UDC: 632.7:634.1 DOI: https://doi.org/10.53040/ppap2026.30

STATE OF DEVELOPMENT OF PESTS OF DONE CROPS UNDER CHANGING WEATHER CONDITIONS

SAVINA[1] Olena, https://orcid.org/0000-0003-1017-412X
HLIUDZYK-SHEMOTA Marharyta[2*], https://orcid.org/0000-0001-7937-6489
PUNKO B.[3], postgraduate
POPOVYCH Halyna[4], https://orcid.org/0000-0002-5300-3366
VAKERYCH Mykhailo[5], https://orcid.org/0000-0002-3268-7797

Uzhhorod National University, Department of fruit and vegetable cultivation and viticulture
**Corresponding e-mail*: *marharyta.hliudzyk@uzhnu.edu.ua*

All living organisms in the ecosystem are connected by complex food relationships. Each species has its own role and importance. But in the agro-ecosystems of garden crops, we single out insect pests that destroy the quality and quantity of the harvest. In the research materials, we will pay special attention to the screening of pests of stone garden crops and peach as a special crop when growing a mix of stone plants. The weather conditions of 2025-2026 years strongly affected not only the laying of the crop, but also the development cycle of many insects, which are classified as common pests.

Analyzing the state of garden pests in the winter of 2025, up to 10% of pests that harm stone crops died. At the same time, pests that multiply intensively and cause damage to fruit crops during the growing season, taking into account the damage and partial death of buds and flowers due to frost, were highlighted. In the period of swelling of the buds, with an average daily air temperature above 6^0C, garden weevils, in particular, the apple flower eater, the gray budworm, the beetle, and the weevil, began to emerge from wintering, and at 10 - 14 ^{0}C, a mass settlement of beetles was observed. At the beginning of the opening of buds at an air temperature of 12 ^{0}C, feeding on buds, and then on leaves, was observed by the caterpillars of the veined whitefly and the golden hornworm.During this period, the beginning of the revival of the caterpillars of the rosana leaf-roller, with which a large part of the trees and this pest causes significant damage to the weakened vegetative buds and leaves after severe freezing in the last two years, takes place.

Regeneration of the larvae of red and brown fruit mites occurs during the separation of the buds due to the transition of the average daily temperature after 7-8 ^{0}C. Females of the common fruit mite inhabit the buds and leaves of trees at an air temperature of 12-13 ^{0}C.

Fruit plantings of stone crops in the Transcarpathian region are significantly damaged by various phytophages, in particular leaf-gnawers, suckers, pests of generative organs, which with mass reproduction are capable of causing significant damage, leading to crop losses and a decrease in its quality. In the spring period, the gardens of the region are harmed by leaf-gnawing pests, primarily various types of leafhoppers, which are common in many plantations of the region, however, they cause the greatest damage in old gardens and in the private sector. In recent years, there has been a decrease in their number due to stressful situations in the winter-spring period. The most common are bud, mesh, and fruit leaf curlers. Caterpillars hibernate in web cocoons near the buds, in the crevices of the bark and in the branches of the branches. In the spring, when the air temperature reaches +8°C, the caterpillars come out of the cocoons, bite into the buds and damage them. After the buds open, the caterpillars feed on leaves and buds, pulling them into a dense bundle with a web. Caterpillars of the second generation damage the fruits at the end of June-July.In the spring of 2025, in the conditions of unstable temperature conditions, frosts in April, the number of leafhoppers and their harmfulness in the gardens of the region was not high, even in the gardens without providing protection to limit the harmfulness. A small number of trees were inhabited by caterpillars of various species in May, in contrast to 2026, where severe damage was noted against the background of severe damage to growth processes by returning frosts. This year, there is a complete absence of fruit setting in the surveyed orchards of the Beregovo district. A large supply of leaf curlers in the private sector, in old gardens, where in 2026, in the absence of protective treatment, they caused damage in the spring period, which affected the quality of planting annual growths. In commercial gardens, the wintering stock of leafhoppers is smaller, their prevalence is much lower there. Pests of generative organs can cause significant damage to fruit plantations in the region if protective measures are not taken: eastern and plum fruit eaters, apple flower borer, apple and plum sawflies, cherry fly. Without protective measures, these pests can significantly reduce the harvest and its quality, but in the examined orchards there is no stone fruit crop during these growing seasons due to severe freezing of the flowers of all stone crops. Apricot and peach trees suffered the most.

Among the most harmful for stone crops in the gardens of Transcarpathia, plum and oriental fruit-eaters have been singled out. Plum fruit eater (*Grapholitha funebrana*) is a dangerous pest of plums, damages plums, apricots, and peaches. Damaged fruits acquire a purple color, dry prematurely, or rot and fall. Caterpillars can move into another fruit. In its development, the plum fruit-eater is slightly ahead of the apple fruit-eater in terms of the onset of phenological phases. It develops in two generations. The years of butterflies of different generations often overlap, so it is difficult to distinguish a clear border between them. The most dangerous is the second generation of the plum fruit borer, whose caterpillars damage fruits of

medium and late varieties of plums. In 2025, the conditions for the development of both generations of the pest were favorable, a significant part of the fruits of early varieties and fruits of late varieties of plums were damaged by the revived caterpillars. In industrial plum plantations, thanks to protective spraying, the harmfulness of the fruit eater turned out to be much less. Autumn surveys of plum fruit-eating caterpillars were found in all plum plantations. The wintering stock of caterpillars is sufficient, therefore, in 2026, under favorable conditions during the growing season, a high level of damage by the plum fruit-eater is expected throughout the region. In the examined orchards of Beregovo district, there is no fruiting of drupes, so the development will be limited by the factor of lack of nutrition.

Cherry fly (*Rhagoletis cerasi*) is a dangerous pest of cherries. Pupae hibernate in false cocoons in the soil at a depth of 3-5 cm, flies fly out in spring 1.5-2 weeks after cherry blossoms. Females lay eggs one by one under the skin of the fruits at the beginning of their reddening, the larvae feed on the pulp of the fruits, which become soft, ripen earlier and rot. Damages the fruits of mid- and late ripening cherries and cherries. During the growing season of 2025, the summer of flies and egg-laying lasted in the second half of May - June. Weather conditions - air temperature drops, frosts in the foothills and mountain zones did not contribute to the activity of the pest, only at the end of the month the conditions for the flight and egg-laying of the cherry fly improved. The harmfulness of the fly was somewhat higher than the previous year, because in many plantations there was a small amount of fruit due to spring frosts. Autumn surveys revealed a fairly high level of overwintering, so if there are fruits in 2026 with a good overwintering, the cherry fly will actively develop, damaging mid- and late-ripening cherries, cherries.

Sucking pests (aphids, honeybees, mites, scale insects, false scale insects) are widespread in the gardens of the region, with high numbers they can lead to growth retardation, fruit tree development, and yield reduction. In addition, some of the sucking pests are carriers of viral diseases. Various types of fruit aphids are widespread in the region, under favorable growing conditions they can reproduce massively and suppress fruit trees, especially young ones. Plums are affected by the plum pollinated aphid (*Hyalopterus pruni*), cherries and cherries by the black cherry aphid (*Myzus cerasi*). Aphids, sucking sap from plants, often severely deform leaves and shoots, depress and weaken fruit trees, reduce their growth, yield, and frost resistance. In 2025, the weather conditions in April and May with unstable temperature conditions, sharp colds, and frosts did not contribute to a massive increase in the number of fruit aphids. Only at the end of May, an increase in the temperature regime improved the conditions for the development of fruit aphids. Later, during the summer period, the conditions for the development of fruit aphids were favorable. Under such conditions, centers of their increased number periodically appeared in the gardens, which

caused the need for protective measures. In August, fruit aphids damaged the young growth of leaves, especially in commercial orchards with drip irrigation. In the summer, aphids were common in all plantations. Plum aphid severely damaged young growths, which stopped the growth and development of young shoots. The black cherry aphid harmed cherries and cherries, inhabiting almost all varieties of examined trees, regardless of the maturity period. Autumn surveys revealed high numbers of eggs of various species of tree aphids. The winter supply of aphids is sufficient so that, with a good overwintering and favorable weather conditions for vegetation, they will populate fruit trees en masse this year, but severely weakened trees after frosts do not ensure normal growth even with a large pest load.

The gardens of the region are damaged by ticks of various species. The most common red fruit mite (*Panonychus ulmi Koch*.), less common - brown, common spider mite, fruit flat body, in some industrial plantations, microscopic rusty mites are harmful. The feeding of ticks at a high number of them leads to a slowdown in photosynthesis and an increase in evaporation, which causes suppression of plants and a decrease in growth. In the spring of 2025, mites were reborn and inhabited young leaves on fruit trees from April, however, the very low temperature during this period, as well as its significant fluctuations with frosts in May, did not contribute to the activity of mites, so their number was not very high. More favorable weather conditions for the development of ticks were observed in the region in the summer period. Outbreaks of increased number of them appeared sporadically, which required treatment with insecticides and acaricides. Red fruit mite, as the most common, was found in all the examined peach trees. The brown mite was less common. Autumn surveys revealed the population of wintering stages of ticks that go out to hibernate. In 2026, with hot, dry weather during the growing season, the number and harmfulness of ticks is expected to be high.

In the spring period, in many gardens of the region trees are observed to be inhabited by the hairy Olena (*Tropinota hirta*), the imago of which damages flowers. Beetles of the pest hibernate in the soil at a depth of 15–40 cm, with an average daily air temperature of 14°C and above, the beetles begin to emerge from the soil, which is traditionally observed in the second or third decade of April during the flowering of dandelions. The settlement of fruit crop plantations begins with the pink bud phase and continues throughout the flowering of the trees. In 2025, the summer of the pest began at the end of April, however, later in May, abnormally cold weather prevailed, frosts did not contribute to the activity of the pest, the number of which was lower than in previous years. In 2026, taking into account the significant spread of the pest in the region in recent years and sufficient wintering stock, the pest did not cause significant damage because the returning frosts destroyed all flowering and growth and leaf buds.

Keywords: crops, insects, pests, weather conditions.