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The Study of Ampelographical and Agrobiological Characters of the Old Local Grape Cultivar "Kryqëz"

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Abstract

The study was carried out on the national field collection of grapevine genetic resources, Valias, during the years 2015-2019. The aim was to evaluate the ampelographical and agrobiological characters of the old local grape cultivar "Kryqëz". It is spread in the southeast area of the country (Përmet, Korçë, Leskovik, Gjirokastër). During the vegetation period were evaluated 53 descriptors, of which 41 morphological characters and 12 agrobiological characters according to the unique scheme and methodology for the ampelographic description of varieties, created by the International Organization of Vine and Wine (O.I.V), in collaboration with the International Union for the Protection of New Varieties of Plants (U.P.O.V) and the International Board for Plant Genetic Resources (I.B.P.G.R). The data obtained identified the ampelographical characteristics of the old local grape cultivar "Kryqëz". The analyzing of the agrobiological data showed that the cultivar "Kryqëz" has a great production potential, with a very good sugar/acidity ratio and medium resistance degree to fungal diseases. It is a grape cultivar for white, good quality wines**.** This study is a contribution in the ampelographical description and precedes molecular characterization study. It serves for genetic improvement work as well as for wider spread of his cultivation.

Keywords: characterization, grapevine, genetic resources

1. Introduction

Grapevine (Vitis vinifera L.) is one of the most important fruit crops in Albania. The area planted with vines in Albania is about 12 000 ha [5]. The cultivation of grapevine in our country is widespread due to the special geographical conditions [1]. The relief structure, soil and climatic variability and the long traditional cultivation of grapevine make the grapevine diversity in Albania to remain high. [3][4]. The conservation of the grapevine biodiversity is one of the main duties of Institute of Plant Genetic Resources in order to reduce the genetic erosion, but the

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characterization and the evaluation of the autochthonous grapevine is another important objective in order to use them sustainably. The older grapevine cultivars collected in the National Grapevine Collection, Valias are good assets. The study of autochthonous grapevine cultivars has great practical interest, which is why this study is undertaken with the aim to evaluate the ampelographical and agrobiological characters of cv "Kryqëz", one of the old local grape cultivar spread in the southeast area of the country [7].

2. Material and Method

The study of old local grape cultivar "Kryqëz" was carried out on the national field collection of grapevine genetic resources, Valias, during the years 2015-2019. The characters of shoot tips, shoots, young leaves, mature leaves, bunch and berry were evaluated during the vegetation period. In total were evaluated 53 descriptors, of which 41 morphological characters and 12 agrobiological characters according to the unique scheme and methodology for the ampelographical description of varieties, created by the International Organization of Vine and Wine (O.I.V), in collaboration with the International Union for the Protection of New Varieties of Plants (U.P.O.V) and the International Board for Plant Genetic Resources (I.B.P.G.R) [6] [2]. Observation on the shoot tips were made when the shoots were 10-30 cm long. The young leaves were investigated on the first 4 distal unfolded leaves. Observations on the shoot were made in the middle third of the shoot. Observations on mature leaves were made between berry set and beginning of berry maturity on the leaves on the middle third of the shoot, just above the raceme. Bunches and berries were investigated when they are ripened. Berry measurements were made using 100 berries, from 10 bunches. The following agronomic variables were recorded: yield (kg for vine), weight of bunch, number of bunches per shoot, number of bunches for vine, sugar and total acids amount of the must [6]. The sugar content of the juice of berries was determined by a refractometric method, the acidity was titrated with 0.1 N NaOH solution. The evaluation of the infections grade from plasmopara viticola and uncinula necator on the leaves is done three weeks before flowering and on the bunches before harvest.

3. Results and Discussions

Ampelographical and agrobiological study of the old local grape cultivar Kryqëz identified the descriptive characters of this cultivar and its attitude in the soil and climatic conditions of Valias collection. In the table 1 are given the results of his ampelographical characterization. The leaf of cv. Kryqëz has medium size of the blade, pentagonal shape and five lobes. The anthocianin coloration of the main veins on upper side of the blade is very weak. The shape of the teeth is convex with medium length and the shape of the petiole sinus is open. Density of erect hairs between veins is medium. The bunch is medium, large with long peduncle. The berry is round, medium, green color, with 1-2 seeds in medium size. (Fig.1) The table 2 shows the results of agrobiological characteristics of the local grape cultivar Kryqëz. The weight of bunch varied from 314g to 367g, the medium length of bunch is 17.3 cm and the medium width of bunch is 14.2. The cultivar "Kryqëz" has a great production potential. The analyses of sugar content and the total acidity showed that cv. Kryqëz has a very good sugar/acidity ratio. The amount of sugar content varied from 22.8 % to 23.8 % and the total acidity varied from 3.8 to 4.5 g/l. The evaluation of the leaves 3 weeks after flowering and the bunch and berry before harvest for the resistance against *uncinula necator* and *plasmopara viticola* showed that this cultivar is medium resistant, with 20-30% of the bunch attacked.

Table 1 The main ampelographical characteristics of old local grape cultivar “Kryqëz”

Year	Weigh of bunch (g)	Length of bunch (cm)	Width of bunch (cm)	Length of bunch/width of bunch ratio	Number of berries	Sugar content %	Total acidity g/l
2015	330	17.0	14.2	1.23	205	23.8	3.8
2016	324	16.3	13.9	1.12	201	23.2	4.1
2017	367	18.2	13.3	1.31	204	22.9	4.2
2018	314	18.6	14.6	1.22	197	22.8	4.5
2019	320	16.7	14.0	1.20	198	23.5	4.0
2015/2019	331.2	17.3	14.2	1.22	202.3	23.2	4.1

Table 2 The agrobiological date of old local grape cultivar “Kryqëz”

OIV Code	The level of expression	OIV Code	The level of expression
1	5	79	4
4	5	81	1
6	3	84	3
16	1	87	3
51	1	223	4
67	3	225	1
68	2	452	5
70	3	453	5
76	3	455	5
77	5	456	5

Figure 1 Cultivar “Kryqëz”

4. Conclusions

The descriptive card of old local cultivar "Kryqëz" is updated and all the results should be upgraded to the database for grapevine varieties to obtain an overview of this cultivar. The study of descriptive characters of shoot tip, shoots, flowers, mature leaf, bunch and berry confirm that cultivar "Kryqëz" has a separate phenotype. This work will be considered as a first step towards true - to - type identification, which will facilitate his registration and allow growers to be sure of the value of this product. Cultivar "Kryqëz" has a great production potential, with a very good sugar/acidity ratio and medium resistance degree to fungal diseases. It is a grape cultivar for white, good quality wines.

5. References

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