

The plum cultivar “Pagane” – an achievement in the breeding of fruit crops in Bulgaria

Author(s): доц. д-р Мариета Нешева, Институт по овощарство Пловдив, Селскостопанска академия ; главен експерт Даниела Ангелова, Институт по овощарство – Пловдив, Селскостопанска академия; главен експерт Лейда Тодорова, Институт по овощарство – Пловдив, Селскостопанска академия

Date: 04.11.2024 *Issue:* 11/2024



Abstract

The plum cultivar „Pagane“ is an achievement in fruit crop breeding in Bulgaria and is the result of long-term scientific work at the Fruit Growing Institute – Plovdiv, part of the Agricultural Academy. Officially registered by the Executive Agency for Variety Testing, Field Inspection and Seed Control (IASAS) in 2019, this cultivar is distinguished by its large and attractive fruits with exceptional taste qualities. „Pagane“ is suitable for diversifying the range of cultivars grown in plum orchards in the country.

Description of the cultivar

In 2023, the European plum holds a leading position in fruit production in Bulgaria, with yields reaching 57,737 tons (Agrostatistics, 2024). This crop is highly adaptable and develops successfully in various regions (Butac, 2020). The cultivar „Stanley“ is the main plum cultivar grown both in Bulgaria and worldwide (Agrostatistics, 2019). It is preferred due to its good adaptability to different climatic conditions, high yields and produce suitable for fresh consumption and various types of processing, such as drying, canning and brandy production.

The Bulgarian cultivar „Pagane“ is a new and promising cultivar from the group of greengages, developed at the Fruit Growing Institute in Plovdiv, part of the Agricultural Academy. It was obtained through open pollination of the well-known „Altanova Greengage“, and the stones were irradiated with X-rays to obtain new traits. The breeding work was carried out by a team of specialists including Prof. Valentina Bozhkova, PhD, Assoc. Prof. Pencho Iliev, PhD, and Chief Expert Leyda Todorova.

The tree is vigorous, with a spreading, loose crown, and the main fruiting wood consists of May bouquets. Under the conditions of the Plovdiv region, the flowering of „Pagane“ is medium-early and, depending on the climatic conditions of the particular year, coincides with the flowering of the standard cultivar „Stanley“ or begins 1–2 days earlier. The cultivar exhibits partial self-fertility, but to ensure reliable high yields it is necessary to grow it with a suitable pollinator, such as the cultivars “Stanley” and “Čačanska Lepotica”.



The fruits of „Pagane“ are impressive not only for their attractive appearance, but also for their excellent taste qualities. Their shape is obovate, with characteristically asymmetrical halves and a deep suture. According to the international standards defined in the descriptors for the study of genetic resources, the fruits are categorized as very large. Depending on the crop load of the trees, fruit weight varies from about 60 to 80 g. In 2024 their average weight was 70 g. The skin of the fruits is light violet, covered with a dense waxy coating. The

flesh is yellow-green to golden, which, in combination with the high content of sugars and soluble solids (20 °Brix), creates a balanced and sweet taste, highly preferred by consumers. The stones are small and account for only 3.11% of the fruit weight. Moreover, they separate easily, which is an important characteristic both for fruits intended for fresh consumption and for processing. The fruits are particularly suitable for fresh consumption, but can also be used for the preparation of compotes, jams and alcoholic beverages, ensuring a high-quality product. Fruiting of the cultivar is regular and abundant. In 2024 an average yield of 60 kg per tree was recorded, obtained from 11-year-old trees trained as free-growing crowns. One of the most important agronomic indicators of „Pagane“ is its tolerance to the viral disease „sharka“ (plum pox). The symptoms observed on the leaves of „Pagane“ are less pronounced compared to those of the standard cultivar „Stanley“. No symptoms occur on the fruits that would lead to deterioration of their quality and yield loss.

„Pagane“ was awarded 1st place in the Innovation Contest, section „Varietal seeds and planting material“ at the International Agricultural Exhibition „AGRA 2022“. Planting material with guaranteed varietal authenticity can be purchased from the [Fruit Growing Institute – Plovdiv](#).

References:

1. Agrostistics, Fruit production in Bulgaria – 2023 harvest, (2024), Ministry of Agriculture and Food;
2. Agrostistics, Structure of fruit species in Bulgaria, (2019), Ministry of Agriculture and Food;
3. Butac, M. (2020). Plum breeding (p. 1). IntechOpen: London, UK.