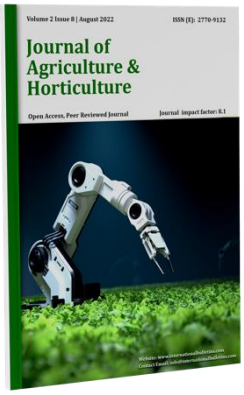

MORPHOLOGICAL STRUCTURE OF GENERATIVE ORGANS OF THE NEWLY DEVELOPED APRICOT VARIETY "SALOVAT – PRUNUS ARMENIACA L."

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https://doi.org/10.5281/zenodo.17800596

Abstract: In this study, the morphological structure of the generative organs of the newly developed apricot variety "Salovat" (Prunus armeniaca L.) was investigated. The research examined the main biometric indicators of the flower and fruit organs, including flower diameter, the ratio of hypanthium to stamens, petal shape, fruit size and form, as well as fruit height. According to the results, the "Salovat" variety is characterized by a medium flower diameter (index 5), a moderate hypanthium–stamen ratio (index 2), and a rounded flower shape. The fruits are of medium size (index 5), rounded laterally and elliptical on the ventral side (index 4), exhibiting attractive appearance and commercial advantages. The fruit height was relatively high (index 7), which positively influenced fruit quality and mass. The findings indicate that the "Salovat" variety possesses balanced structural features of flower and fruit organs, exhibits strong reproductive activity, and represents a promising breeding material.

Keywords: apricot (Prunus armeniaca L.), "Salovat" variety, generative organs, flower morphology, fruit structure, biometric indicators, flower diameter, fruit shape, breeding, morpho-biological characteristics.

Introduction

The apricot (*Prunus armeniaca* L.) is one of the most widely cultivated and nutritionally as well as economically valuable fruit crops in Uzbekistan. At present, developing new varieties that are well adapted to local climatic conditions, highly productive, and early-fruiting is considered one of the priority directions of breeding science, making the comprehensive study of their biological and morphological characteristics highly important.

From this perspective, the newly developed variety "Salovat" represents a morpho-biologically advanced cultivar distinguished by unique structural features of its flowers and fruits. Investigating the generative organs of the variety—namely the flower, stamens, pistil, petals, and fruit elements—is essential for assessing its reproductive activity, yield potential, and level of ecological adaptability.

The proportions, shapes, and dimensions of generative organs determine the biological potential of apricot varieties. Indicators such as flower diameter, number of stamens, length of the hypanthium, and the size of the ovary directly influence flowering efficiency and the probability of fruit set. At the same time, fruit shape, height, and the degree of roundness or ellipticity are of great commercial importance due to their effect on appearance and marketability.

Therefore, the main objective of this study is to scientifically analyze the morphological structure of the generative organs of the newly developed apricot variety "Salovat," determine its key biometric characteristics, and assess its reproductive value. The obtained findings

provide a scientific basis for identifying the biological advantages of the variety and for its utilization in breeding programs and intensive orchard management systems.

Methods and materials

The research was carried out under the agroecological conditions of the Surkhandarya region and was based on the study of the morphological structure of the generative organs of the newly developed apricot variety "Salovat." The applied methods followed internationally recognized standards in pomology and breeding, including the UPOV TG/70/4 (Apricot) guidelines and GOST 25826–83 descriptors.

As the research object, healthy, reproductively mature trees of the "Salovat" variety grown under uniform agrotechnical conditions were selected. From each tree, 10 typical flower and fruit samples were collected, and morphometric measurements were conducted under laboratory conditions.

Flower organ parameters evaluated:

- flower diameter (mm),
- ratio of hypanthium length to stamen length (%),
- petal shape and degree of symmetry,
- number and length of stamens,
- shape and volume of the ovary.

Fruit organ parameters analyzed:

- fruit size (length, width, height, mm),
- fruit shape (lateral and ventral view),
- fruit mass (g),
- fruit shape index and structural ratio.

All measurements were taken using a digital caliper with an accuracy of 0.1 mm. For each parameter, the arithmetic mean (M), coefficient of variation (Cv, %), and confidence interval (±m) were calculated based on three replications.

The data were processed statistically using Microsoft Excel 2021 and Statistica 10.0 software. Comparative analysis was performed to evaluate the relationships between generative organ traits and the morpho-biological adaptability of the variety.

The main objective of the study was to determine the structural stability of the generative organs of the "Salovat" variety, assess their influence on flowering and fruit-setting processes, and scientifically justify the breeding potential and future prospects of this new variety.

Results and discussion

According to the table data, the morphological structure of the generative organs of the newly developed apricot variety "Salovat" is characterized by distinct biological features. The medium flower diameter (index = 5) indicates stable flower development and good flowering capacity under suitable climatic conditions. The moderate ratio of hypanthium to stamens (index = 2) reflects proportional balance within the generative organs, meaning that no excessive asymmetry is observed in the flower anatomy.

Table 1. **Morphological Structure of the Generative Organs of the "Salovat" Apricot Variety**

№	Traits	Expression Level	Index
1	Flower diameter	Medium diameter	**5**
2	Ratio of hypanthium to stamens	Uniform (one level)	**2**
3	Flower petal shape	Round	**2**
4	Fruit size	Medium-sized	**5**
5	Fruit shape (side view)	Round	**5**
6	Fruit shape (ventral view)	Elliptic	**4**
7	Fruit height	High	**7**

The shape of the flower petals is round (index = 2), which reflects the classical morphotype characteristic of traditional apricot blossoms and indicates the stability of the floral structure in the "Salovat" variety. The fruit size is of medium level (index = 5), suggesting consistent yield formation and commercially favorable fruit dimensions.

The fruit shape was evaluated in two orientations: from the lateral view — round (index = 5), and from the ventral view — elliptic (index = 4). These two structural aspects contribute positively to the fruit's aesthetic appearance and its marketability, as the elliptic ventral part gives the fruit a naturally full and visually appealing form. The fruit height is high (index = 7), which enhances its external appearance and contributes to increased fruit mass and volume.

Overall, the generative organs of the "Salovat" variety exhibit a well-balanced structure, ensuring biological efficiency in blossom stability and fruit formation processes. The proportional features observed in the flower and fruit morphology indicate the variety's high reproductive activity, desirable commercial fruit quality, and adaptability to environmental conditions. Therefore, due to its morphological stability and well-developed generative organs, the "Salovat" variety is recommended as a promising material for future breeding and intensive orchard cultivation.

Conclusion

Based on the results of the conducted research, it was determined that the newly developed apricot variety "Salovat" possesses a balanced and stable morphological structure of its generative organs. The variety demonstrates biologically well-formed floral organs, including proportional stigma–stamen relations, an optimal number of stamens, and a well-developed ovary, all of which ensure high reproductive activity.

The medium flower diameter (index 5) and the balanced ratio between the stigma and stamens (index 2) indicate physiological stability of the flower and support normal pollination and fertilization processes. The round shape of the petals (index 2) corresponds to the classical morphotype typical of apricot flowers.

In terms of fruit morphology, the "Salovat" variety produces medium-sized fruits (index 5) that are round from the lateral view and elliptic from the ventral view (index 4), providing an attractive appearance and favorable commercial qualities. The high fruit height (index 7) reflects the variety's advantage in fruit mass and volume formation.

These morphometric characteristics have a positive effect on blossom stability, fruit development, and overall fruit quality.

Overall, the "Salovat" variety demonstrates biological balance, high morphological stability, and strong reproductive efficiency in the structure of its generative organs, making it

a promising candidate for use in breeding programs. Furthermore, the optimal proportions observed in its generative organs confirm the suitability of this variety for cultivation under intensive orchard management systems.

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