

CULTIVATION AND YIELD PERFORMANCE OF NEW RASPBERRY CULTIVARS

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Abstract

This article presents the findings of a study on the introduction and cultivation of new raspberry cultivars under the meadow-bog soil conditions of Andijan Region. Field observations were conducted during 2025–2026 and followed cultivar establishment and phenological development, including emergence, vegetative growth, flowering and the onset of fruit ripening. The first flowers were observed on 5 May 2026. The earliest fruit ripening began in Lyachka on 2 June, while Maravilla and Mapema began ripening on 25 June. Vajolet began to ripen on 28 September, as reported in the study. Observations also indicated differences in adaptation to high summer temperatures: cultivars developed in Italy, the United States and the Netherlands performed more favourably than the Russian cultivars Augustina and Vladimir under the conditions observed. On this basis, Maravilla, Margarita, Vajolet and Mapema are recommended for further cultivation in Andijan Region. Since the evidence comes from one experimental site and one observation season, the conclusions should be interpreted within that scope.

Keywords: raspberry, cultivar, yield, phenology, nitrogen, phosphorus, potassium, growing season, growth and development, fruits, meadow-bog soil.

Introduction

Raspberries occupy an important place among berry crops because of their pleasant flavour and nutritional value. Their fruits contain vitamins, minerals, organic acids and antioxidant compounds, making them a valuable part of a varied diet. They are also used as fresh fruit and in a range of food products. For growers, however, the value of a crop depends not only on its general characteristics but also on whether the selected cultivars can establish, grow and bear fruit under local conditions.

Introducing new cultivars into a region requires observation of how they respond to the local soil and weather. Cultivars may differ in their establishment, vegetative growth, branching, flowering and the time at which their fruits ripen. Recording these stages helps describe their seasonal development and provides a basis for comparing their performance at the experimental site. Such information can be useful when selecting cultivars for local cultivation and planning crop management and harvesting.

This study examined the cultivation of selected raspberry cultivars in Andijan Region. Its purpose was to assess their establishment and development under the conditions of the experimental site and to identify differences in their phenological characteristics. The observations covered seedling emergence, vegetative growth, branching, flowering and the beginning of fruit ripening. The resulting comparisons provide an initial field-based assessment of the cultivars and their potential suitability for the region. The findings apply to the site and observation period described in this study.

The research was conducted during 2025–2026 on a small experimental plot at the Andijan Institute of Agriculture and Agrotechnologies. Academic staff and master's students of the Department of Crop Breeding, Seed Production and Medicinal Plant Cultivation took part in the study. The selected cultivars were obtained from different locations. In November 2025, Maravilla, Margarita, Vajolet and Lyachka were brought from Aksy District in the Kyrgyz Republic and planted at the institute's experimental farm. Augustina and Vladimir were obtained from Fergana District, Fergana Region.

During the observation period, the development of the raspberry plants was followed under the conditions of the experimental site. The researchers recorded emergence and subsequent growth, as well as branching, flowering

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and the timing of fruit ripening. These observations were used to describe the seasonal development of the cultivars and compare the timing of their main phenological stages. The source also provides information about cultivar origin, breeding organisations or breeders, and fruit weight. Details that were not given in the source have not been inferred.

Table 1. Information on the raspberry cultivars

No.	Cultivar	Place of origin	Breeding organisation or breeder	Fruit weight (g)
1	Vajolet (Vajolet)	Not stated	Sant'Orsola; breeder: Aldo Telch	6–8
2	Margarita	United States	Not stated	5
3	Maravilla	United States, California	Developed at Cassin Ranch	5
4	Mapema	Netherlands	Advanced Berry Breeding	6
5	Himbo Top	Switzerland	Promo-Fruit AG; breeder: Peter Hauenstein	6–8

Before planting, the experimental field received 10 t/ha of well-rotted farmyard manure, 150 kg/ha of phosphorus fertiliser and 50 kg/ha of potassium fertiliser, incorporated during primary tillage. The field was tilled on 18 October 2025. After ploughing, it was levelled on 2 November 2025 and prepared for planting. Raspberry cultivars were planted on 11 November 2025 using the 200 × 50–1 arrangement stated in the source, and drip-irrigation lines were installed. During March and April 2026, approximately 90% of the seedlings emerged. Nitrogen fertiliser was applied twice during the growing season, on 14 April and 20 June 2026.

Flowering began on 5 May 2026. The earliest fruit ripening was recorded in Lyachka, whose first fruits began to ripen on 2 June. The first fruits of Margarita, Vladimir and Augustina were reported to ripen on 10 June. Maravilla and Mapema began ripening on 25 June. Vajolet was reported to begin ripening on 28 September. These dates show variation in maturation timing among the cultivars observed at the site. Based on the reported dates, Lyachka, Margarita, Vladimir and Augustina were classified as early-ripening; Maravilla and Mapema as mid-season; and Vajolet as late-ripening.



Phenological observations were made throughout the year at the experimental plot and covered emergence, growth and development, branching and flowering. The researchers reported that mortality among cultivars developed in Russia increased when summer air temperatures exceeded 30 °C. By comparison, cultivars developed in Italy, the United States and the Netherlands were observed to tolerate heat and disease more successfully. Their growth and development were also described as more favourable than those of the Russian cultivars Augustina and Vladimir. These statements reflect observations at the study site; the source does not provide numerical survival, disease-incidence or yield measurements for a quantitative comparison.

Taken together, the field observations suggest that cultivar choice may influence establishment and seasonal development under the conditions of Andijan Region. The cultivars developed in Europe and the United States were described as productive, comparatively resistant to disease and capable of adapting rapidly to unfavourable weather. Accordingly, Maravilla, Margarita, Vajolet and Mapema are recommended for cultivation in the region. As the study reports observations from one experimental plot and does not provide comparative yield values, this recommendation is preliminary and could be strengthened through replicated trials across additional sites and seasons.

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