BB	4 [x]
		Copper red (dark)	Chasselas blanc	5
		Burgundy red	Deckrot	6
7(*)(+)QN	Young leaf – smooth pubescence near the midrib, on the abaxial side	Absent or very scarce	Rupestris du Lot	1
		Rare	Muscat a petit grain blancs	3
		Medium	Merlot, Riesling	5
		Frequent	Clairette	7
		Very frequent	Meunier	9 [x]
8 (+)QN	Young leaf – erect hairs on the main ribs, abaxial side	Absent or very scarce	Rupestris du Lot	1 [x]
		Rare	3309 Couderc	3
		Medium	Koberr 125 AA	5
		Frequent	Teleki 8 B	7
		Very frequent	Riparia Scribner	9
9 (+)QN	Fruiting cane position (before trellising)	Erect	Garnacha tinta	1 [x]
		Semi-erect	Muscat Ottonel	3
		Horizontal	Barbera	5
		Semi-arcuate	Aramon noir	7
		Arcuate	Albillo Real	9
10 (+)QN	Shoot color on the upper/ventral internode	Green	Sauvignon	1
		Green with reddish spots	Carignan	2 [x]
		Red	Riesling	3
11(*)(+)QN	Shoot color on the bottom/inferior/ventral internode	Green	Sauvignon	1
		Green with reddish spots	Carignan	2
		Red	Mourvedre	3
12 (+)QN	Shoot color on the upper/ventral node	Green	Sauvignon	1
		Green with reddish spots	Barbera	2 [x]
		Red	Koberr 5 BB	3
13 (+)QN	Shoot color on the bottom/inferior/ventral node	Green	3309 Couderc	1
		Green with reddish spots	Börner	2
		Red	Koberr 5 BB	3
14 QN	Pubescence on the length of the internodes (hair frequency)	Absent or very scarce	3309 Couderc	1 [x]
		Rare	161-49 Couderc	3
		Medium	Teleki 8 B	5
		Frequent	Koberr 125 AA, Riparia Scribner	7
		Very frequent	Cina	9
15 QN	Tendrils length	Very short	Rupestris du Lot	1
		Short	Aramon noir	3
		Medium	Pinot noir	5 [x]
		Long	Chasselas blanc	7
		Very long	Emperor	9

UPOV No.	*Feature*	*Description note*	*Reference (comparisons with well-known varieties)*	*Mark*
16(*)(+)QL	Reproductive organs of the flower	Complete stamina, no gyneceum	Rupestris du Lot	1
		Complete androecium, gyneceum incomplete	3309 Couderc	2
		Androecium and gyneceum completed	Chasselas blanc	3 [x]
		Refelcted stamina, gyneceum completed	Koberr 5 BB, Ohanes	4
17 (*)QN	Mature leaf, the size of lamina	Very small	Paulsen 1103	1
		Small	Gamay	3
		Medium	Cabernet Sauvignon	5 [x]
		Large	Carignan	7
		Very large	Bobal, Emperor	9
18(*)(+)PQ	Mature leaf, the shape lamina	Cordiforme	Petit Verdot	1
		Arrow-headed	Riparia Gloire de Montpellier	2
		Penta-lobate	Chasselas blanc	3 [x]
		Orbicular	Clairette	4
		Reniform	Rupestris du Lot	5
19 QN	Mature leaf, corrugated upper side of lamina	Absent or very weak	Rupestris du Lot	1
		Weak	Chasselas blanc	3 [x]
		Medium	Semillon	5
		Strongly	Merlot	7
		Very strongly	Brancellao	9
20(*)(+)QN	Mature leaf, number of lobes	One	Rupestris du Lot	1
		Three	Chenin blanc	2
		Five	Chasselas blanc	3 [x]
		Seven	Vermentino	4
		More than seven	Hebron	5
21 (+)QN	Mature leaf, the depth of lateral & superior sinuses	Absent or very slight	Melon	1
		Superficial	Gamay	3
		Medium	Merlot	5 [x]
		Profound	Chasan	7
		Very deep	Chasselas Cioutat	9
22 (+)QN	<u>Only for lobed leaf varieties</u> Lateral& superior Lobes' position	Open	Folle Blanche	1
		Closed	Chasselas blanc	2
		Slightly overlaid	Cabernet Sauvignon	3
		Overlaid	Clairette	4
23(*)(+)QN	Mature leaf, lobes position at the petiolar sinus	Very wide opened	Rupestris du Lot	1
		Wide opened	Riparia Gloire de Montpellier	2 [x]
		Semi-opened	Aramon noir	3
		Slightly opened	Sauvignon	4
		Closed	Chasselas blanc	5
		Slightly overlaid	Aubun	6
		Overlaid	Riesling	7
		Strongly overlaid	Clairette	8
		Very strongly overlaid	Domina	9
24(*)(+)QN	Mature leaf, marginal teeth length	Short	Pinot noir	3
		Medium	Merlot	5 [x]
		Long	Carignan	7
25(*)(+)QN	Mature leaf, teeth length relative to their width (length/width)	Very small	157-11 Couderc	1
		Small	Silvaner	3
		Medium	Chasselas blanc	5 [x]
		Big	Muscat de Alexandria	7
		Very big	Sangiovese	9

UPOV No.	Feature	Description note	Reference (comparisons with well-known varieties)	Mark
26(*)(+)PQ	Mature leaf, marginal teeth shape	Both sides concave, straight	-	1
		-	Muscat a petit grain blancs	2
		Both sides convex	Chenin blanc	3 [x]
		A concave and a convex side	Aspiran	4
		Mixture of rectilinear and convex sides	Cabernet franc	5
27(*)(+)QN	Mature leaf, midribs with anthocyanic pigmentation on the adaxial side	Absent or very few	Garnacha tinta	1
		Few	Muscat de Alexandria	3 [x]
		Medium	Dornfelder	5
		Present	Dekrot	7
		Frequent	Cabernet Mitos	9
28 (*)QN	Mature leaf, smooth hairs on the midribs on the abaxial side	Absent or very few	Chasselas blanc	1
		Rare	Gamay	3
		Medium	Cabernet Sauvignon	5 [x]
		Frequent	Clairette	7
		Very frequent	Isabella	9
29 (*)QN	Mature leaf, erect hairs on the midribs on the abaxial side	Absent or very few	Rupestris du Lot	1
		Rare	Perla de Csaba	3
		Medium	Muscat Ottonel	5 [x]
		Frequent	Kober 125 AA	7
		Very frequent	Börner	9
30 (+)QN	Mature leaf, petiole length relative to midrib	Much shorter	-	1
		Slightly shorter	Riparia Gloire de Montpellier	2 [x]
		Equal	Garnacha tinta	3
		Slightly longer	Cardinal Rg	4
		Much longer	-	5
31(*)(+)QN	Veraison	Very early	Perla de Csaba	1
		Early	Pinot noir	3
		Medium	Riesling	5 [x]
		Late	Carignan	7
		Very late	Olivette noire	9
32 (*)QN	Grape cluster, the length without peduncle	Very short	Kober 5 BB	1
		Short	Riesling	3
		Medium	Chasselas blanc	5 [x]
		Large	Trebbiano Toscano	7
		Very large	Nehelescol	9
33(*)(+)QN	Grape cluster, the compactness	Very lax	Uva rara	1
		Lax	Cardinal	3
		Medium	Chasselas blanc	5 [x]
		Compact	Sauvignon	7
		Very compact	Meunier	9
34(*)(+)QN	The length of the main cluster peduncle	Very short	Silvaner	1
		Short	Gewürztraminer	3
		Medium	Marsanner	5 [x]
		Long	Alphonse Lavallee	7
		Very long	Freisa	9
35 (*)QN	The size of the berry	Very small	Corinthe noir	1
		Small	Riesling	3
		Medium	Blauer Portugiesier	5 [x]
		Large	Muscat de Alexandria	7
		Very large	Alphonse Lavallee	9

UPOV No.	Feature	Description note	Reference (comparisons with well-known varieties)	Mark
36 (*)QL	The shape of the berry	Oblong	Tompa	1
		Globular, spherical	Chasselas blanc	2 [x]
		Elliptic, oval	Müler Thurgau	3
		Elliptic, elongated	Olivette noire	4
		Cylindrical	Kahlili belyi	5
		Troncovoid	Ahmeur bou Ahmeur	6
		Ovoid	Bicane	7
		Obovoid	-	8
		Ellipsoidal	Santa Paula	9
		Finger-shape	Black finger	10
37 (*)PQ	The color of the berry skin (without the wax)	Green	King Husainy	1
		Green-Yellow	Chasselas blanc	2
		Yellow	Palatina	3
		Yellow-Pink	Moscatel grano menudo rojo	4
		Pink	Chasselas rose	5
		Red	Molinera gorda	6 [x]
		Gray red	Pinot gris	7
		Dark purple red	Cardinal	8
		Bluish purple	Pinot noir	9
38 QN	Berry adhesion to pedicel	Strong	Carignan	1
		Moderate	Silvaner	2 [x]
		Easy	Isabella	3
39 QN	The thickness of the berry skin	Thin	Chasselas blanc	1
		Medium	Carignan	2 [x]
		Thick	Servant	3
40 (*)QN	The anthocyanic pigmentation of the flesh	Absent or fairy	Pinot noir	1 [x]
		Fairy	Gamay de Bouze	3
		Medium	Gamay de Chaudenay	5
		Intense	Alicante Bouschet	7
		Very intense	Deckrot	9
41 QN	The firmness of the flesh	Soft	Pinot noir	1 [x]
		Moderate	Italia	2
		Strong	Sugraone, Sultanina	3
42 (*)PQ	Berry taste	Tasteless	Auxerrois	1 [x]
		Muscat	Muscat de Alexandria	2
		Foxy	Isabella	3
		Herbaceous	Cabernet Sauvignon	4
		Other	Chardonay, Merlot, Pinot noir, Riesling	5
43(*)(+)QL	Seeds	Absent	Corinthe noir	1
		Rudimentary	Sultanina	2
		Complete	Riesling	3 [x]
44 PQ	Cane color	Yellowish brown	Garnacha tinta	1
		Orange brown	Malvar, Portugieser	2
		Dark brown	Chasselas blanc	3
		Reddish brown	3309 Couderc	4 [x]
		Purple	Aestivalis Jäger	5

(*) Asterisked features are those included in the Test Guidelines, thus are important for the international harmonization of variety descriptions and should always be examined for DUS and included in the variety description by all members of the Union, except when the state of expression of a preceding characteristic or regional environmental conditions render this as inappropriate.
QL - Qualitative feature;
QN - Quantitative feature;
PQ - Pseudo-qualitative feature.

The following 9 states of expression are used to describe varieties and should be marked as appropriate: very small – 1; very small to small – 2; small – 3; small to medium – 4; medium -5; medium to large – 6; large – 7; large to very large – 8; very large – 9.

The vine vigor was high, with a good fertility (more of 60% fertile shoots).

The weight of a grape cluster was around 145-150 g and weight of 100 berries was 140 g (Tables 2 and 3).

Table 2

The fertility and productivity of variety Roze Blaj

Variety	*Fertile shoots (%)*	*Fertility coefficient*		*Weight of 100 berries (g)*	*Average weight of a bunch (g)*	*Productivity index*	
		relative	*absolute*			*relative*	*absolute*
Roze Blaj	61	1.1	1.8	141	145	155	261
Traminer roz-60 Bl (control)	32	0.3	1.3	172	96	28	125

Table 3

The production of grapes and quality of must

Variety	*No. of bunches vine^{-1}*	*Yield*		*Quality of grape must*	
		kg vine^{-1}	*kg ha^{-1}*	*Sugar g L^{-1}*	*Acidity g L^{-1} H_2SO_4*
Roze Blaj	31	3.34	13.91	225	5.2
Traminer roz-60 Bl (control)	19	1.76	7.33	258	4.3

The Roze Blaj had a grape production between 2-4 kg vine^{-1}. The sugar concentration was 210-230 g L^{-1} and the acidity was between 4.5-6.0 g L^{-1} expressed as sulfuric acid.

Thus, it can be said that the Roze Blaj varity is suitable for high quality white wines.

According to biological resistance, the Roze Blaj variety has a medium frost resistance. The variety has a quite high resistance to manna and medium tolerance to gray rot. Regarding pests, it has a good resistance to mites attack.

The time interval of bud burst (green shoot clearly visible, stage 08) fluctuated between 17 and 19 April. Full flowering fluctuated between 30 May and 12 June. Veraison was between 21 and 24 August and the maturity between 26 and 20 September. Vegetation period fluctuated between 166 an 192 days.

Conclusions. The grapevine variety, newly created and approved by Research Station for Viticulture and Oenology Blaj, is an important source of germplasm, for the continuation of the breeding activity. The Roze Blaj variety can be used to induce early ripening, sugar content in must, as well as resistance to manna and mites. It is recommended to cross with varieties, clones or hybrids with a lower sugar concentration in the must. Roze Blaj is a grapevine variety for white, dry or semi-dry, quality wines, with the ripening of the grapes in September. The variety has a great production potential, with a good quality of the must, the wine obtained has finesse and balance. The newly created variety, Roze Blaj exceeded the grape production of the control, Traminer roz-60 Bl, had a slightly lower sugar concentration, but with a more balanced acidity, with a very good sugar/ acidity ratio.

References

Atak A., Kahraman K. A., Söylemezoğlu G., 2014 Ampelographic identification and comparison of some table grape (*Vitis vinifera* L.) clones. New Zealand Journal of Crop and Horticultural Science 42(2):77-86.

Ates F., Coban H., Kara Z., Sabir A., 2011 Ampelographic characterization of some grape cultivars (*Vitis vinifera* L.) grown in South-weStern region of Turkey. Bulgarian Journal of Agricultural Science 17(3):314-324.
Belea G., 2008 Cercetări privind optimizarea structurii vegetaţiei viţei-de-vie în vederea îmbunătăţirii calităţii producţiei. Teză de doctorat. USAMV Bucureşti.
Blanco C., Martinez T., de Toda F. M., 2007 Analysis of the intervarietal heterogeneity in the vine germplasm of la Rioja (Spain). Acta Horticulturae 754:39-43.
Bora F. D., Donici A., Oşlobanu A. et al 2016 Qualitative Assessment of the White Wine Varieties Grown in Dealu Bujorului Vineyard, Romania. Notulae Botanicae Horti Agrobotanici 44(2):593-602.
Bora F. D., Pop T. I., Babeș A. C. et al 2015 Research on the Quality of the Three White Wine Varieties in Transylvania, Harvest of 2013-2014. Bulletin of University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Horticulture 72(2):327-334.
Bora F. D., Pop T. I., Bunea C. I. et al 2014 Influence of Ecoclimatic and Ecopedological Conditions on Quality of White Wine Grape Varieties from North-West of Romania. Bulletin of University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Horticulture 71(2):218-225.
Bunea C. I., Pop N., Babes A. C., Muncaciu M. L., Iliescu M., Bora F. D., Farcas I., Barsan D., Calugar A., 2018 The influence of the different training systems on yield quantity and quality of interspecific hybrid, S.V. 18-402, in Cluj-Napoca, Romania, Lucrari Stiintifice, Vol. 47, PG. 314-319, Universitatea Agrară de Stat din Moldova, Facultatea de Horticultură, Chişinău.
Bunea C. I., Ardelean M., Pop N. et al 2010 Influence of Variety and Type of Cultivation (Organic and Conventional) on Quality, in five wine grape varieties, grown in Cluj County. Bulletin of University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Horticulture 67(1):179-182.
Bunea C. I., Popescu D., Bunea A., Ardelean M., 2013 Variation of attack degree of downy mildew (*Plasmopara viticola*) in fve wine grape varieties, under conventional and organic control treatments. Journal of Food, Agriculture and Environment 11(3-4):1166-1170.
Călugăr A., Babeş A. C., Bunea C. I., Pop T. I., Tomoiagă L., Iliescu M., 2018 Oenological characterization of wines from grape clones created at Research Station for Viticulture and Enology Blaj, Romania, Ştiinţa agricolă 2:50-56.
Dettweiler E., 1991 Preliminar minimal descriptor list for grapevine varieties. Institute for Grapevine breeding Geilweilerhof, Siebeldingen, FRG.
Grecu V., 2010 Resistant grapevine varieties and their cultural particularities. Bucureşti: Ed. M.A.S.T., pp. 29-31.
Iliescu M., Farago M., Pop N., 2010 Studies on the Behaviour of the Main Grape Varieties for White Wine, in SCDVV Blaj. Bulletin of University of Agricultural Sciences and Veterinary Medicine ClujNapoca, Horticulture 67(1):495.
Iliescu M., Rusu A., Răcoare H., Tomoiagă L., Babeş A. C., 2018 Studies on the influence of climatic conditions in the years 2015-2017, on the behaviour of the main vinifera varieties in the Târnave vineyard, Academic Pres Cluj Napoca. Bulletin of University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Horticulture 75(1+2):43-53.
Kara Z., 1990 Determination of the ampelographic characters of grape varieties grown in Tokat, PhD Theisis, Ankara Uni, Ankara, 318 p.
Ortiz J. M., Martin J. P., Borrego J., Chavez J., Rodriguez I., Munoz G., Cabello F., 2004 Molecular and morphological characterization of a *Vitis* gene bank for the establishment of a base collection. Genetic Research and Crop Evaluation 51:403-409.
Popescu D., Iliescu M., Cristea C., Comşa M., 2014 Researches regarding the agrotehnic behaviour of perspective elites obtained at Research Station for Viticulture and Enology Blaj. Bulletin of University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Horticulture 71(2):293-298.

Santiago J. l., Boso S., Gago P., Alonso-Villaverde V., Martinez M. C., 2007 Molecular and ampelographic characterization of *Vitis vinifera* L. 'Albarino', 'Savagnin Blanc' and 'Caino Blanco' shows that they are different cultivars. Spanish Journal of Agricultural Research 5:333-340.

Received: 02 November 2020. Accepted: 04 December 2020. Published online: 11 December 2020.
Authors:
Maria Iliescu, Research Station for Viticulture and Enology Blaj, Romania, Alba County, 515400, Blaj, 2 Gh. Baritiu Street, e-mail: iliescu.maria@scvblaj.ro
Liliana Tomoiagă, Research Station for Viticulture and Enology Blaj, Romania, Alba County, 515400, Blaj, 2 Gh. Baritiu Street, e-mail: tomoiagaliliana@yahoo.com
Elena-Andreea Pop, Research Station for Viticulture and Enology Blaj, Romania, Alba County, 515400, Blaj, 2 Gh. Baritiu Street, e-mail: elene-andreea.pop@usamvcluj.ro
Cătălina Dan, University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania, Cluj County, 400372 Cluj-Napoca, 3-5 Calea Mănăștur Street, e-mail: catalina.dan@usamvcluj.ro
Anamaria Călugăr, University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania, Cluj County, 400372 Cluj-Napoca, 3-5 Calea Mănăștur Street, e-mail: anamaria.calugar@usamvcluj.ro
Anca Cristina Babeș, University of Agricultural Sciences and Veterinary Medicine, Cluj-Napoca, Romania, Cluj County, 400372 Cluj-Napoca, 3-5 Calea Mănăștur Street, e-mail: ancababes@usamvcluj.ro
This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited.
How to cite this article:
Iliescu M., Tomoiagă L., Pop E.-A., Dan C., Călugăr A., Babeș A. C., 2020 Ampelographic and agrobiolocal description of a new grape variety - Roze Blaj. AAB Bioflux 12(3):95-105.