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SOME GREENGAGE AND PLUM VARIETIES COMMON IN THE TERRITORY OF THE NAKHCHIVAN AUTONOMOUS REPUBLIC AND THEIR BIOMORPHOLOGICAL PROPERTIES**Abstract**

The selection of fruit and fruit breeds of each zone is one of the most efficient means of increasing the yields of varieties in meeting the population's demand for food crops, including fruit and fruit crops. Each zone of our republic with rich fruit varieties requires ways to increase fruit production, lower crop yields, use land more efficiently, and improve labour productivity and other economic activities. Because of its importance within dandelion fruit plants, the greengage plant is one of the special places. For quick productivity, yielding every year, tolerance to diseases and pests opens up plenty of opportunities for cultivating the greengage in various fields.

Keywords: Plum, greengage, prunus, dandelion, blue plum, phenology

Introduction

A number of local and incoming fruit crops are cultivated on farms in regions and zones of Azerbaijan such as Guba-Khachmaz, Shirvan, Lankaran-Astara, Ganja, Gazakh, Shaki-Zagatala, Nakhchivan and others. Sometimes, without learning, fruit crops are cultivated without being identified for local conditions. Specifically, in recent times, a number of shooty, shriveled fruit plants have been growing varieties that are not at all valuable to local conditions. In this respect, the local fruit varieties of our republic are also compressed and eliminated. Our main goal was to study greengage and plum varieties distributed in the autonomous republic, study the biology of flowering and harvesting, and offer some suggestions.

Material and methods

Azerbaijan is one of the first homeland of greengage Native greengage varieties cultivated on farms still retain their prominence. The late professor A.J.Rajabli, in his monograph "Fruit crops of Azerbaijan" (1966), elaborates on the varieties of greengage in Azerbaijan. For our republic, which is considered the home of the greengage, she interprets a number of valuable greengage varieties (Sabran, Spring, Summer and Autumn sort), Arash greengage (Istambul) Goyja, etc.

Dominance in classification, based on systematic principles (Safarov, Jalilov, Asadov, 1981: 123; Shennikov, Vvedeniye's geobotanic, Shennikov, 1975: 447; Yroshenko, 1967: 27-31; Grosgeym 1946: 671) and the references of other researchers were used.

The greengage plant is produced fresh and processed at the same time. Sugar (14%), acids (4%), pectin (15%), a number of vitamins B, E, P, etc. are necessary for the human body (Ibrahimov, 1981: 117-122).

Greengage is a fruit plant that has also gained a reputation as the world's pomology. This valuable plant is cultivated in vast fields in Krasnador, Moldova, Germany, Turkey, and Italy. Azerbaijan is one of the first homelands of greengage (Abutalibov, Hajiyev, Isayev, Safarov, Khalilov, 1975: 213-229). Native greengage varieties cultivated on farms still retain their prominence. In recent times (1986-2022), extensive research work has been carried out on the biological farming properties, disease and pest resistance, planting schemes, etc. of a variety of native and introduced varieties of greengages. (Talibov, Ibrahimov, 2008: 126-133).

The greengage and plum are included in the Rosaceae family of the Rosales line of the Angiosperms in the Plants' World. These plants are concentrated within the genus *Prunus*-plum.

A tree or shrub that is not very large is an umbrella or pyramid-shaped umbrella. The stem is brown, thorny or thornless. The leaves are rounded, with round ellipses, eggshells, reversed eggshells, and prickly. The flowers are together or single one by one. (Gladkova, 1989: 104-113). It opens in spring before leafing or at a time with leaves. The calyxes and petals are 5, the males are numerous. The ovary is unilocular and bilocular. The fruit consists of smooth-surface, single-stemmed, cartilage and juicy meat. The cartilage is oval, and tapered to the sides. The leaves of the plum tree and bush fall in autumn. Buds are usually thornless, sometimes thorny. (Asgarov, 2005: 247).

Planted and grown varieties of this plant occupy a great place in the country's horticultural farm. Plum species require nutritious and humid soil. It sprouts from the root and maintains its ability to sprout until it gets old.

Five sorts of plum species that are common in countries with good climates occur in the Caucasus and Azerbaijan, of which only two sorts are planted and grown. Ibrahimov, 2001: 68).

Private farms did not have separate orchards on any public farm, with the exception of mixed orchards on individual farms, when people selectors upgraded valuable greengages and expanded their areas.

The most valuable greengage varieties, which are unique in stone fruits, are biodegradable to farms if their fields are expanded, and are recommended to be planted and cultivated on public farms. (Ibrahimov, Talibov, 2000: 12-23; Isgandarov, Rosa, 1999: 92- 95).

Species and varieties of greengage (*Prunus*) plant common in Nakhchivan AR

1. Genus: *Armeniaco* – *Prunus* Cinovskis greengage-apricot

1 (1) **A. dasycarpa* (Ehrh.) Cinovskis – Hairy greengage-apricot

2. Genus: *Prunus* L. – greengage

2 (1) *P. diverata* Ledeb. – Plum- greengage

3 (2) **P. spinosa* L. – Blue plum

3 (3) **P. nachichevanica* Kudr. – Nakhchivan plum.

3 (4) **P. domestica* L. – Home p.

Gender 1. Greengage-apricot - *Armeniaco*–*Prunus* Ginovskis. A tree up to 6 m high with a dense umbrella and a flat stem. The branches are close to the soil and the trunk is 25-55 cm in diameter. The stem of old trees is dark or grayish-brown, and the stem in young cranes is covered with a lightly colored coral, which is reddish-brown; the leaves are simple eggshells, and the shoots are girdle-shaped. The hairs are white, and the large petals are round. The males are white and number 25-40. The female is fluffy and the ovule is yellow. Fruits range in color from light yellow to reddish-orange. It has pits in it. The size and shape of the trunk are different. The trunk adheres to the fleshy part of the fruit or is easy to separate from. The leaf blooms ahead, and the flowering takes 7-10 days. It spread among the shrubs and in the forest of Arafsa (Treasure-Valley) in Julfa district, Batabat, Bichanak of Shahbuz district, Khurs of Ordubad district, villages of Nurgut. This genus has one species in the Autonomous Republic.

Hairy greengage - apricot - *A. Dasycarpa* (Ehrh.) Cinovskis. The trees aren't too tall. The flowers are white and large. The petals are round. The female is fluffy and the ovule is yellow. It blooms and produces seeds in April-May. Culturally cultivated. It is found in the Ordubad district in its wild form. The fruits are preserved and jammed. Homeland – Central Asia. Nutritious food. It's mesophyte.

Gender 2. Greengage - *Prunus* L. An umbrella that is not large is a tree or shrub. The stem is brown, with or without thorns. The leaves are round, elliptical and rounded. The flowers are opened before leafing or at the same time as the leaf. The leaves and petals are 5. There are many males. The ovary can be unilocular or bilocular. The fruit is a single-seeded with juicy meat. The speck is oval and tapered.

Greegace plum - *P. Wallicata* Ledeb. A tree with a wide-shaped umbrella that is 10- to 15m high is a shrub in low cases. The branches are thorny. Tumours are brown in color and are 1-1.5 m long. The flower shoots are cone-shaped and egg-shaped. The leaves are bare at the top and hairy at the bottom along the middle vein. The flowers are opened before the foliage. The flower stalk is bare and 1-2.2 cm long. The tips of the leaves are prickly, the petals are 5-10 mm long and white. The egg and its column are bare. The fruit is yellow purple and red and is 3 cm in diameter. The stone is oval-shaped. It blooms in March-April and bears fruit in July-August. It is found around villages of Guanchay, Vanand, Nailnys of Ordubad region, Abragunus of Julfa district, Kirna, Goydara, Alinja, Karabaghs of Kenanli region, Vaykhir, Khalil of Babak region, Karababa, Ashus of Shahbuz region and others, in forests, shrublands, field, mountain slopes, river valleys. It's mesophyte. The eastern seaboard is a type of geographical range.

Nakhchivan Plum - *P. nachichevanica* Kudr. 3 to 5 m tall trees. The fruit is pinkish-green or light red. It's round, it's sharp, it has a cut out base. Culturally cultivated. It is found in Iran in the wild. It's mesophyte. It is a valuable food plant.

Plum - *P. spinosa* L. A tree with a thorny branch that is 3-4 m high. The young scions are yellowish-brown and then bare and shiny. The cover of the plant is dark grayish-brown and has a faint layer. The sprouts are 1-2 mm long and egg-shaped. The leaves are elliptical, undersea egg-laying, the seat of which is wedge-shaped, edge-shaped, and rounded sawdust. The young leaves are short and the mature leaves are bare. Flowers are located one by one and open before leafing. The flower stems are short and bare or hairy. The edge of the cupule is ciliate and the petals are white. The fruit is found on straight standing stems, black and 1-1.5 cm in diameter. It blooms and produces fruit in March and August. The Shahbuz region is common in forests, forest tales, forest areas around the villages of Beachcake, Agbulag, Khurs of Ordubad district, Alahi, Kotam, Milakh of Julfa district, Arafsa, etc. It's mesophyte. It is a geographical range from Europe to the Mediterranean Sea.

Domestic plum - *P. domestica* L. Trees that are 10- to 12m high with wide or low-lying umbrella trees. The branches are unstructured or slightly unstructured. Young hairs are reddish-brown or greenish-brown and bare. The leaves are bare on the base, hairy on the bottom, and elliptical. The petals are 9-11 mm long and are white. Fruits come in different shapes and both sides are tapered. The seed is coarse or slightly rugged, with a wide oval. From April to May, flowers give seeds. It is spread around the villages of Pusyan, Khans, Aralik, Demirchi of Sharur District, Channab, Bilav, Behrud of Ordubad District, Benaniyar of Julfa District, Khalkhal, Kultapa, Vaykhir etc. of Babak District. It is a valuable food plant. It's mesophyte. Private farms did not have separate orchards on any public farm, with the exception of mixed orchards on individual farms, when people selectors upgraded valuable greengages and expanded their areas. The most valuable greengage varieties, which are unique in stone fruits, are biodegradable to farms if their fields are expanded, and are recommended to be planted and cultivated on public farms.

Spring Savory. An ancient species of the Nakhchivan AR, common in Ordubad district. The tree is medium-high and low in height. The leaf is in a special shape. The fruit is crisp, oval round, greenish-yellow, with a clear pink cheek. One fruit weighs 28g. The fruit is solid, wet, it tastes sourly sweet. The fruit grows on the first day of June. It's a productive variety. 60-80 kg of product is produced from a tree. Suitable for mountain zone.

Goyja. Its name is "*goyja*" (*bluish color*) because the fruit is eaten when it is blue. Nakhchivan AR is one of the ancient varieties of the fruit. The tree reaches a height of 5-7 meters. The fruit is oval in a round oval shape with a tapered top. The fruit is solid, greenish, juicy. It begins to ripen on the second day of May and lasts until mid-June. Productive varieties, 70-90 kg of product are produced from each tree. It can be cultivated extensively in the flat zone of Babek, Sharur.

Summer Savory. It is one of the oldest indigenous alchemical varieties of the autonomous republic, especially in the district of Ordubad, which may be more widespread. The tree is tall and shaped like a ball. The fruit is 40-42 g. The fruit is juicy, and fragrant, and the skin is thin. The fruit

grows on the twelfth of August. Each tree yields 50-60 kg. Suitable for drying and shipping to remote locations.

Autumn Savory. It is an ancient local variety. The tree reaches a height of 4 to 5 m. The fruit is oval round, bright yellow. The fruit is juicy, brittle, and tastes sour. The seed is not separated from the fruit. It begins to ripen in early September. Priced for drying and compote.

Rajabi. The tree is medium in size with a height of 3-4 meters. The umbrella is shaped like a pyramid and its branches are scarce around it. The fruit is round, light-yellow, and the bottom is reddish pink. The fruit is juicy, sweet, and flavorful. It's a productive variety. 60-80 kg of product is produced from a tree. The fruit has begun to ripen on the second of July and continues until early August.

Red plum (greengage). An ancient variety of Nakhchivan AR, it can be widely cultivated in the low and mountainous zones of Ordubad, Julfa, Babak, and Sharur. The tree is 5-6 m tall and has a small umbrella and densely leafed. The fruit is a long elliptical with a dark red. The fruit is red, juicy, and soury. The fruit grows at the beginning of September, is a fertile variety, and 80-100 kg of fruit is produced from each tree. It is tolerable to ship to remote locations.

Tabarza. A local variety belonging to Ordubad region, it is advisable to cultivate widely in the low and mountainous zones of the autonomous republic. The tree is tall, the umbrella of the fruit is small, the fruit is juicy and soft, and the fruit grows on the second day of June. A medium-growth variety, 40-50 kg of each tree is produced. Good for eating and compote.

Movuj plum (greengage). We find this in private farms of the Sharur region. Can be cultivated on public farms. The tree is ornate, with an umbrella ball, and branches sparse. The fruit is reddish pink on the inside, light purple, with a ray of sunshine. The flesh is lush, dark purple, tastes sweet, and is short of fruit stalks. The fruit grows on the first of June and resembles dried seasoning 10-15 days after skinning. Valuable jam and compote are readily available. In order to produce abundant and high yields from the weed tree, it is important to seriously fight bodily injury that lowers their productivity.

Flowering phase course of greengage varieties

The yield of each plant depends more on its bloom. It is of practical importance that the varieties are properly selected and placed in the garden, the complex organization of agrotechnical operations, and the proper study of the flowering time of each variety. In fruit and fruit crops, flower shoots do not open simultaneously, even within the same plant. Because of this, they take time from the beginning to the end of flowering in several stages.

The fruit associated with flowering is important in the realization of the harvest, affecting their harvest during the ripening period and at different times in varieties. Given the importance of the mentioned phenological phases in the life of these varieties, the phenophases for the varieties have been studied and the results are given in table # 1.

Periods of passage of phases in greengage varieties

Table 1.

Sorts	Pruning	Beginning of flowering	Massive bloom	Flowering Strength with point	Ripening of fruit	Fruit harvest
Summer Savory	22. III	3. IV	9. IV	4,5	10. VI	14.VI
Autumn savory	28. III	12. IV	19. IV	4	5. IV	10.IX
Arash greengage (Istanbul)	25. III	5. IV	12. IV	4,5	13. VII	16.VII
Goyja	26 III	7. IV	14. IV	4-2	15. VII	19.VII

As interpreted in Table 1, when considering the duration of the phenological phases of greengage varieties, we find that budding, flowering, and fruit ripening differ considerably over the days according to the biological properties of the varieties. From the varieties, the quickest budding **spring** savory variety has begun. So, in the third month, 22. the spring savory began to bud, whereas 28. the autumn savory started in the same month. Other sorts- 25. Arash greengage 3rd month, 26. Goyja started to bud in 3rd month. In flowering, the earliest was 3. the spring savory variety in the 4th month, in the Arash greengage in the 4th month, and in the autumn savory varieties in the 4th month. In the 7. Goycha variety, it was the 4th month. This pattern also significantly influenced the mass flowering phase, fruit ripening, and harvest period. The strongest flowering and fruit setting occurred in the spring savory and Arash greengage (Istanbul plum) varieties.

Conclusion

As a result of this study, it was found that Greengage - apricot - Hairy greengage of the genus *Armeniaco-Prunus Ginovskis* - apricot - *A. Dasycarpa* (Ehrh.) *Jinovskis* is a species of greengage - greengage plum of the genus *Prunus L. P. Wallicata* Ledeb., Nakhchivan plum - *P. nachichevanica* Kudr., Goyja Plum - *P. spinosa* L. and Domestic Plum - *P. domestica* L. species, Spring savory, Goyja, Summer Savory, Autumn Savory, Rajabi, Red plum (greengage), Tabarza and Movuj greengage varieties are common.

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