

In the orchard at the end of February and the beginning of March

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Measures for the protection of fruit crops from diseases and pests must begin as early as the second half of February. At that time some fruit species are in the phenophase of forced dormancy due to unfavorable temperatures. Periods of warming can lead to activation of the vital processes both of the fruit species and of their “enemies”.

During the warm days of February, ploughing should be carried out to incorporate the fallen leaves into the soil, if this has not been done in the autumn. Through this soil cultivation part of the pupae of the cherry fruit fly, the false caterpillars of the stone fruit sawfly, the sour cherry sawfly, the black plum fruit sawfly, the overwintering

forms of the cherry/sour cherry weevil, the apple blossom weevil and the apple blossom weevil are also destroyed.

Ploughing under the fallen leaves helps to reduce infection from apple and pear scab, cherry and sour cherry cytosporiosis, red leaf spot on plum and others. In this way the overwintering stock of leaf-mining moth species, which overwinter in the fallen leaves, is also reduced. When ploughing under the leaves, great care must be taken not to injure the root system, which leads to infections with bacterial canker or root rot pathogens. The depth of ploughing should be determined by the age of the orchard and the type of rootstock.

During this period pruning for tree training and fruiting of fruit species is also carried out and, at the same time, sanitary pruning must be performed to remove infected twigs affected by apple powdery mildew, pear scab, fruit tree black rot, cytosporiosis, lead/silver leaf of fruit trees, shot-hole disease of stone fruits. Infected twigs from fire blight on pome fruits and bacterial canker (*Pseudomonas syringae*) on stone fruits are also cut out if they have not been removed during the growing season, which is the most suitable time for these diseases. Damaged branches from longhorn beetles, wood-boring insects, goat moth, apple clearwing moth, apple twig borer are also removed. After sanitary pruning the wounds are coated with white latex paint to which Champion or Funguran is added.

After sanitary pruning all cut branches and twigs are removed from the orchard and burned so that they do not serve as a source of infection.



One of the agrotechnical measures for limiting the development of apple scab is moisture-charging irrigation at the end of winter, through which the discharge (ejection) of the overwintering scab spores can be accelerated and completed within a shorter period. This irrigation must be carried out before bud break.



The warm days of February and the first half of March are a suitable time for reducing the overwintering stock of: **eggs** of European red mite, brown mite, green apple aphid, red-gall aphid, apple-plantain aphid, pear aphid, Reaumur pear aphid, black cherry aphid, mealy peach-cane aphid, greenhouse peach aphid, leaf-curling aphid, large peach aphid, small and large plum aphid, small winter moth, large winter moth, rose tortrix, hawthorn tortrix, brown-spot tortrix; **larvae** of San José scale, yellow oyster scale, false San José scale, comma scale.

Against these pests in apple, pear, cherry, sour cherry, apricot, peach and plum, spraying is carried out with Ovitex 2000 ml/ha.

For simultaneous control of peach leaf curl, scab on pear and peach, shot-hole disease and brown rot of stone fruits, bacterial canker (blight) on cherry, sour cherry and apricot caused by *Pseudomonas syringae*, and pocket plum (blister) on plum, use a contact insecticide and acaricide that forms an air-impermeable oil film (Laincol, Baylproyl-A, Ovopron TOP EC) and one of the copper-containing fungicides – Bordeaux mixture 1%, Bordeaux mix 20 WP – 375–500 g/ha, Funguran OH 50 WP – 150–250 g/ha, Champion WP – 0.3%, Kocide 2000 WG – 150–680 g/ha.



In pear, the development of the pear psylla must be monitored, and more precisely its leaving the winter shelters and the dispersal of the overwintered adults onto the swelling buds, where they start sucking sap. At high pest density – 1 adult per 10 bag-shaped twigs – it is necessary to spray against the adults before egg laying. Very often treatment against this pest coincides with the winter spraying and then one of the insecticides is added to Ovitex: Decis 100 EC – 7.5–12.5 ml/ha, Deca EC – 75 ml/ha, Sumicidin 5 EC – 0.03%. In cherry and sour cherry during this period, the density of the sour cherry/cherry weevil is determined by beating and, when 3–5 adults per tree are found, spraying is carried out with Meteor (15.7 g/l) SC – 70–90 ml/100 l water.



Winter spraying must be carried out only when there is proven necessity, i.e. when the density of the overwintering forms of the pests exceeds the economic threshold of harmfulness.

For the individual pests these thresholds are: European red mite – 60–80 winter eggs per 10 cm twig; aphids – 15–20 winter eggs per 1 m of one- to three-year-old shoot; winter moths – 2–5 eggs per 2 m of one- to three-year-old shoot; codling moth – 0.5 to 1 shield per 1 m of three-year-old shoots; tortrix moths – 3–5 egg clusters per tree; San José scale – presence; other scale insects – 20–30 individuals per 1 m of shoot; pear psylla – 1 adult or 8–10 eggs on 10 bag-shaped twigs; black cherry aphid – 5–10 eggs per 10 cm twig. This requires growers to seek advice from plant protection specialists, which can help avoid unnecessary expenses and reduce the harmful impact of used pesticides on the environment.

The amount of spray solution required for winter spraying is determined depending on the age of the trees and the shape of the crown. Usually between 80 and 150 liters of spray solution per hectare are used.

An important condition for successful control of the overwintering forms of pests is good wetting of all parts of the crown.