

## Morphological characterization of characters some cultivars plum in Albania country

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### Abstract:

Plums in our country are spread very early, they are very old, they have been spread since ancient times. According to the literature, the Pelazges brought them to the Balkan peninsula 4000 years ago. Over the years, passionate people, farmers, farmers, later breeders, breeders, research, etc. have created new varieties of plums, some of them have the names of countries and regions, such as Vlonjate plums, Tropojane plums, Elbasani double plums. Shengjinse plums, Gjatore plums, etc. There are varieties of plums that came from Macedonia, such as Vardare plums. Each plum name has its synonym according to the area where it is located. The study was carried out in the southern part of the country, in a Mediterranean and transitional Mediterranean climate, in the central part of the country. The purpose of this study is to evaluation and characterization the general features of some plum varieties found in our country, mainly its biological characteristics. Features such as the phenological phases of the flowering, the phenological phases of the ripening fruit, and the colour flower, pomological traits, fruit weight, fruit diameter (width length), fruit shape, skin colour, etc. There is diversity in the colour of the pulp, from green to yellow to red. It is noted that in the Prunus Salicina group, the kernel is connected to the pulp of the fruit, while in the Prunus Domestica group, the kernel is free. Prunus domestica and Prunus domestica is present in Albania country with their varieties. Due to the values, it has in the organization, it is sought after in the market and is sold fresh, processed as jam, and in refrigerated and dry conditions, such as prunes. It is found throughout the year in the market in different forms. This way is traditional for our country.

**Keywords:** flower, phenological, sots, traits, kernel

### Introduction:

Plums are part of the Rosaceae family, under the Prunoid family, the genus Prunus. There are 32 species of studies, but the documented ones are 12. Prunus domestica L (gjambulla), Prunus spinosa (wild plum or kulumbria), Prunus cerasifera Prunus Domestica, Prunus Spinosa, Prunus Cerasifera, Prunus Kokomila. (small fruit shape or wild plum), Prunus salicina (Chinese plum), Prunus usuriensis, American Prunus, Prunus nigra (Canadian Plum, Prunus institia (barbed plum). The European plum is a hexaploidy ( $2n=6x=48$ ) fruit crop. In our country found according, Prunus Domestica, Prunus Spinosa, Prunus Cerasifera, Prunus Kokomila. From the previous studies the most widespread plum is p. domestica, which derives from hybridization of mirabolanes with plum cerasifera, while from the hybridization of prunus spinosa with Prunus cerasifera we have small fruit plum that is wild. The house plum grows in tree shape up to 12 m high. The strongest growing plums are found in the southern area of the country, as conditions are more favourable. The requirements for climate conditions are different depending on the type and the plum group. European and Asian plums have high resistance to cold, with temperatures as low as -30 C, there are species that resist up to -40-45 C. Usurian plums endure up to -50 C. While quino-Japanese plums bloom very quickly so it requires temperate climates. In (1963), Kuperman introduced the plum to the group of short-day planters.

### Materials and methods:

Study of phenological phases such as flowering, fruiting, fruit growth dynamics, shoot growth dynamics, fruit set dynamics, ripening time, leaf fall time.

Flowering period, start date, medium, late. The beginning of full flowering, when 25% of the flowers have bloomed, the end of flowering when 70-80% of the flowers have dropped their petals, the end of flowering when all the petals have fallen. Flowering/ Flowering time, colour, number of flowers in the flower.

Diameter of the cup, length width of the cup, length width of the petals, length of the pistil, its thickness, thickness of the stamens, length width, colour of the pistil, colour of the stamens, crown, cup.

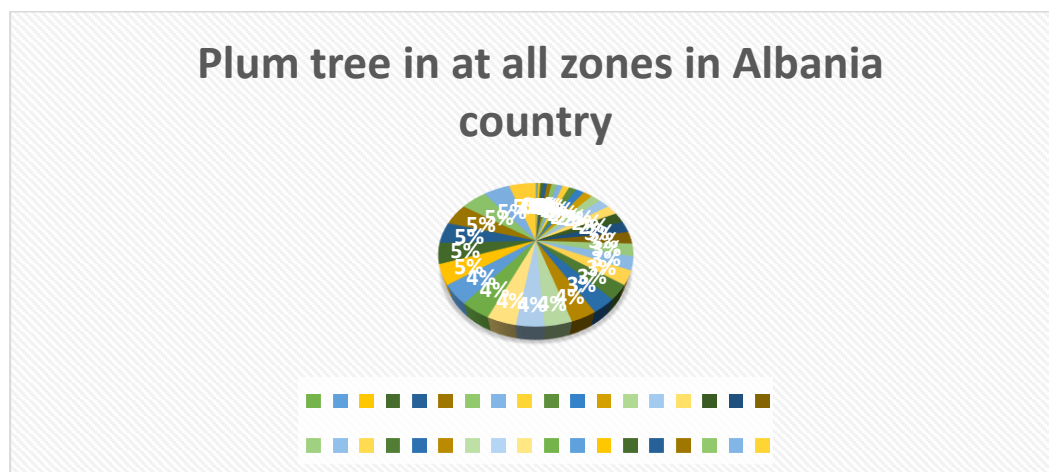
Fruit/ripening date, size, shape, width, length, shape of the fruit, shell of the fruit, colour of the fruit.

### Results and discussion:

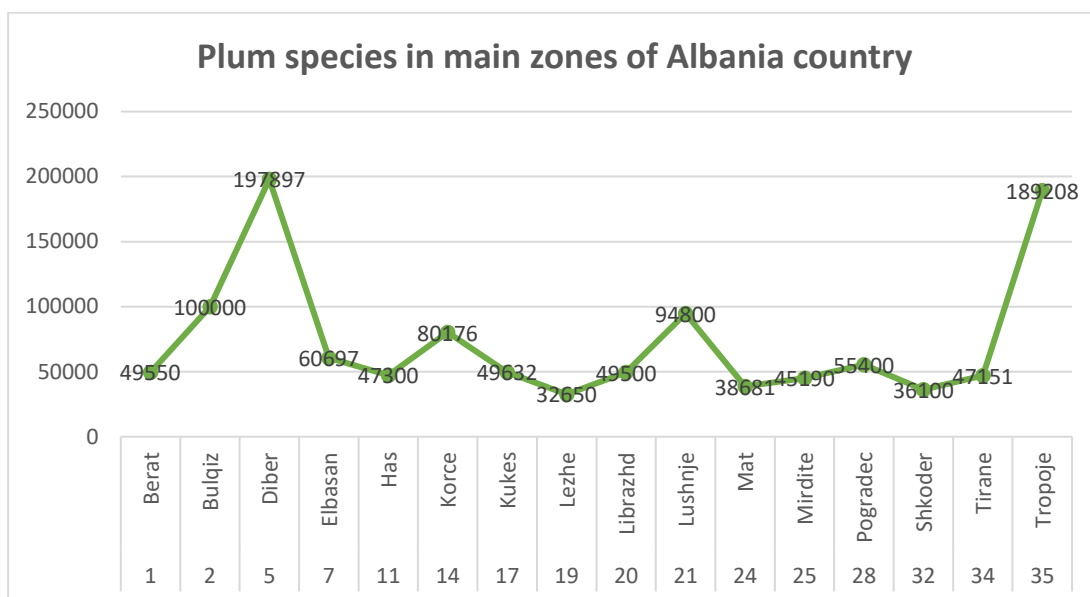
Plum is a fruit specie which extended at all zones of our country, in some zones more and some zones are few. From study we can see in those zones: Diber, Tropoje, Elbasan, Korce, Kruje, Kukes, Lushmje, Mat, Pogradec.

In graph no 1 and no 2 you can look zones of plum in our country. Which zones have a lot of plums tree and which zones have a few plum trees, but have.

Graph no 1



Graph no 2

**Flower study:**

The flower is the main organ from which the fruit and seed are formed, which realizes the sexual reproduction of plants. The flower consists of the tail, the cup, the petals, the petals, green in colour, but it can also be white or pink. The calyx and corolla make up the flower, inside which is the pistil. The pistil is made up of the carpel, pistil and ovary. Flakes consist of filaments, pollen sacs inside which there is pollen, which passes to the pistil whorl by insects or the wind. A large amount of pollen grains fall into the pistil, but only one pollen grain can achieve pollination. There are two ovals in the nucleus ovary, but one of them usually degenerates. From time to time, anomalies occur in different elements of the flower, we have the clustering of flowers that is distinguished by the large number of petals, anomaly in the formation of flower buds. These abnormalities involve the calyx, corolla, pistil and tassels. A. Moretini (Itali) in his studies on flower biology has found that the fertile varieties are Claudia, Santa Caterina, etc. According to the studies of P Morinov (Bulgaria) the varieties have turned out to be self-fertile Burbank, Claudia Verde, Florentia, Santa Rosa, etc.

**Fruit** - The fruit is a drupe, from the skin which is the exocarp, after that comes the pulp of the fruit, which is called the mesocarp and the fruit itself is called the endocarp. Plum fruits are different, but the most common are round and elongated. They have diversity in color from green to yellow, red, black. The colour of the pulp is different, in greens it is green to yellow, in Regina, Claudia it is green, in Santa Rosa it is pink, in Mirabolani it is yellow when the fruit is yellow and the pulp is yellow and when the fruit is red pulp is red in colour. The Tropojane plum is black and the pulp is yellow.

**Stone** – is inside, endocarp of plum fruit, is different in different sorts. This stone can be link with pulp of fruit or free from pulp of fruit. Tropojan variety, Italia, Klaudia green are varieties separate from pulp, other varieties are compressed of pulp fruit such is Burbank, Santa Rosa, Formosa.

**Table no 1: Plum of Japanese – Prunus Salicina**

No	Varieties	Blossoms	Shape Fruit	Color Fruit	Color pulp	Stone	Ripe of fruit
1	Burbank	Early, spring	Eliptic	Red	yellow	Compresed of pulp	August
2	Metley	Early, spring	Rounded	Violet	Red	Compresed of pulp	Mid July
3	Ozark Premier	Early, spring	Eliptic	Dark red	yellow	Compresed of pulp	August-September
4	Santa Rosa	Early, spring	Oblat	Red	Pink	Compresed of pulp	June- July
5	Formoza	Late, spring	Oblat	Reddish purple	Yellow to red	Compresed of pulp	Last July

**Table no 2: European Plum-Prunus Domestica**

No	Varieties	Blossoms	Shape Fruit	Color Fruit	Colour pulp	Stone	Ripe of fruit
1	Stanley	mid spring	elliptic	dark purple	dark purple	separate from pulp	August September
2	Victoria	mid spring	oblate	light orange	yellow	separate from pulp	August-September
3	Royal	mid spring	elliptic	dark blue	yellow	separate from pulp	Early September
4	Claudia de Verde	mid spring	rounded	Green skin	Yellow grin pulp	separate from pulp	August
5	Agen	mid spring	elliptic	red to violet	yellow	separate from pulp	Early August

Plum (*Prunus spinoza*) is an important member of the Rosaceae or the apple family. Although there are several fruits generically called plums, only types European plums (*Prunus domestica*) and Japanese plum (*Prunus salicium*) one in extensive cultivation worldwide are largery consumed as fresh fruit. *Prunus domestica* and *Prunus domestica* is present in Albania country with their varieties.

**Table no 3: Autochthon varieties**

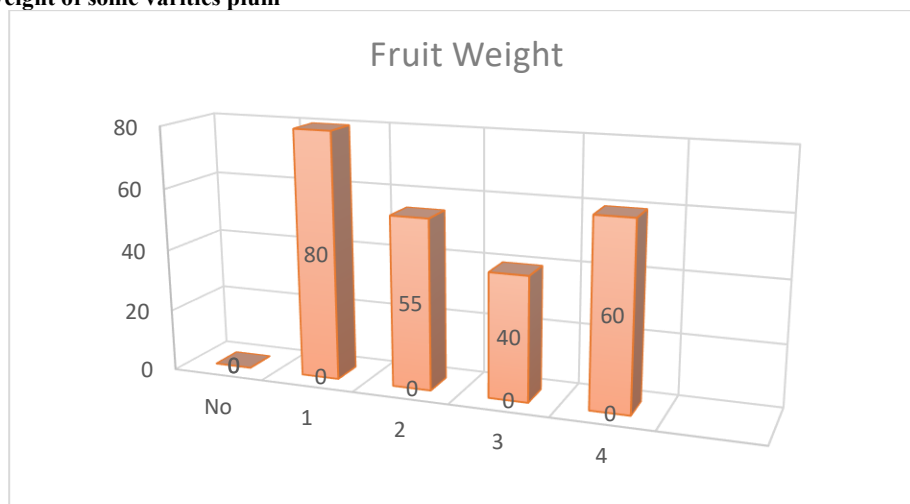
No	Varieties	Blossoms	Shape Fruit	Colour Fruit	Colour Pulp	Stone	Ripe of fruit
1	Shengjin	Mid spring	rounded	green	dark purple	Compresed of pulp	May
2	Vlonjate	Mid spring	Pink	yellow	light orange	separate from pulp	August
3	Tropojane	Last spring	eliptic	black	red	separate from pulp	September
4	Bardalike	Mid spring	elliptic	violet to black	green to yellow	separate from pulp	July

The above tables show that we have groups of the diversity of the ripening time, different *Prunus Salicina* and different *Prunus Domestica*. The shape of the fruit varies from elliptic to rounded to oblate, so we have diversity in the shape of the fruit. We have diversity in the colour of the fruit that moves from green to yellow to red, to pink and violet to black. There is diversity in the colour of the pulp, from green to yellow to red. It is noted that in the *Prunus Salicina* group, the kernel is connected to the pulp of the fruit, while in the *Prunus Domestica* group, the kernel is free.

**Table no 4: Indexes of Fruit some varieties plums**

No	Varieties	Weight/gr	Fruit Length/cm	Fruit Width/cm	Weight gr	Fruit stone LF/WF
1	Formosa	80	5.5	5.1	2.5	1.5x1.7
2	Stan ley	55	4.8	3.4	2.5	1.4x1.3
3	Shengjinas	40	4.0	4.2	1.5	1x0.4
4	Tropojane	60	4.8	3.5	5.0	3x1.5

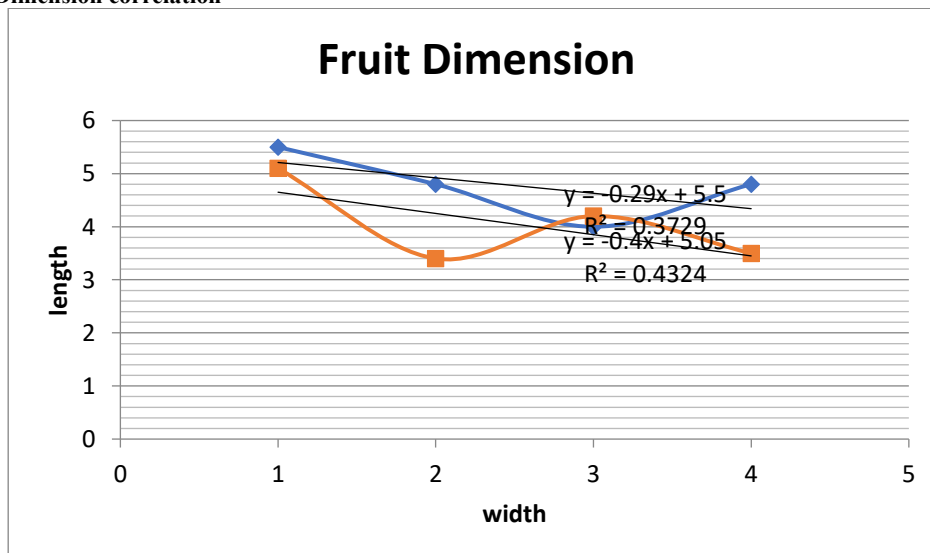
**Graph no 3: Fruit Weight of some varities plum**



From the study of the dynamics of the growth of the fruit to the harvest, there is immediate growth after the fruit is tied. When the ripening and harvesting time approaches, the growth dynamics of the fruit decreases. In the beginning, the growth of the fruit is fast, this is due to the temperature and humidity suitable for this variety. It is found that there is a direct correlation between the increase in the weight of the fruit. The weight of the fruit has increased in size and the change is only chemical inside the fruit.



**Graph no 4: Fruit Dimension correlation**



**Conclusion:**

Country Albania is a country with wide genetic diversity in fruit species, in the case under study in the plum species. The diversity lies in the extension in all areas of the country with different geographical and chemical characteristics, in biological and morphological characteristics. In the phenological phases such as flowering and ripening. I think that the studies should be deepened more in terms of molecular and genetic improvement. Due to the values, it has in the organization, it is sought after in the market and is sold fresh, processed as jam and compost, and in refrigerated and dry conditions, such as osafke. It is found throughout the year in the market in different forms. This way is traditional for our country.



Tropojan genotype . Shengjins genotype

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