Растителна защита
електронно списание за растителна защита
семена, торове и земеделие
ISSN 2815-522X

Plant protection care in the orchard in June

Author(s): Растителна защита
Date: 15.06.2022 *Issue:* 6/2022

In June, air temperature and humidity are suitable both for the growth of fruit crops and for the occurrence and development of economically important pests on them. During the month, the fruits of the fruit species increase rapidly in size, and some ripen.

Pome fruit species

Apple and pear scab

On young infected fruits, dark-oily, rounded spots are formed. On growing fruits, superficial green-brown, smooth, rounded spots are observed. Later, the spots become rough with a corky, cracked skin. As a result of the damage, the fruit becomes deformed.

ISSN 2815-522X

Strategy for pest control: Depending on the degree of infection and the rainfall during the month, treatments are continued until the end of the phenophase “fruit growth”.

Authorised plant protection products:

Apple: БЕЛИС - 80 g/ha; ДЕЛАН 700 ВДГ 0.035%, ДИФКОР 250 СК - 15 ml/ha; ЛУНА ЕКСПИРИАНС - 20-75 ml/ha; СИЛИТ 544 СК - 125 ml/ha; СКОР 250 ЕК - 0.02%; ТИОВИТ ДЖЕТ 80 ВГ - 600 g/ha; ФАБАН - 120 ml/ha; ФЛИНТ МАКС 75 ВГ - 0.02%; ФОЛПАН 80 ВДГ- 0.15%; ФОНТЕЛИС СК - 75 ml/ha; ХОРУС 50 ВГ - 0.03% (preventive) 0.05% (curative); ШАМПИОН ВП - 0.3%

Pear: ДИФКОР 250 СК- 15 ml/ha; КАПТАН 80 ВГ - 150-180 g/ha; ЛУНА ЕКСПИРИАНС - 20-75 ml/ha; ПОЛИРАМ ДФ - 200 g/ha; СКАБ 80 ВГ - 188 g/ha; ТИОВИТ ДЖЕТ 80 ВГ - 600 g/ha; ФАБАН - 120 ml/ha; ФУНГУРАН ОН 50 ВП - 150-250 g/ha; ШАМПИОН ВП - 300 g/ha.

Apple powdery mildew

Apple powdery mildew

ISSN 2815-522X

Leaves attacked by the disease are small, elongated, boat-shaped, curled, light green and completely covered with a powdery coating on the underside. Infected shoots have shortened internodes, are small and covered with grey-white mycelium. On the fruits, the spots are like a rusty net that penetrates the tissues to varying depths. If there are frequent showers during the month, the development of powdery mildew is suppressed due to the washing away of a large part of the spores with which it infects.

Strategy for pest control: During vegetation, spraying is carried out every 10-12 days until the development of the disease is limited, using one of the authorised PPPs.

Authorised plant protection products:

БЕЛИС - 80 g/ha; ЕМБРЕЛИА - 150 ml/ha; СКОР 250 ЕК - 0.02%; СЕРКАДИС - 15 ml/ha; ФЛИНТ МАКС 75 ВГ - 0.02%.

Fire blight

Fire blight

In June, the symptoms of the disease are most noticeable. The damaged plant parts wilt suddenly, become necrotic and remain on the trees, giving them a scorched appearance. The most characteristic symptom is the

ISSN 2815-522X

hook-shaped bending of the terminal shoots. Under moist conditions, droplets of bacterial exudate are exuded on the infected tissues.

Strategy for pest control

When the disease appears, in order to stop the spread of the infection, the diseased branches are carefully cut back to healthy tissue (30-40 cm below the site of infection) and burned.

Authorised plant protection products:

БОРДО МИКС 20 ВП - 375 - 500 g/ha; КОСАЙД 2000 ВГ - 155-680 g/ha; ФУНГУРАН ОН 50 ВП - 110-500 g/ha; ЛУНА КЕЪР - 300 g/ha; РЕГАЛИС ПЛЮС – in apples and pears for limiting fire blight infestation – twice at 125 g/ha + 125 g/ha;

Pests

Codling moth

Codling moth

ISSN 2815-522X

In June, caterpillars of the first generation cause damage. They feed on the seeds and the seed cavity, which they completely destroy. One caterpillar damages 2-3 fruits. The damaged young fruits drop, and moulds develop in their core. The damage often remains unnoticed due to the June drop of fruitlets. After feeding, the caterpillar leaves the damaged fruit. It descends on a silken thread or crawls along the trunk and forms a cocoon in the cracks of the bark, in which it pupates.

Strategy for pest control

Chemical treatment is carried out against hatching caterpillars before they bore into the fruits, at an **economic injury threshold (EIT)** for the first generation**:** *0.8-1% fresh entries in the fruits.*

Authorised plant protection products:

АФЪРМ ОПТИ - 200 g/ha; ДЕКА ЕК - 30 ml/ha; ДЕЛЕГАТ 250 ВГ - 30 g/ha; ДЕЦИС 100 ЕК - 7.5-12.5 ml/ha; ИМИДАН 50 ВГ - 150 g/ha (grace period for sale and distribution until 01.11.2022); КОРАГЕН 20 СК, ВОЛИАМ – 16 - 30 ml/ha; СУМИ АЛФА ЕК(СУМИЦИДИН) - 0.02%; ШЕРПА 100 ЕВ - 30 ml/ha.

Circular leaf miner moth

In June, the second generation of the pest develops in the middle canopy levels of the trees. The caterpillar causes damage by making spiral galleries, which appear as concentric circular spots formed by the black stripes of excreta left inside. Under heavy infestation, a single leaf may contain dozens of mines, sometimes merging into common spots. Damaged leaves have a reduced photosynthetic surface and fall prematurely.

Strategy for pest control: Chemical control is carried out when a density above the **EIT:** *in phenophase "fruit growth" – 2-3 eggs and mines per leaf.*

Authorised plant protection products:

АФЪРМ ОПТИ - 200 g/ha; ДЕЛЕГАТ 2О ВГ - 30 g/ha; ЛАМДЕКС ЕКСТРА - 60-100 g/ha; МЕТЕОР - 60-90 ml/100 l water; МОСПИЛАН 20 СГ - 25 g/ha; СУМИ АЛФА 5 ЕК/СУМИЦИДИН 5 ЕК - 0.02%.

ISSN 2815-522X

San Jose scale

San Jose scale

In June, mass birth of the larvae of the first generation of the pest is observed. Together with the adult females, they suck sap from all above-ground parts. During feeding, they inject enzymes into the puncture site and destroy the cell walls of plant tissues. The branches become wrinkled and dry, and the fruits and leaves are speckled with red, round spots with a dot in the centre (the scale of the insect).

Strategy for pest control

The scale, which protects the body of the harmful stages (larvae and adult females), is the main reason for the exceptional resistance of San Jose scale to insecticides. Control is aimed at the sensitive stages of the species – those without a scale (adult males and mobile first instar larvae). Treatment is carried out at an **EIT:** *10 pcs/100-cm branch or 2-3 infested fruits.*

Authorised plant protection products:

ДЕКА ЕК / ДЕША ЕК/ДЕНА ЕК - 50-75 ml/ha; МЕТЕОР - 90 ml/100 l water; МУЛИГАН - 30-50 ml/ha; ОВИТЕКС - 2000 ml/ha; БЕЛПРОЙЛ-А - 0.375-1.5 l/ha; ОВИПРОН ТОП ЕК – 1000/2000 ml/ha (May-August).

Aphids

Under mass infestation, the physiological processes of the plants are disturbed, and all attacked parts, including the fruits, remain small and without commercial appearance. Aphids cause not only direct damage to fruit species, but also transmit dangerous viral diseases.

Strategy for pest control: In the phenophase *“fruit growth”* treatment is carried out at **EIT:**

ISSN 2815-522X

Apples and pears: *colonies of Aphis spp - 10-15 pcs/100 shoots; colonies of Dysaphis spp. - 5 pcs/100 shoots.*

Peaches: *colonies - species of Myzus spp., Brachycaudus spp. - 5% infested shoots; colonies - species of Hyalopterus spp. - 15% infested shoots.*

Plums: *colonies - species of Hyalopterus spp., Phorodon - 15 pcs/100 branches or 15% infested shoots; colonies - species of Brachycaudus spp. - 5 pcs/100 branches or 5% infested shoots.*

Authorised plant protection products:

ДЕКА ЕК/ДЕША ЕК/ДЕНА ЕК - 30 - 50 ml/ha; ЛАМДЕКС ЕКСТРА- 40-60 g/ha; ШУРИДО (former МАСАЙ ВП) - 25 g/ha; Мовенто 100 СК – 0.075- 0.12%; ОВИТЕКС - 2000 ml/ha; ТЕПЕКИ - 14 g/ha.

European red mite

The summer populations of the species cause damage. Larvae, nymphs and adults suck sap from the underside of the leaves. At the puncture site, light spots appear, which gradually merge and the leaves acquire a silvery-grey colour. Under heavy infestation, the chlorophyll content in the leaves decreases and transpiration increases. These leaves do not photosynthesise, dry out and fall prematurely.

Strategy for pest control

Chemical control *in the "fruit growth" phase* is carried out at **EIT:**

Apple: *3-4 mobile forms per leaf.*

Pear*: 3-4 mobile forms per leaf - at the beginning of fruit growth; 5-7 mobile forms per leaf - after the beginning of fruit growth.*

Peach *- 4-5 mobile forms per leaf.*

Plum - *3-5 mobile forms per leaf.*

Authorised plant protection products:

АПАЧИ ЕВ - 100 ml/ha, БЕЛПРОЙЛ-А - 0.375-1.5 l/ha; БЕРМЕКТИН – 60 -96 l/ha; ЛАОТА – 60-96 ml/ha (apple and pear); ВЕРТИМЕК - 100 ml/ha, ШИРУДО (МАСАЙ ВП) - 25 g/ha, ВАЛМЕК - 50-120 ml/ha (peach), 37.5-120

ml/ha (pear), 60-96 ml/ha (apple), ВЕРТИМЕК 018 ЕК -100 ml/ha (apple). ОВИПРОН ТОП ЕК – 1000/2000 ml/ha (May-August)

Stone fruit species

White rust (Cylindrosporiosis) on cherry and sour cherry

Under favourable climatic conditions (moderately warm and humid weather), small purplish spots appear on the upper surface of infected leaves, which subsequently turn into necrotic specks. On the underside of the leaves, whitish piles of fungal spores are formed (hence the name - white rust). Unlike shot-hole disease, the tissue of the spots does not fall out. Under severe infestation, the leaves turn yellow, then brown, and fall prematurely. Fruits from trees with leaves damaged by white rust are small, poorly coloured and tasteless.

Strategy for pest control

To protect the leaf mass in orchards with recorded severe infestation by the disease, after harvest is completed, treatment is carried out with one of the fungicides authorised for use.

Authorised plant protection products: ДЕЛАН 700 ВДГ – 0.05%; СИГНУМ ВГ – 0.03%; СИЛИТ 544 СК – 125 ml/ha; СКОР 250 ЕК – 0.03%; ФЛИНТ МАКС 75 ВГ – 30 g/ha; АЗАКА - 100 ml/ha.

Peach powdery mildew

Peach powdery mildew

The systemic form of the disease develops as a result of infection located in the vegetative buds and manifests itself on the shoots, which are underdeveloped, deformed and completely covered with powdery coating. The local form of the pathogen appears on young growing fruits, which become covered with powdery spots that expand and cover a significant part of the surface. After some time, the powdery coating falls off, and beneath it the fruit flesh becomes corky, woody and cracked.

Strategy for pest control: Treat at the detection of the first spots, and then at intervals of 10-12 days until fruit enlargement.

Authorised plant protection products: ЛУНА ЕКСПИРИАНС- 50 ml/ha, СКОР 250 ЕК - 20-30 ml/ha, СИГНУМ - 30 g/ha, ТИОВИТ ДЖЕТ 80 ВГ - 600 g/ha, ТОПАЗ 100 ЕК – 50 ml/100 l spray solution.

Late brown rot

Damage from the disease is observed from fruit enlargement to consumption. Initially, small brown spots develop on infected fruits, which quickly expand and cover the entire fruit. Under high humidity and moderately high air temperature, sporulating tufts are formed on the damaged parts of the fruit in the form of concentrically arranged circles. Infected fruits most often remain in the canopy and become mummified.

Strategy for pest control

Treatment is carried out at the appearance of the first symptoms and favourable conditions for the development of the disease. The pre-harvest interval of the applied fungicide and the harvest time of the fruits must be observed.

Authorised plant protection products: КАПТАН 80 ВГ- 150-180 g/ha, ЛУНА ЕКСПИРИАНС - 63-75 ml/ha, Пролектус 50 ВГ- 120 g/ha, СИГНУМ ВГ- 60 - 75 g/ha, ХОРУС 50 ВГ - 0.045 %, МЕРПАН 80 ВГ - 225 g/ha, ПАСУЪРД 25 ВГ - 50 g/ha.

Pests

ISSN 2815-522X

Cherry fruit fly

Cherry fruit fly

During the month, the flight of the fly continues. Females lay their eggs in straw-coloured fruits that have started to ripen. Damaged fruits, attacked by larvae feeding on the fleshy part of the fruit, ripen prematurely, rot and sink at the site of damage. These fruits are unfit for consumption.

Strategy for pest control: Chemical control is aimed at adults before egg-laying. **EIT** for the first treatment - *8-12 days after the beginning of flight, at 10 female flies per trap (cumulative) at fruit straw-colouring*; second treatment for medium-early and late cultivars - *8-10 days after the first one at 10 flies/trap.*

Authorised plant protection products: ДЕЦИС 2,5 ЕК – 0.03%; ДЕЦИС ТРАП ЦЕРАЗИ - 5-10 traps/ha; КАРАТЕ ЗЕОН 5 КС - 15 ml/ha; НАТУРАЛИС - 100-200 ml/ha; НАТУРАЛИС - 100-200 ml/ha, ИМИДАН 50 ВГ - 150 ml/ha.

ISSN 2815-522X

Oriental fruit moth

Oriental fruit moth

In June, the moths of the second generation of the pest fly and lay eggs. The caterpillars cause damage by boring into the tips of young shoots and feeding on the green, non-lignified tissue. The damaged shoots wilt, dry at the tip together with the leaves, and their growth stops, with gummosis observed at the site of damage. This generation of caterpillars also damages the fleshy part of the fruits.

Strategy for pest control

Chemical control is carried out at the end of the moth flight and the beginning of caterpillar hatching at **EIT:** during vegetation – *10-15 moths/trap/week;* young orchards – *2-3% damaged shoots by the caterpillar;* fruit-bearing orchards - *5% damaged shoots or 2-4% fruits attacked by the caterpillar.*

Authorised plant protection products: АВАНТ 150 ЕК - 33.3 ml/ha, АФЪРМ ОПТИ - 200 g/ha, ВОЛИАМ ТАРГО - 75 ml/ha, ДЕКА ЕК - 50-70 ml/ha, ДЕЛЕГАТ 250 ВГ - 30 g/ha, ДИПЕЛ ДФ - 75-150 g/ha, ЛАМДЕКС ЕК7СТРА - 70 g/ha, КОРАГЕН 20 СК, ВОЛИАМ - 16-30 ml/ha, КОРАГЕН 20 СК - 16-30 ml/ha, СУМИ АЛФА 5 ЕК - 0.02 %, МАДЕКС ТВИН - 10 ml/ha.

Plum fruit moth

During this period, moths of the second generation of the pest are flying. Females lay eggs on the day following their emergence. The hatched caterpillar bores into the fruit immediately next to the site of the laid egg and excavates a gallery in the fleshy part of the fruit around the stone, which is filled with rounded, granular excreta and frass. Damaged fruits show premature ripening symptoms and fall.

Strategy for pest control

Chemical treatment is carried out against the caterpillars at the moment of hatching and boring, at an **EIT** for the second generation**:** *1.5-2 % fresh entries in the fruits;*

Authorised plant protection products*:*

АФЪРМ ОПТИ - 250 g/ha, ДЕКА ЕК 50-70 ml/ha, ДЕЛЕГАТ 250 ВГ - 300 g/ha, ДЕЦИС 100 ЕК -7.5-17.5 ml/ha, ИМИДАН 50 ВГ - 150 g/ha, КОРАГЕН 20 СК, ВОЛИАМ - 16-30 ml/ha, КОРАГЕН 20 СК - 16-30 ml/ha, СУМИ АЛФА 5 ЕК - 0.02 %.

Peach twig borer

During the month, caterpillars of the first generation of the pest cause damage. Attacked shoots wilt, their apical part dries together with the leaves, and their growth stops. Caterpillars of this generation also attack the fruits, destroying the entire interior of the young fruits, and in larger fruits they excavate a short gallery in the fleshy part. One caterpillar damages 1-2 shoots and/or one fruit.

Strategy for pest control

When the **EIT** is reached: *3% fruits damaged by the caterpillar,* chemical treatment should be carried out with one of the authorised plant protection products.

Authorised plant protection products: АФЪРМ ОПТИ - 200-225 g/ha;

ISSN 2815-522X

ВОЛИАМ ТАРГО 063 СК – 75 ml/ha; ДЕЦИС 100 ЕК - 8.75– 12.25 ml/ha; ДИПЕЛ ДФ - 75-150 g/ha, КОРАГЕН 20 СК - 16 – 30 ml/ha; АВАНТ 150 ЕК - 33.3 ml/ha; РАПАКС – 100 – 200 ml/ha; СИНЕИС 480 СК – 20 ml/ha.