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# SEA BUCKTHORN FLY,

## *manifestations of its turn and control in agrocenoses of buckthorn*

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***Goal.*** *To investigate the bioecological and morphological features of the sea buckthorn fly, to evaluate the manifestations of parasitism and methods of phytophage control in agrocenoses of the sea buckthorn.* ***Methods****. Census of sea buckthorn flies was carried out in agrocenoses of sea buckthorn of the The Institute of Horticulture of the National Academy of Agrarian Sciences of Ukraine, its research network. The studies used sea buckthorn varieties of domestic and foreign selection, which differ in ripeness groups: mid-early, mid-ripening, late-ripening.* ***Results.*** *In the conditions of the Polesia-Forest-Steppe and Forest-Steppe ecotopes, a pest of agrocenoses of the sea buckthorn buckthorn fly was revealed. Bioecological features and morphological characteristics of this pest have been investigated. It has been established that in the conditions of the Western and Northern Forest-Steppe of Ukraine, mid-early and mid-season varieties of sea buckthorn suffer from the sea buckthorn fly. A set of measures has been developed for the use of elements of agricultural technology, biological and chemical preparations for the control of sea buckthorn flies in sea buckthorn agrocenoses.* ***Conclusions****. It has been shown that the populations of the sea buckthorn fly are numerous on plants of early and mid-season varieties of sea buckthorn, in particular, on such as: Chuiskaya, Pagorbova, Morkvyana, Pavilionna. It was found that the larvae of flies penetrate the fruits, where they feed on the pulp, after which the sea buckthorn fruits become completely unsuitable for fresh consumption and for processing. Research carried out during 2017—2020 in the conditions of the Polesia-Forest-Steppe and Forest-Steppe ecotopes, it was possible to identify varieties of sea buckthorn (Orangevya, Adaptyvna), which are relatively resistant to sea buckthorn fly. It has been established that carrying out agrotechnical measures for loosening the soil in the near-stem part of plants and aisles, sowing perennial herbaceous vegetation in the aisles against the background of changing weather conditions significantly inhibits the development of the sea buckthorn fly and reduces damage to sea buckthorn fruits.*

**sea buckthornfly (*Rhagoletis batava* Hering); bioecological properties; morphological signs; assessment of the manifestation of harmfulness; control measures; agrocenosis of sea buckthorn**

***Formulation of the problem.*** New non-traditional berry crops are becoming more widespread in domestic horticultural farms of various forms of ownership, including *Hippophae rhamnoides* L., *Lonicera edulis* Turcz. Ex Freyn., *Viburnum opulus* L., *Aronia melanocarpa* (Michx.) Elliott and others. However, the yield of these fruit and berry crops is not always stable and often very low, which is largely determined by losses due to damage by pests. There is very little information in the world literature about the pests of the above crops. However, it is safe to say that the longer one or another crop is grown, the more it suffers from certain phytophages. In Ukraine until 2007 purposeful study of species and structural diversity of phytophagous insects of rare fruit and berry crops, primarily and others, was not conducted. Sea buckthorn is common in semi-natural ecosystems and agrobiocenoses of our country [1]. Like any producer, the plants of this crop are damaged by various pests. The most common are the following species: sea buckthorn fly (*R. batava* Hering); sea buckthorn (*Psylla hippophaeana* Cl.); sea buckthorn (*Archips hippophaeana* Heyd.); caustic worm (*Zeuzera pyrina* L.); sea buckthorn head mite (*Eriophyes hippophaeanus* Nal.); southern gray weevil (*Tanymecus dulaticollis* Gyll.); odd silkworm (*Ocneria dispar* L.) and others. It is worth noting that due to the increase in the area under the buckthorn gardens, the level of distribution and manifestation of harmfulness in the agrocenoses of this culture is increasing. Today, sea buckthorn gardens in many countries suffer from the negative effects of sea buckthorn flies [2, 3]. And due to the popularity of sea buckthorn in the last few years, a similar effect can be observed in Ukraine. By the way, in the western and northern regions of our country there are separate "foci" of this pest, which significantly affects the quantity and quality of crops and creates risks of spreading such parasitic effects in most of Ukraine [4]. Analysis of literature sources and data from recent studies. The area of sea buckthorn populations today is significant, which is of concern to farmers in many countries [5] (Fig. 1).

The sea buckthorn fly was first officially discovered in 1958 in the ecosystems of Terscheling Island (Netherlands) by zoologist Erich Goering [7]. In 1970, Soviet scientists described the Siberian sea buckthorn population as a new subspecies of *Rhagoletis batava obscuriosa* Kol., Whose research showed that the pest was widespread in Siberia, mostly in the Altai region of Russia.

Since 2001, the sea buckthorn fly in the Russian Federation has begun to cause significant economic damage due to damage to sea buckthorn fruits [9—11]. In the early 2000s, it was found that the Fauna Europaea database included only about a dozen species of fruit flies of the genus Rhagoletis: *Rhagoletis almatensis* Rohdendorf, 1961; *Rhagoletis alternata* Fallén, 1814; *Rhagoletis berberidis* Jermy, 1961; *Rhagoletis cerasi* Linnaeus, 1758; *Rhagoletis chumsanica* Rohdendorf, 1961; *Rhagoletis cingulata* Loew, 1862; *Rhagoletis completa* Cresson, 1929; *Rhagoletis flavicincta* Enderlein, 1934; *Rhagoletis flavigenualis* Hering, 1958; *Rhagoletis magniterebra* Rohdendorf, 1961; *Rhagoletis meigenii* Loew, 1844; *Rhagoletis samojlovitshae* Rohdendorf, 1961; *Rhagoletis turanica* Rohdendorf, 1961 and *Rhagoletis zernyi* Hendel, 1927, found and identified in Europe, Central Asia and among the most common species of this genus is *R. batava* Hering, 1958 [12]. In 2001, the pest spread to German ecosystems. And already in 2013 in this country the larvae of sea buckthorn flies caused economic damage to an area of over 600 hectares of sea buckthorn [2, 14]. In 2011—2012, there were reports of sea buckthorn flies in the Baltics, including Lithuania and Latvia [15—17]. In 2014, sea buckthorn fly was found in Belarus [18] and Poland, Estonia and Finland [19]. According to the National Plant Protection Organization (NPPO), the species *R. batava* was also found in the summer of 2017 in the Czech Republic — about 17 adults caught with yellow sticky traps set in agrocenoses of sea buckthorn with an area of 12 hectares, Przysovice, Liberec Region, Czech Republic) [20]. In 2019, exceeding the economic threshold of harmfulness (EPP) of this pest was observed in 9 countries of the Eurasian continent (Fig. 2), which indicates that in connection with the large-scale transfer of sea buckthorn to the industrial level of cultivation should take into account the fact that this the pest is and can destroy 90—100% of the crop.

It is known that the sea buckthorn fly belongs to the genus *Rhagoletis* Loew, 1862 (synonym *Microrrhagoletis* Rohdendorf, 1961), family *Tephritidae* Newman, 1835, series *Diptera* L., 1758. According to literature data [5, 16] the pest winters in the pupae stage at depth 10 cm cm in false cocoons with protruding anterior spiracles of light brown color and with 9—10 transverse segments [4]. Larvae white, without paws (Fig. 3).

Given that the culture of sea buckthorn forms an average yield on low-yielding lands, world practice has shown that sea buckthorn is promising for organic production. And, accordingly, the biological method of plant protection will have prospects [21, 22]. In this regard, foreign scientists are working to find ways to control pests by biological methods. It is reported that ISCA scientists have genetically engineered a genetically modified variety of ryegrass, which can be used to produce a special pheromone that can scare away agricultural pests, which is a prospect for future protection of plants without pesticides. Thus, pheromones and other semiochemicals are the basis for the creation of a new generation of drugs to control pests. Pest control, according to Joanne Conrow of the Cornell Science Alliance (according to SuperAgronom), will reduce the pesticide load on the biosphere while eliminating insecticide residues in food and pesticide-resistant insects. Other scientists have identified and identified the pheromone of the sea buckthorn fly, which can be used to control its numbers [23]. and other species of the genus of fruit flies (*Rhagoletis*). Thus, the isolation, identification and testing of pheromones can fill a gap in effective and safe means of pest control, as well as pest population monitoring and potentially contribute to environmentally sound agriculture.

Today, Baltic scientists also have other important developments on ways to control sea buckthorn flies in sea buckthorn agrocenoses. In particular, Lithuanian scientists have identified the yeast strain SB-16-15, which is formed from spontaneous fermentation of *Hippophae rhamnoides* L., identified *Pichia kudriavzevii*, which causes the formation of a specific odor that attracts flies, which is


*Fig. 1. Area of sea buckthorn fly in Eurasia [6]*

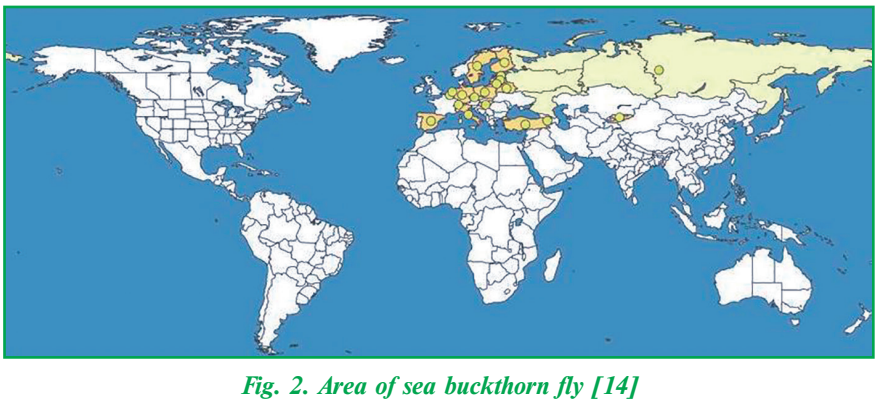
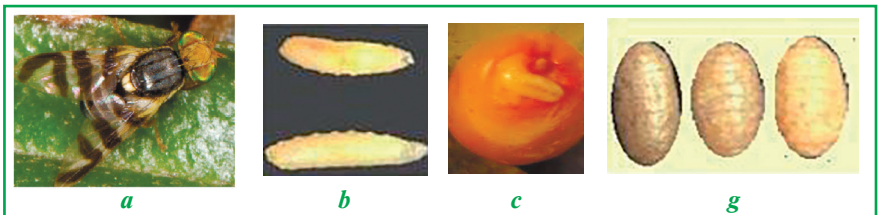


*Fig. 2. Area of sea buckthorn fly [14]*



*a* *b* *c* *g*

*Fig. 3. Sea buckthorn fly (R. batava Hering): a — adult; b — larva; c — larva in the fruit of sea buckthorn; g — puparia*

a prerequisite for the formation and use of special traps [26].

Therefore, the study of biological and ecological characteristics of phytophagous pests and the development of measures for their control in agrocenoses of buckthorn is an urgent task that will allow in the early stages to diagnose adverse biotic factors and implement effective measures to control them.

***Goal*** of the work was to investigate the bioecological and morphological features of sea buckthorn fly, to evaluate the manifestations of parasitism and methods of phytophage control in agrocenoses of buckthorn.

***Materials and methods.*** Surveys of sea buckthorn fly were carried out in agrocenoses of buckthorn buckthorn of the Institute of Horticulture of NAAS of Ukraine, its research network. The studies involved varieties of sea buckthorn buckthorn domestic and foreign selection, different groups of maturity: Chuyskaya, Oranzhevaya, Pavil'yonna, Morkvyana, Pahorbova and Adaptyvna. Biennial plants of all varieties were planted in 2017. Adult observations began in the second decade of June and ended in the second decade of August. The larvae were counted in laboratory conditions in two terms: the first — in the state of technical maturity of the fruit (when females lay eggs); the second — full maturity (larvae feed intensively before migrating into the soil) [27—30].

Reconnaissance studies conducted in 2011 and 2016 allowed the conditions of the Northern and Western Forest-Steppe to establish a convenient period of accounting — August-September, in particular before the fruit harvest. The percentage of fruit damage is calculated using magnifiers two or four times magnification or visually [4]. The number of flies in the dynamics was controlled using specially installed yellow glue traps (Fig. 4). To determine the degree of damage to the fruit of this pest examined 600 fruits collected from 6 plants (in this case, the plant — recurrence).

Damage to sea buckthorn buckthorn fly was assessed according to the time of registration (Table 1).

In parallel with the accounting of damage and the study of bioecological properties of sea buckthorn fly, studied its morphological characteristics, using conventional techniques [31, 32].

Evaluation of buckthorn varieties in susceptibility to sea buckthorn fly was carried out according to a new method L.D. Shaman [33], which is less labor-intensive and allows you to further assess the quality of the crop, the essence of which is to take into account the dynamics of the flight of flies using yellow glue traps. Based on the total number of adult insects and the corresponding yield losses, the authors of this method derived the general regression equation, which can be used with high accuracy ($p > 0.05$) to determine yield losses:

$$Y = 0.72 \times X - 0.151,$$

where $Y$ is the loss of yield, %; $X$ — number of adults, copies; 0.72 — regression coefficient; 0.151 — constant regression coefficient.

This method of evaluating sea buckthorn varieties for susceptibility to sea buckthorn flies allowed us to identify varieties with a short and long period of its harmfulness.

Damage of sea buckthorn fruits was recorded during their biological maturity according to the generally accepted method [34]. The number of registered plants of a certain variety of sea buckthorn was 5—7 bushes. The degree of damage to plants was assessed by the percentage of fruits damaged by sea buckthorn fly (in points): 0 points (0%) — resistant; 0.1—1.0 points (up to 1%) — relatively stable; 2.1—3.0 (11—30%) — moderately damaged; 3.1—4.0 (31—50%) — severely damaged; 4.1—5.0 (over 50%) — very badly damaged. Statistical data processing was performed using computer programs Statistica-5.5 and Excel-2003.

***Results.*** To systematize the stages of research on the bioecological properties of sea buckthorn fly in the Polissya-Forest-Steppe and Forest-Steppe ecotopes, an analysis of literature sources was conducted [4, 35], which outlined an action plan and clarified the significance of environmental hazards caused by this pest. For the first time in the Polissya-Forest-Steppe transition zone, sea buckthorn fly populations were detected in sea buckthorn fallow plantations in 2011. The appearance of this pest was caused by a steady increase in average daily air temperatures to +19°C in May and to +24°C and above during the second decade of June — the second decade of August. Only under such temperature conditions mass development of phytophage is possible, and the damage of fruits of early-ripening varieties by sea buckthorn fly before the harvest period (August 31, 2011) on some varieties was 64.7%. In 2014, the average number of damaged fruits in the middle-early varieties of Chuyskaya, Morkvyana and Pavil'yonna averaged 46.7, and in 2013 — did not exceed 31%, and in 2017 and 2018 — more than 75%. Therefore, in order to obtain objective data, research was continued to determine the number and dynamics of the flight of the sea buckthorn fly imago in the cenoses of varieties depending on the maturity group. In 2019, the first were detected on June 11 in the amount of 2—8 specimens/trap, and on August 20—30 their number was not observed (Fig. 5). But the mass flight of the sea buckthorn fly fell in 2019 to the first decade of July,

*1. Assessment of Rhagoletis batava Hering fruit damage of sea buckthorn plants*

| Accounting time | The name of the pest | The nature of the damage | Accounting indicators,% |
|---|---|---|---|
| During the period of filling and ripening of fruits | *Rhagoletis batava* Hering | The fruits are shrunken and crumble. In July — August in the middle of them are white fly larvae | The degree of damage to the fruit |

*Fig. 4. Adhesive trap-tape for pest accounting (reference point of the Institute of Horticulture NAAS, Western Forest-Steppe, 2020)*

and in 2020 — to the third decade of June (Fig. 5).

The long frost-free period during the winter of 2019—2020 and the favorable temperature regime of the vegetation period of 2020 had a positive effect on the overwintering of larvae of the pest. If in 2019 the maximum number of adults on mediumearly varieties was 25 specimens/trap, in 2020 — more than 100 specimens/trap (Fig. 6). Data from the evaluation of sea buckthorn plants in the collection nursery (Western Forest-Steppe) showed that pest damage of fruits of the Chuyskaya variety is much higher than that of the control medium-ripe varieties Pavil'yonna and Morkvyana and late ripening variety Adaptyvna. High susceptibility with the maximum peak of flight of the pest is a medium-early variety Pagorbova (Fig. 6).

Using the regression equation, we calculated the potential loss of yield for different maturity varieties (Table 2).

Studies have shown [4] that the morphological characteristics of sea buckthorn flies in the northern and western parts of the Forest-Steppe are within error and are, for example, body length of 3.2 and 3.5 mm, wings — 2.5 and 3 mm, respectively. And the head of the fly is yellow, or different shades — from light to darker shades, a black spot on the back of the head, the eyes of living flies are emerald green and slightly purple at the edges, and in the dead — the eyes become dark gray. Adult breasts are black, with a dense light gray plaque, and the back — with short black bristle hairs, legs — yellow, in particular the femur of the forelegs has a black longitudinal line, the thigh of the middle and hind legs — mostly black with a yellow tip. Females differ from males by the presence of a telescopic ovipositor (Fig. 7). The wings of the imago are mostly transparent with 4 clear transverse dark brown stripes, the two outer fronts of which are connected in a V-shape. Hummingbirds — straw-yellow (Fig. 7).

This pest in the pupa stage overwinters at a soil depth of up to 10 cm in false cocoons with protruding front respirators, light brown, with 9—10 transverse segments, closed type. It should be noted that the sea buckthorn fly from the cherry fly (*Rhagoletis cerasi* L., 1758) is easily distinguished by the absence of a longitudinal black spot on the front

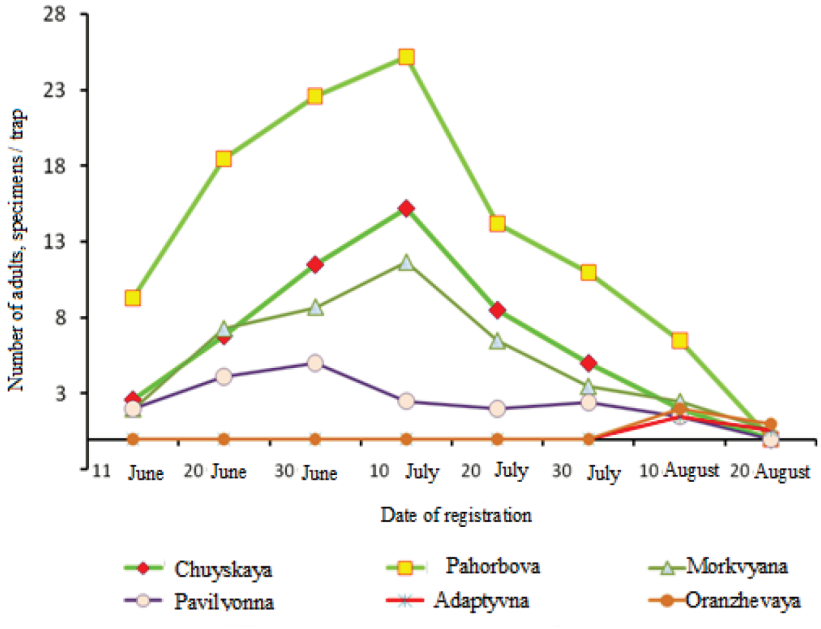



*Fig. 5. Flight dynamics of sea buckthorn fly depending on the variety of sea buckthorn Western Forest-Steppe (Lviv region, base of the Institute of Horticulture of NAAS, 2019)*

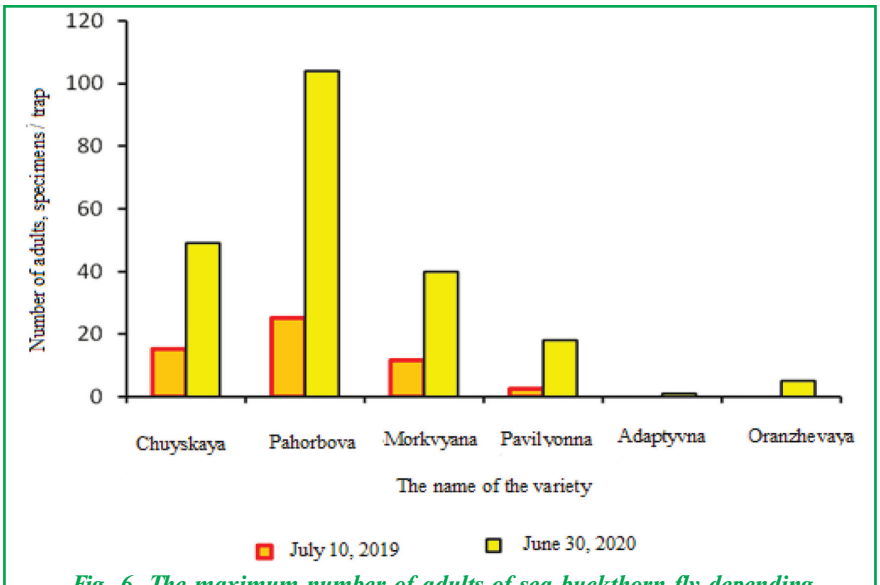



*Fig. 6. The maximum number of adults of sea buckthorn fly depending on the variety of sea buckthorn in 2019—2020, Western Forest-Steppe (Lviv region, base of the Institute of Horticulture of NAAS)*

*2. Maximum number of sea buckthorn flies trapped at the end of the third decade of June 2020, the base of the Institute of Horticulture of NAAS, Western Forest-Steppe*

| Variety | Origin of the variety | Maturity group of the variety | Total number imago / trap | Yield loss,% |
|---|---|---|---|---|
| Chuyskaya | M.A. Lisavenko Siberian Horticultural Research Institute | *mr | 49 | 35.1 |
| Oranzhevaya | | **lr | 5 | 3.4 |
| Pagorbova | Institute of Horticulture NAAS of Ukraine | ***me | 104 | 74.7 |
| Morkvyana | | mr | 40 | 28.6 |
| Pavil'yonna | | mr | 18 | 12.8 |
| Adaptyvna | | lr | 1 | 0.6 |

* mr — medium-ripe; ** lr — late-ripe; *** me — middle-early

edge of the wing between the second and third stripes [4, 36]. Using yellow adhesive tape-traps, we found that in the northern part of the Forest-Steppe the first flies start summer in mid-May, and the mass fly in the third decade of July and the first decade of August. The life expectancy of sea buckthorn flies caught and isolated has been found to be no more than 9 days.

Continuation of research allowed to determine the average yield, the degree of damage to the fruit by the larvae of sea buckthorn fly and the resistance group of a particular variety of sea buckthorn against this pest (Table 3).

According to table 3 it is seen that the variety Pagorbova severely damaged by larvae of flies (average 44%), varieties Chuyskaya, Pavil'onna and Morkvyana are moderately damaged, the percentage of fruit damage which is 25, 15 and 18%, respectively, or 2,8, 2,3 and 2.4 points. The Oranzhevaya variety is relatively resistant, and the Adaptyvna variety is resistant to this pest.

Thus, in 2020 the number of larvae in the fruits of medium-early and medium-ripe varieties of sea buckthorn significantly exceeded the economic threshold of harmfulness (EPS of this pest is 5—7 specimens/m$^2$, or more than 12% of fruit-damaged larvae [37]).

Sea buckthorn larvae have been found to significantly damage sea buckthorn fruits, making them unfit for consumption, processing and sale. Due to the fact that sea buckthorn belongs to medicinal crops, the use of chemical pesticides to protect it is undesirable. First of all, measures of agro-technical and biological nature are needed to prevent deterioration of the regulatory quality of fruits. Observations conducted in the northern part of the Forest-Steppe in 2019—2020 suggest that the intensive development of sea buckthorn fly can be controlled by creating unfavorable conditions for the pest, in particular by introducing in sea buckthorn agrocenoses stem mulching, soil compaction between rows. In particular, black dense (90 g/cm$^3$) agrofiber was used as mulch, covering the soil surface in the diameter of the plant crown and fixing it with plastic dowels (120 mm long). In the collection nursery in March, long before the flight of the sea buckthorn fly, sawdust was also used as mulch, which

*a* *b* *c*

*Fig. 7. Adult sea buckthorn fly and fruits damaged by larvae of this pest, 2019: a — adult; b — female abdomen with telescopic oviposition; c — damaged fruits [4]*

was laid within a radius of the crown, a layer up to 5—8 cm thick. accumulation of entomophagous and other predators that effectively destroy the above pest. And in the breeding garden, the soil between the rows was kept under black steam, where after heavy rains, or as the weeds grew, it was loosened with mechanized tools.

## CONCLUSIONS

According to the results of research in the fallow agrocenoses of sea buckthorn in the Polissya-Forest-Steppe ecotope, sea buckthorn populations were first identified in 2011. In 2017, the presence of sea buckthorn fly was detected in the northern part of the Forest-Steppe, given the damage to the fruits of early and middle-early varieties of sea buckthorn (up to 70%).

A more thorough analysis of data on the biological characteristics of sea buckthorn fly, comparing them with weather data, led to the statement that the appearance of this phytophagous in sea buckthorn agrocenoses is caused by a steady increase in average daily air temperature to +19°C in May and +24°C in the second decades of June — the second decade of August. The sea buckthorn imago was found to have started in the second decade of June and the mass fly in the first decade of July. It is shown that populations of sea buckthorn fly are numerous on early-ripening and medium-ripening varieties of buckthorn-like sea buckthorn, in particular: Chuiskaya, Pagorbova, Morkvyana, Pavil'onna. Fly larvae have been found to feed on fruit pulp, after which sea buckthorn fruit becomes completely unfit for fresh consumption and processing. Studies have determined the degree of damage to the fruits of sea buckthorn fly and to establish the resistance group of a particular variety of sea buckthorn to this pest. Varieties of buckthorn (Oranzhevaya, Adaptyvna) are relatively resistant to sea buckthorn flies. It has been established that carrying out agrotechnical measures — loosening the soil in the trunk and between rows, silting perennial grasses against the background of changing weather conditions significantly inhibits the development of sea buckthorn fly reduces its number and damage to sea buckthorn fruits.

*3. Differentiation of sea buckthorn varieties by resistance to sea buckthorn fly (reference point of the Institute of Horticulture of NAAS, Western Forest-Steppe, 2019—2020)*

| Variety | Fruit yield, kg / plant | Weight of 100 fruits, g | Damaged fruits, pcs / 600 fruits | Damaged fruits,% / plant | Fruit damage, score | Variety resistance group |
|---|---|---|---|---|---|---|
| Pagorbova | 4.9 | 0.63 | 264 | 44 | 3.7 | varieties that are severely damaged |
| Chuyskaya | 6.3 | 0.83 | 150 | 25 | 2.8 | varieties that are indirectly damaged |
| Pavil'onna | 5.1 | 0.72 | 90 | 15 | 2.3 | |
| Morkvyana | 6.5 | 0.71 | 108 | 18 | 2.4 | |
| Oranzhevaya | 3.7 | 0.61 | 21 | 3.5 | 1.5 | varieties that are relatively resistant |
| Adaptyvna | 2.8 | 0.45 | 2.9 | 0.56 | 0.2 | |

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**Обліпихова муха, прояви її шкідливості та контроль в агроценозах обліпихи крушиноподібної**


**Мета**. *Дослідити біоекологічні та морфологічні особливості обліпихової мухи, оцінити прояви шкідливості та способи контролю фітофага в агроценозах обліпихи крушиноподібної.* **Методи**. *Обліки обліпихової мухи проводили в агроценозах обліпихи крушиноподібної Інституту садівництва НААН України, його науково-дослідній мережі. В дослідженнях були залучені сорти обліпихи крушиноподібної вітчизняної та зарубіжної селекцій, різних за групами стиглості: середньоранні, середньостиглі, пізньостиглі.* **Результати**. *В умовах поліcько-лісостепового і лісостепового екотопів виявлено шкідника агроценозів обліпихи крушиноподібної —*

*обліпихову муху. Досліджено біоекологічні особливості та морфологічні ознаки шкідника. Встановлено, що в умовах Західного і Північного Лісостепу потерпають від обліпихової мухи середньоранні та середньостиглі сорти обліпихи. Розроблено комплекс заходів із застосуванням елементів агротехніки для контролю обліпихової мухи в агроценозах обліпихи.* **Висновки**. *Популяції обліпихової мухи численні на ранньостиглих і середньостиглих сортах обліпихи крушиноподібної, зокрема: Чуйская, Пагорбова, Морквяна, Павільйонна. Самиці мух телескопічним яйцекладом відкладають яйця у плоди, де відроджені личинки живляться м'якушем, після чого плоди обліпихи стають повністю непридатними до вживання у свіжому вигляді і переробки. Дослідженнями в умовах полісько-лісостепового і лісостепового екотопів виділено сорти обліпихи крушиноподібної (Оранжевая, Адаптивна), які є відносно стійкими проти обліпихової мухи. Проведення агротехнічних заходів (розпушування ґрунту у пристовбурній частині та міжрядді, проведення в селекційному саду і колекційному розсаднику залуження багаторічною трав'яною рослинністю) на фоні мінливих погодних умов значною мірою стримує розвиток обліпихової мухи і зменшує пошкодження плодів обліпихи.*

**обліпихова муха (*Rhagoletis batava* Hering); біоекологічні властивості; морфологічні ознаки; оцінка прояву шкідливості; заходи контролю; агроценоз обліпихи крушиноподібної**

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**Облепиховая муха, проявления ее вредоносности и контроль в агроценозах облепихи крушиновидной**

**Цель.** *Исследовать биоэкологические и морфологические особенности облепиховой мухи, оценить проявления вредоносности и способы контроля фитофага в агроценозах облепихи крушиновидной.* **Методы.** *Учеты облепиховой мухи проводили в агроценозах облепихи крушиновидной Института садоводства НААН Украины, его научно-исследовательской сети. В исследованиях были использованы сорта облепихи крушиновидной отечественной и зарубежной селекций, которые отличаются по группам спелости: среднеранние, среднеспелые, позднеспелые.* **Результаты.** *В условиях полесско-лесостепного и лесостепного экотопов выявлен вредитель агроценозов облепихи крушиновидной — облепиховая муха. Исследованы биоэкологические особенности и морфологические признаки вредителя. Установлено, что в условиях Западной и Северной Лесостепи Украины облепиховая муха повреждает среднеранние и среднеспелые сорта облепихи. Разработан комплекс мер по применению элементов агротехники для контроля облепиховой мухи в агроценозах облепихи.* **Выводы.** *Популяции облепиховой мухи многочисленны на растениях раннеспелых и среднеспелых сортов облепихи крушиновидной, в частности, на сортах: Чуйская, Пагорбова, Морквяна, Павильйонна. Личинки мух проникают в плоды, где питаются мякотью, после чего плоды облепихи становятся полностью непригодными к употреблению в свежем виде и для переработки. Проведенные исследования в течение 2017—2020 гг. в условиях полесско-лесостепного и лесостепного экотопов позволили выделить сорта облепихи крушиновидной (Оранжевая, Адаптывна), которые относительно устойчивы против облепиховой мухи. Проведение агротехнических мероприятий (рыхление почвы в приствольной части растений и междурядьях в коллекционных и помологических питомниках, посев многолетней травянистой растительности в междурядьях) на фоне меняющихся погодных условий в значительной степени сдерживает развитие облепиховой мухи и уменьшает повреждения плодов облепихи.*

**облепиховая муха (*Rhagoletis batava* Hering); биоэкологические свойства; морфологические признаки; оценка проявления вредоносности; меры контроля; агроценоз облепихи крушиновидной**

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