

# Април – blossom-time spraying is an important element of the plant protection chain in fruit crops

*Author(s):* проф. д.с.н Иванка Лечева; проф. Мария Боровинова

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The average monthly temperature in April for most fruit-growing regions of the country is between 10 and 14°C, and the monthly precipitation total is from 60 to 70 l/sq.m. According to the long-term forecast, in April 2019, at the beginning of the month, unusually for the season, the limiting factor for the development of autumn-sown crops and sown spring crops in most of the field areas will be the moisture deficit in the upper soil layers. During the second and third ten-day periods, the agrometeorological conditions will be highly dynamic. The development of agricultural crops will proceed at a moderate pace, at temperatures close to the climatic norms.

The expected precipitation, around and below the norm, will improve soil moisture reserves mainly in the 50 cm layer.

In April, the fruit species in the different regions of the country are in various phenophases: “mouse ear“, “white bud“, “flowering“.

For **apple**, at the “mouse ear” stage, the first pre-bloom spraying against scab and powdery mildew is carried out with one of the following fungicidal mixtures: Bordeaux mixture 1% + Bayfidan 250 EC – powdery mildew 0.015%, Champion WP – 0.3% + Bayfidan 250 EC – 0.015%, Funguran OH 50 WP – 0.3% + Bayfidan 250 EC – 0.015%. Scab-resistant cultivars should be sprayed only with Bayfidan 250 EC – 0.015%. The indicated fungicidal mixtures are preferable for pre-bloom sprayings in relation to preventing the development of resistance in the fungus causing scab, *Venturia inaequalis*. Also suitable for pre-bloom sprayings against scab are the fungicides Manfil 75 WP – 320 g/da, Captan 80 WG – 150-180 g/da, Polyram DF – 0.2%, Sankozeb 80 WP – 200 g/da, Thiram 80 WG – 0.3% (valid until 30.04.2019), Folpan 80 WDG – 0.15%. For simultaneous control of powdery mildew, these fungicides must also be combined with Bayfidan 250 EC - 0.015%. The cultivar Golden Delicious is susceptible to fruit russeting, and copper-based products increase it, which necessitates the use of other fungicides for this cultivar. Suitable is Captan 80 WG – 150-180 g/da, which can be successfully used for pre-bloom sprayings on Golden Delicious, as well as on other cultivars that are susceptible to fruit russeting.

The scab-resistant cultivars – Prima, COOP-10, Florina, Liberty, Pioneer, McFree, Pilot, Topaz, Novamak, Sava, Rubinola, Jonafree, Jonathan, etc., should be sprayed only against powdery mildew with Bayfidan 250 EC - 0.015% or Systhane Ecozome – 60-185 ml/da.

The second pre-bloom spraying of apple is carried out at the “pink bud” stage. The same fungicidal mixtures and fungicides are used as for the first spraying. In orchards where there is a high density of apple sawfly – 2-3 adults per 100 shaken shoots, one of the following insecticides is added to the fungicidal solution: Decis 2.5 EC – 0.03% or Meteor – 60-90 ml/100 l water. Growers who do not have the possibility to perform shaking can orient themselves approximately by the damage they observed on fruits last year or by the drop of fruitlets damaged by the sawfly. The two indicated insecticides are also suitable for control of the hairy beetle in young apple orchards in the initial fruiting period, where, at very high population density, the hairy beetle can completely destroy the crop.

In apple, during April, bloom spraying is also carried out, which is very important for protecting the blossoms from scab. In years with frequent showers and high air humidity, mass infections occur in cultivars sensitive to

scab, as a result of which blossoms drop, and this damage often remains unnoticed and growers attribute it to other causes. This spraying is also aimed at controlling powdery mildew and brown rot.

For bloom spraying, one of the following fungicides is used: Systhane 20 EW – 24 ml/water (24 - 42 ml/da), Stroby DF, Discus DF - 0.02%, Flint Max 75 WP – 0.02%, Chorus 50 WP – 0.03%, Shavit F 72 WDG – 0.2% or the combination Stroby DF, Discus DF – 0.02% + Delan 700 WDG – 0.035%.

For **pear**, only one pre-bloom spraying is carried out. It is aimed at scab, pear psyllids, pear lace bug and pear sawfly. For scab control, one of the following fungicides is used: Bordeaux mixture – 1%, Funguran OH 50 WP – 150-200 g/da, Champion WP – 0.3%, Captan 80 WG – 0.2%, Dithane M-45 – 200 g/da, Bordeaux Mix 20 WP – 375-500 g/da. At high density – 2-3% rosettes with colonies of the common pear psylla, one of the following insecticides is added to the fungicidal solution: Vaztak New 100 EC - 0.02%, Decis 2.5 EC – 0.03%, Masai WP – 25 g/da, Proteus O-T 0.05 – 0.06%, Sumi Alpha 5 EC/Sumicidin 5 EC/Oasis 5 EC - 0.03%, Cyneis 480 SC – 30-43.7 ml/da. Bloom spraying in pear is aimed at scab and brown rot, and the fungicides indicated for bloom spraying in apple are used.

During this period, **quince** is sprayed against fruitlet blight. The first spraying against this fungal disease is carried out at the “flower bud” stage, and the second – during flowering. For the first spraying, it is best to use Bordeaux mixture – 1% or Champion WP – 0.3%, and for bloom spraying – Chorus 50 WP – 0.03%, or Luna Experience – 20-75 ml/da.

At the flower bud stage, **plums** are sprayed against plum sawfly at a density of 3-5 sawflies per tree on average, established by shaking. Decis 2.5 EC - 0.05% or Sumi Alpha 5 EC – 0.02% are used. If this spraying has been missed or at very high sawfly density, control of this pest can also be carried out immediately after flowering, when 70% of the petals have turned brown but have not fallen, with 5% damaged fruitlets established.

In young **fruit-bearing stone fruit species**, at the “flower bud” stage, spraying is carried out against the hairy beetle, which, at very high density, can completely destroy the blossoms. For its control in fruit crops, there is no approved insecticide, but the following can be used: Decis 2.5 EC – 0.03%, Karate Zeon 5 CS – 0.02%, Dekka EC – 30 – 50 ml/da.

In all **stone fruit species**, bloom sprayings are usually carried out in April to control brown rot. Effective fungicides against this disease are: Luna Experience – 20-75 ml/da, Chorus 50 WG – 0.045%, Signum WG – 30 g/da, Delan 700 WDG – 0.05%, Thiram 80 WG – 0.3%.

Most of the apricot and sour cherry cultivars grown in our country are sensitive to brown rot, and in a wet spring and prolonged flowering, two bloom sprayings must be carried out in these crops. The first – at the beginning of flowering, and the second – 8-10 days after the first.

Bloom sprayings should be carried out in the morning, when there is no bee flight. The fungicides used are not toxic to bees, but they must be protected from the spray jet during treatment and from contamination with fungicides.

**Strawberry plantations** before flowering are sprayed with Bordeaux mixture – 1% or Champion WP – 0.3% in combination with Karate Zeon 5 CS - 0.02% or Calypso 480 SC – 0.02% for their protection against leaf spots (white and red) and weevils. The economic injury level for the strawberry-raspberry weevil is 11% damaged buds/sq.m or 15% damaged plants, and for the strawberry stem weevil it is 5 damaged flower stalks/leaf petioles/sq.m. During flowering, strawberry plants must be treated against grey mould with: Topsin M 70 WDG – 0.12%, Thiram 80 WG – 0.3% or Shavit F 72 WDG – 0.2%.

For **raspberry**, when the young shoots reach a height of 15-20 cm, spraying is carried out with Bordeaux mixture – 1% or Champion WP – 0.3% against bud blight (*Didymella*) and cane blight (*Coniothyrium*).