



Evaluation of Morphological Diversity Russian Grapevine in Iran

Mahdi Tajalifar*¹, Jafar Ahmadi², Valiollah Rasoli³, Mohammad Mehdi Zarrabi⁴

¹MSc in Plant Genetics and Plant Breeding, Imam Khomeini International University, Qazvin,

²Ph.D. in Plant Breeding, International University of Imam Khomeini qazvin

³Assistance Professor(Phd), Horticulture Crops Research Department, Qazvin Agricultural and natural Resources Research and Education Center, AREEO, Qazvin, Iran

⁴Ph.D. in Horticulture, Imam Khomeini International University Qazvin

Abstract

Grapes are one of the most important fruit products in Iran, which has a great deal to use in fresh and raisin. In Iran, in addition to indigenous cultivars, there are also imported cultivars that can be introduced the Russian and American grape cultivars.

Using the genetic diversity method used to adapt new inputs, the Russian cultivars were adapted to the Iranian environment. In the next step, they evaluated the morphological traits of Russian grapes with 50 morphological traits, which ultimately determined the morphological diversity of Russian grape.

Area of study: Research Station grade1 Takestan, Qazvin, Iran

Keywords: Grapes; fresh; Russian grape; adapt and morphological traits.

Grapes are one of the most cultivated crops in temperate regions, and after citrus and bananas, they have the highest cultivation area among fruit trees. Iran is one of the primary areas for grape cultivation, so it is important to study the diversity of Iranian grapes and the presence of key genes. The evaluation of genetic resources and the determination of their relationships can be done by evaluating morphological traits. But morphological traits are not able to detect cultivars, especially cultivars with close phenotype. Because these traits are influenced by the environment on the one hand, and on the other hand, the grape variety should be evaluated for several years (Ramezani et al, 2007). In general, there are two different theories about the history of grapes. Some believe that grapes were used by humans even before the advent of cereals and were wild and abundant in forests. Early humans used grape leaves and fruits. Grapes contain vitamins A, B and C and contain elements of magnesium.

The plant grape belongs to the family vitaceae and the genus *Vitis*, with most of the commercial varieties being species (*V. Vinifera*) (www.sciencedirect.com). Grapes are the most important fruit in the world and Iran in terms of production. The plant that produces grapes is called a hair or vine, and it is a shrub with full flowers that depend on the genus Takestan. There are about 60 species of vines that are found throughout the northern hemisphere, especially in cold regions. Commercial vines belong to three groups (European, American, and Muscadine), of which the European type is more important. Iranian hair is of European type, whose main homeland is West Asia and Southern Europe (Khosh-Khui et al. 1997).

Materials and Methods

Study Site

The study was carried out at the first-class vineyard of Takestan Grape Research Station, which is located 3 km from Takestan city 36°3' 2" North Width" 49° 40' 51" East and its height is 1250 meters above sea level, with humid climate and loamy soil texture.

In the present study genetic diversity of 72 Russian grape cultivars and genotypes at Grape Vineyard Research Station the Qazvin Agricultural and Natural Resources Research Center was evaluated using 50 traits quality in 2014,2015 and 2018. The experimental design used was a completely randomized block with three replications. White willow (commercial and dominant cultivar) was used as a control. The cultivation system used in the area was Kurden (a two-sided floor) with a planting distance of 2.5 x 2.5 m and the number of plants per experimental unit was two. Data were collected during the fruit ripening in August. In this study, preliminary selection and screening of genotypes were performed based on morphological, fruiting and fruit characteristics (Erner and Shomer, 1995). According to the IBPGR, 72 Russian grape cultivars have 50 morphological quality traits, which we will describe below.

Growth stages of grapes: 1) Growth of buds 2) Young branches 3) Young leaves 4) Branches of this year 5) Flowers 6) Fruits 7) Wooden branches

(Erner & Shomer, 1995; Chervin et al, 2012).

Growth of the bud: Starting time from swelling to bursting buds

Young branch: In the young branch, the following traits are observed: 1) tip opening rate 2) Flattening shape 3) The anthocyanin color of the lying tip of the crust 4) The tip of the crust of the tip.

Young leaves: In young leaves, the following traits are observed: 1) the surface of the surface of the surface 2) the thickness of the fluff Main veins on the underside of the flattening.3) Cortical constriction

*Corresponding author: Mahdi Tajalifar, MSc in Plant Genetics and Plant Breeding. Imam Khomeini International University, Qazvin, Tel: +98 2833367725 Email : mahdi.tajalifar@yahoo.com

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standing on the main veins at the bottom of the flattening.

Branch of the current year: In the branch of this year, the following traits are observed: 1) Growth habit 2) The color of the back part between the node 3) The color of the abdominal part between the node 4) The color of the back of the knot 5) The color of the abdominal part of the knot 6) Among the nodes 7) Number of consecutive ivy 8) Ivy length.

Flower: The grapevine expressions are from inflorescence to the end of flowering.

Full leaf: In the full leaf, the following traits are observed: 1) Flattening size 2) Flattening shape 3) Cross section 4) Lacing Flatbed surface 5) Lobe number 6) Upper lateral cavity depth 7) Upper cavity arrangement between the folds 8) Shrinkage arrangement in the adjacent vertebrae 9) Cutting end to the main ventricles 10) Tent length 11) Length ratio Tooth width 12) Tooth shape 13) Anthocyanin color of the main vein on the surface of the flattening 14) Cork density lying between the main veins on the underside of the flattening. 15) The crust density standing on the main veins on the surface 16) petiole length compared to middle vein.

Fruit: The following traits are observed in the fruit:

1) Bean start time 2) Cluster size 3) Cluster density 4) Cluster tail length 5) Cubes size 6) Cube shape 7) Cuboid skin color 8) Ease of separation from pedal 9) The thickness of the cabbage skin 10) Meat Anthocyanin color 11) Meat firmness 12) Juicy meat Meat 13) Special taste of the cab 14) Formation of cube seeds.

Wooden Branch: In the wooden branch, the following traits are observed: 1) the main color of the wooden plank 2) the flatness of the wooden plank.



Figure1. Specifications of first-class vineyard station takestan

Name of Russian grape cultivars

This table is list Russian grape cultivars.this table have species muscat.

Table(3):Name of Russian grape cultivars

1	Yolki biser	25	Kobovki Ramphi	49	Kara Falan
2	Akuzorsh	26	Muscat Ramphi	50	Babo Zakat
3	Ramphi TCXA	27	New Ukranski Ramphi	51	Kishmish Luchizayi
4	X46	28	Kishmish Hiras	52	Kuni Gocharov
5	Qazanski Ramphi	29	Asadovki	53	Moranti
6	Suzan Dolzar	30	gulovki	54	Ichol Yaprak
7	Muscat Uzbekistan	31	Malingar Ramphi	55	Moukhtchaloni
8	Bobki mazaracha	32	Ramphi Vir	56	Kishmish Zebzar
9	Bli Ramphi	33	sharmiani	57	Valen Den
10	skiph	34	Bermamphi Ramphi	58	Isala
11	Lambovskii Ramphi	35	Ramphi esrey	59	Biran
12	Ramphi Indansarsh	36	Yoromonk	60	Angur Sakh Shaartuzki
13	Muscat Yamstani	37	Dedevki Ramphi	61	Ranii Vira
14	Ezovskii Ramphi	38	Muscat Bli	62	Bogovur
15	Muscat Kuzovki	39	No.48	63	Tuy. Ish Ganchinskii
16	Kishmish Ramphi Azer	40	Ruski Ramphi	64	Dusabha
17	Ukranski Ramphi	41	No.47	65	Moldona
18	Neyrod Yalon	42	Kibovskii Ramphi	66	Liana
19	X45	43	tiatnat	67	Gendevng Rendu Kentsky
20	Anapitski Ramphi	44	Madim Anzhenin	68	Neulizak
21	morbi	45	Zenbi 13-166	69	Ichol Otuzum
22	giback	46	Anapitski	70	Bidanah 1
23	Yalovki Ostochin	47	Yalovki Sloy	71	Bidanah 2
24	Vastak	48	Belgradskii Ramphi	72	Bidanah 3

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