

# Pest control system for pome fruit species in May

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*Development phenophase – from fruit of hazelnut size to fruit of walnut size*

*Pest – Apple and pear scab Venturia inaequalis; Venturia pirina*

## **Damage**

The pathogen attacks leaves, petioles, fruits and fruit stalks, where rounded, greasy spots are formed, which become covered with a greenish-grey coating and necrotize. Attacked leaves turn yellow and fall off, and

damage to the fruit stalks causes shedding of the young fruit set. On the fruit, dark oily spots are formed, which impede growth and cause deformations.

### **Control**

The expected precipitation at the beginning and during the third ten-day period of May, with average daily temperatures around the norm, as well as the rapidly growing leaf mass, will create conditions for faster infection and disease development. This necessitates, until the passing of the infection-critical phenophase “fruit of walnut size”, to carry out treatments with systemic fungicides, ensuring good coverage of the leaves and growing fruit sets with the product at intervals of 8 to 10 days. An important principle in treatments with plant protection products is not to use products based on the same active substance more than 3 times during one vegetation period and to alternate PPPs with different mechanisms of action, in order to avoid the development of resistance in the pathogens causing the two diseases.

**Pest – Apple powdery mildew** *Podosphaera leucotricha*

### **Damage**

During the vegetation period, in case of infection with the local form of the disease in apple, powdery spots of various shape and size appear on the underside of the leaves and on the petioles. They lead to deformation of the leaf blade and its tubular curling around the central vein. On attacked fruits, spots in the form of a rusty network appear.

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**Pest – Fire blight** *Erwinia amylovora*

### **Damage**

Damaged shoots bend in the form of a “shepherd’s crook” and are visible from a distance. In case of severe attack, cankers are formed on the trunk and scaffold branches, the bark cracks and wrinkles. On young fruit sets and fruits, expanding brown spots appear. In wet weather, yellowish droplets of bacterial exudate are excreted on them.

### **Control**

The bacterium survives in the attacked plant parts. It spreads mechanically, by wind, water droplets, insects, etc. It develops at temperatures above 18°C and under conditions of high air humidity. When the disease is detected, treatment with an approved copper-containing PPP should be carried out. In case of severe infection and in case of absolute necessity, cutting and burning of diseased branches is undertaken.

**Pest – Codling moth** *Laspeyresia pomonella* = *Cydia pomonella*

### **Damage**

Moths of the first generation are flying. The females lay their eggs singly on fruits of “hazelnut” size or “walnut” size, on the shoots and on the upper surface of the leaves. After hatching, the young larvae crawl to the fruits and bore into them. Boring usually takes place at the points where fruits touch each other and rarely at the stalk itself. After entering the fruit, the larva bores a tunnel in the fleshy part, penetrates into the seed chamber and feeds on the seeds.

### **Control**

Control of the codling moth is quite difficult. It has a hidden way of life during most of the larval development and an exceptionally long period of harmful activity.

Chemical treatment should be carried out against adults before egg-laying with hormonal insecticides (chitin synthesis inhibitors) at an economic injury level of 2–3 moths/trap/week, and against larvae at the time when hatching and initial boring of the first larvae begin, with contact insecticides at an economic injury level of 0.8–1% fresh borings in young fruits.

**Pest – Round-mining moth** *Cemiosstoma scitella* = *Leucoptera malifoliell*

### **Damage**

During the month, the development of the first generation of the pest takes place. The larvae cause damage by boring into the leaves immediately under the egg shell and feeding on the parenchyma tissue. They move in a circular manner from the inside outwards along a narrow, widening spiral. The excrements sharply outline the path of the larva.

## Control

Chemical control is carried out at the beginning of moth flight and egg-laying with hormonal insecticides.

Spraying at the “black head” stage of the eggs and the beginning of larval hatching is carried out with the other registered plant protection products at an ***economic injury level of: 2–3 eggs and mines per leaf;***

**Pest – Pear psylla** *Cacopsylla pyri*

## Damage

At the beginning of May, adults of the first generation appear. The larvae and nymphs cause the damage. The pest transmits the mycoplasma disease Pear decline, in which the conductive tissue becomes blocked and large parts of the branches dry out and die.

## Control

Chemical control is carried out according to the population dynamics of the psylla, using one of the registered plant protection products.

## ***Economic injury level:***

- in phenophases “fruit set formation” and “fruit growth” – 4–6% shoots with colonies.

**Pest – San Jose scale** *Quadraspidotus perniciosus*

## Damage

In May, the birth of the larvae of the first generation of the pest begins, which, together with the adult females, cause damage while feeding. They suck sap and destroy the cell walls of plant tissues. On fruits and leaves, red, round spots appear, with the scale of the insect visible in their centre.

**Control**

San Jose scale is extremely resistant to insecticides because of the scale that protects the body of the harmful stages – larvae and adult females. Control is directed against the young mobile larvae, before scale formation.

**Economic injury level:**

- 0.5 larvae per one-metre shoot;
- 2–3% attacked fruits.

*Pest – Aphids fam. Aphididae*

**Damage**

Adults and larvae cause damage by sucking sap from the leaves and the apical parts of the shoots. The attacked parts become deformed and their growth stops. Aphids excrete honeydew, on which sooty mould fungi develop.

**Control**

When harmful density is established, spraying with one of the authorised PPPs should be undertaken.

**Economic injury level:**

- Apples, pears, plums – 10–15 colonies per 100 shoots;
- Cherries, sour cherries – 10% attacked shoots.

*Pest – European red mite Panonychus ulmi*

**Damage**

Larvae, nymphs and adults of the summer populations of the species cause damage by sucking sap mainly from the underside of the leaves. As a result of the damage, chlorophyll decreases and the leaves acquire a mosaic appearance.

**Control**

Chemical control against the pest during the vegetation period is carried out at the following **economic injury level**:

- 3–4 mobile forms per leaf in phenophases “fruit set formation”, “fruit growth”.