

# The Peach – a Fruit Species with Many Advantages

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The peach belongs to the family Rosaceae, genus *Persica*. Six peach species are known – 4 wild-growing in China, Mongolia and Tibet, and 2 cultivated – the common peach *P. vulgaris* Mill and *P. ferganensis* Riab et Coast. The cultivated varieties originate mainly from *P. vulgaris*.

The peach originates from China, where it has been known since 2000–2300 BC. It was first introduced into Persia (Iran), and later into Greece, from where it spread to Italy and other regions of Southern Europe. In the

Bulgarian lands it was brought from Ancient Greece, first along the Black Sea coast and Eastern Thrace, and subsequently to other regions of the country.

As an industrial crop, the peach is relatively new for Bulgaria and other countries. However, its exceptional qualities – attractive appearance of the fruit, their high biological value, refreshing and pleasant taste, the possibility for consumption in fresh state for more than 4 months; early entry into bearing, absence of alternate bearing, achievement of maximum yield in the 3rd–4th year after planting and others – secure its place as a highly desirable fruit species. In Bulgaria, in 1950 the area of peach orchards was only 1,860 decares; in 1956 – 15,630, and in 1966 – 180,498 decares. World peach production in 1979–1981 was 7,382 thousand tonnes; in 1994 – 10,350 thousand tonnes, and in Bulgaria, respectively 76.5 and 46 thousand tonnes.

In 1984 Bulgaria ranked 5th in Europe in peach production and 11th in the world. After this period, there was a reduction in the areas occupied by peach, most pronounced during the 1990s. In 1997 the area was 80,870 decares and 49,950 kg of fruit were harvested; in 2001 – respectively 66,670 decares and 13,132,000 kg; in 2008 – 60,400 decares and 14,908,000 kg, and in 2016 – 42,480 decares and 30,439,000 kg of fruit.

In Bulgaria about 30 cultivars of true peaches (peaches for fresh consumption), nectarines without pubescence on the fruit skin – about 12–15 cultivars, and about 20 canning cultivars with firm flesh and clingstone pits are grown. The peach is a fruit species with low tolerance to low temperatures and often suffers from winter frosts and late spring frosts. This necessitates a very precise choice of region and sites for establishing peach plantations. The life span of the trees is usually 10–12, rarely up to 15 years.

The peach is susceptible to infection by more than 30 disease-causing agents and is damaged by 60 or more species of pests – insects, mites, nematodes, etc. Some of them damage the roots, others – the above-ground vegetative parts, and a third group – the fruit buds and fruits. The overall damage caused by pests most often weakens growth, reduces yields, deteriorates fruit quality and leads to tree mortality.

Among the diseases, the most harmful are leaf curl, powdery mildew, scab, shot-hole disease, Verticillium wilt and some others.

The causal agent of **leaf curl** infects the leaves, shoots, flowers and fruits, but the damage to the leaves is the most severe. This damage causes weakening of the trees, irregular and reduced bearing, poor fruit quality and tree dieback. The disease occurs every year, regardless of whether there was an outbreak in the preceding year.

**Powdery mildew.** The pathogen infects and severely damages the leaves, fruits and shoots. The leaves usually fall off, the fruits remain small and of poor quality, and the shoots become stunted and often dry out.

**Scab.** The disease causes defoliation of the trees as early as the first half of the summer, and the infected fruits are small and of reduced quality. Infected shoots and twigs grow weakly or die back.

**Shot-hole disease (fungal).** The disease occurs most frequently in humid regions and in rainy years. The pathogen infects the leaves, fruits and twigs. On the leaves, purple or brownish rounded or angular spots with a purple border are formed. Later the spots dry out and the tissue falls away – openings are formed, similar to those caused by shot. On the fruits, spots are formed which extend into the fruit flesh as shallow pits or cankers. Drops of gum exude on the surface of the pits and cankers. On the branches, wounds and cankers coloured purple or brown are also formed. The pathogen also infects the shoots, mixed buds, flowers and leaves.

**Verticillium wilt.** The disease causes the most severe damage to young and vigorously growing trees under irrigated conditions and planted on former vegetable areas and on land previously occupied by crops sensitive to the bacterium (technical crops and others). It occurs in acute and chronic forms. In the acute form, sudden leaf drop is observed, while in the chronic form the leaves first turn yellow and later fall. It most frequently appears at the beginning of summer. The pathogen develops in the xylem, spreading longitudinally through the infected part of the plant; the xylem acquires a brownish colour.

**Bacterial canker.** The pathogen creates problems in the production of fruit tree planting material in nurseries. It is manifested by the formation of tumours with a granular structure on the roots and in the area of the root collar.

Among the insects, the most harmful are aphids and scale insects, the black flatheaded borer, the oriental fruit moth, the peach twig borer (*Anarsia*) and others.

**Aphids** suck sap from the bark of the trunk, branches and twigs (large peach aphid); from swollen and swelling buds, from leaves, fruits and from the apical part of the shoots. The leaves curl in a manner specific to each species and die, the shoots stop growing and also die, the fruits are small and of poor quality, the plants are severely weakened and often die. Some species are vectors of viruses.

## Scale insects

The most harmful are the California red scale and the mulberry scale.

**California red scale** sucks sap from shoots, twigs, branches, trunk and fruits. At the feeding sites, the tissues necrotise and turn cherry red. Under heavy infestation, first the twigs and branches dry out, and later entire trees die. The fruits are blemished, small and of poor quality.

**Mulberry scale** develops in dense colonies on branches, twigs, trunk, shoots, leaves and fruits. The plants are weakened, individual branches dry out, and later entire trees die.

### **Black flatheaded borer**

This species is a problem for fruit nurseries and for young trees up to 4–5 years after planting. The larvae first tunnel the fine roots and later the taproot. In August the leaves begin to fall, and later entire young trees and old trees dry out.

### **Oriental fruit moth**

The larvae tunnel the apical part of the shoots, which stop growing, branch out and cause worminess of the fruits at ripening and later. The larvae of the successive generations cause damage from April to October – until the first half they predominantly tunnel the shoots, and afterwards they cause worminess of the fruits.

### **Peach twig borer**

It causes damage similar to the oriental fruit moth, but the length of the damaged part of the shoots is significantly shorter than that caused by the oriental fruit moth. The two species differ markedly in their larvae – that of the oriental fruit moth is pink with various colour shades, while that of the peach twig borer is chocolate-brown with light greenish rings between the abdominal segments.

To limit the harmful activity of pests on peach, monitoring is carried out from March to September to establish their phenology and population density, and agrotechnical measures and plant protection products are applied when necessary, while against disease-causing agents, preventive and curative products are used.

### **The peaches of Hrabrino**





For the second consecutive year, the village of Hrabrino will bring together people from near and far to enjoy the most delicious and fragrant peaches grown in the region. On 28.07.2024 at 09:00 a.m. the “Festival of the HRABRINO Peach” will be held.

This event will be accompanied by a very interesting programme, a competition for the largest peach, a lively musical programme and a charity culinary bazaar.