

# Red leaf spots on plum – a dangerous disease in our country

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The plum tree, like all fruit species, is a host of a number of viruses, bacteria and fungi which cause significant damage by severely reducing fruiting and deteriorating the quality of the fruit production. Among the fungal diseases, early brown rot and red leaf spots cause considerable damage.

In our country the disease is widespread in all regions where plum is grown and causes damage every year to the susceptible cultivars.

At first, pale green spots appear on the leaves, later turning pale yellow, with a rounded shape and a diameter of 0.5 to 2.5 cm. Subsequently, the spots acquire an orange-red colour. The tissues of the spots are considerably

thicker than those of the healthy part. The spots are slightly sunken on the upper surface of the leaf blade. In highly susceptible cultivars, three quarters of the leaf surface may be covered with spots. Severely spotted leaves curl into a tubular shape and fall prematurely. Fruits from severely affected trees are small and tasteless, and trees that defoliate early may freeze during a cold winter.

The causal agent of the disease is the fungus *Polystigma rubrum* /Pers./ De Candolle, of the family *Phyllachoraceae*, genus *Polystigma*. The fungus overwinters in the infected leaves, where in spring perithecia with asci and ascospores are formed. The ascospores usually mature around the flowering period of the main plum cultivars. Spores are released over a period of about two months. They are discharged from the fruiting bodies when the infected leaves are moistened and, upon reaching young leaves, cause infection. The symptoms of the disease appear after about 30–40 days. Favourable conditions for the development of the disease are created at temperatures from 10 to 26 °C and in the presence of moisture, which is necessary not only for the release of the ascospores, but also for their germination when they land on the leaves.

## Control

### *Sanitary measures*

Ploughing in the fallen leaves to destroy and reduce the overwintering inoculum.

Spraying the fallen leaves with borax – 1%, which prevents the formation of asci and ascospores.

### **Chemical control**

To protect the leaves from infection, 2 or 3 sprayings are carried out, depending on rainfall during and after flowering, as well as on the level of overwintering infection and the susceptibility of the cultivated cultivars. The first spraying is carried out at the end of flowering or immediately after it. The second spraying is usually carried out after an interval of 10–14 days. A third spraying is applied only in years with frequent showers after flowering. Spraying is done with systemic and contact fungicides.

### ***Planting cultivars that are relatively more resistant to the disease***

Of the plum cultivars grown in our country, the highly susceptible to the disease are Kyustendil Blue Plum, Anna Späth, Queen Victoria, Gabrovka; among the Reine Claudes, the most susceptible is the Large Green Reine Claude. *Less susceptible are* Sofia 2, Ashatan, Giley and Stanley.

It is important for growers to know that the first spraying against red leaf spots can be combined with the spraying against the larvae of the plum sawfly.