*• Փորձարարական և տեսական հոդվածներ • Экспериментальные и теоретические статьи •*
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# POPULATION OF THE MAIN CULTIVATED FRUITS WITH HARMFUL MITES

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In 2019-2020, studies were conducted in the orchards of Armavir region of Armenia to find out the population of different species and varieties of phytophagous lice. Studies have shown that of all the fruit trees apple tree and plum tree are the most in-habited by the ticks. The apple tree was the most populated by the Star krimson variety – 51.8 and 48.5%, and the plum tree by Wengerka italian variety – 47.5 and 42.2%.

*Mites – phytophage – gatherings – populations – fruit crops*

2019-2020 թթ.-ին Արմավիրի մարզի պտղատու այգիներում իրականացվել են ուսումնա-սիրություններ՝ պարզելու ֆիտոֆագ տզերով պտղատուների տարբեր տեսակների և սորտերի բնակեցվածությունը: Ուսումնասիրություններից պարզվել է, որ պտղատեսակներից տզերով առավել խիտ բնակեցված են եղել Խնձորենին և սալորենին: Առավել շատ բնակեցված են եղել Խնձորենու Ստար կրիմսն սորտը՝ 51,8 և 48,5%, և սալորենու Վենգերկա իտալական սորտը՝ 47,5 և 42,2%:

*Տիզ – բուսակեր – հավաք – բնակեցվածություն – պտղատուներ*

В 2019-2020 годах в плодовых садах Армавирской области Армении были проведены исследования с целью уточнения заселенности основных сортов фруктовых культур клещами-фитофагами. Исследования показали, что клещами наиболее сильно были заселены яблоня и слива. Этот показатель у сорта яблони Стар Кримсон в годы исследований составило со-ответственно 51,8 и 48,5 %, а у сорта сливы Венгерка Итальянская – 47,5 и 42,2 %.

*Клещ – фитофаг – сбор – заселенность – плодовые культуры*

The role of mite as pests of agricultural crops, as well as carriers of various pathogens, was revealed back in the 16th-17th centuries [1]. The study of tetrahedral lizards mite in Armenia began in the 19th century [3, 4]. It should be noted that nowadays, due to the negligent import of various crops and weak quarantine control, the mitehave spread to areas where they were previously absent [9, 11].

Diseases and pests are one of the main reasons for the decrease in fruit yield [3, 4]. Vegetarian mite, which can develop during the whole vegetation, are especially notable for their harmfulness [3]. As a result of their vital activity, the leaves' cells turn gray and fill with air, as a result of which the leaves fall off, the quality and quantity of the crop fall [6, 8, 10].

Based on the importance of the problem, we conducted studies in the RA Armavir region, which were aimed at revealing the population of different species and varieties of phytophagous mite in orchards. Studies have shown that 13 species of harmful mites were found on different fruit crops, 8 of them were tetranychid mites, and the remaining 5 were tetrapods. Research also found that the species Tetranychus viennensis Zacher, Tetranychu surticae Koch. and Cenopalpus pulcher Canestrini et Fanzago are the most common and harmful to apple and plum trees [2].

*Materials and methods.* In 2019-20, we conducted studies to find out the mite population on apricot, peaches, apple, cherry and plum trees and based on the collected samples, we carried out their identification [6]. We collected mite once every 7 days during the whole vegetation period, also we did accounting for all stages of tick development on 20 leaves, in some cases also on young branches and fruits [5, 7].
The mite population on fruit trees was estimated by the following scale:
0 points – leaves, on which no mitewere found,
1 points – leaves, up to 5% of the area of which is inhabited by mite,
2 points – leaves, 5 -25% of the area of which is inhabited by mite,
3 points – leaves, 26-50% of the area of which is inhabited by mite,
4 points – leaves, 51% of the area of which is inhabited by mite.
And we assess the mite population densityon the fruit trees according to the following scale:
0 points – leaves on which no mite were found,
1 points – leaves with 1 to 10 mite on them,
2 points – leaves with 11 to 20 mite on them,
3 points – leaves with 21 to 30 mite on them,
4 points – leaves with more than 31 mite on them.
To determine the mite population and population density on fruit trees we used following formula.

$$X = \frac{\sum abc}{n*4} *100$$

where X- is the population density on leaves

$\sum abc$ – Is the sum of points,

n - is the total number of registered leaves,
4 - is the maximum score [5].

*Results and Discussion.* By examining the mite population on fruit trees, we found that peach, apricot, cherry trees are relatively sparsely populated with mite, whereas the apple and plum trees have higher population density. The results of the study are presented in Table 1, and the average data about population density is presented in graph – image 1.
As the data in Table 1 shows, all the studied fruit trees were populated with ticks to varying degrees, despite the fact that in 2020 the development of ticks was weaker than in 2019. In 2019- 2020, the Star crimson apple variety was the most densely populated with mite, with a mite population of 51.8 and 48.5%, respectively, and a population density of 60.6 and 56.6%, then the plum Wengerka italian variety withmite population of 47.5 and 42.2%, respectively, and population densityof 54.6 և 52.8%, then variety of cherry Ezan achq with mite population of23.4 and 20.6 % and population density with 29.8 and 27.3%, followed by the Podbelskaya variety of cherry, which had a mite population of 19.9 and 16.4%, respectively, and population density of 25.8 and 23.0%.Relatively low mite population and population density was registered for peach and apricot trees.

**Table 1.** Mite population and population density on fruit trees

| Fruit tree species | Varieties | Mite population, % | | Population density, % | |
|---|---|---|---|---|---|
| | | 2019թ. | 2020թ. | 2019թ. | 2020թ. |
| Apricot | Yerevani | 9.6 | 8.2 | 17.8 | 16.5 |
| | Sateni | 8.8 | 7.0 | 15.0 | 13.6 |
| Peach | Narinji mijahas | 7.1 | 5.1 | 14.5 | 11.5 |
| | Zafrani mijaha | 6.5 | 4.3 | 13.3 | 10.9 |
| Apple | Star crimson | 51.8 | 48.5 | 60.6 | 56.6 |
| | Golden delishes | 48.0 | 45.1 | 58.4 | 54.1 |
| Plum | Vengerka italian | 47.5 | 42.2 | 54.6 | 52.8 |
| | Vengerka tnayin | 43.3 | 40.3 | 50.2 | 47.6 |
| Sweet Cherry | Ezan sirt | 23.4 | 20.6 | 29.8 | 27.3 |
| | Ezan achq | 20.8 | 19.8 | 25.2 | 23.9 |
| Cherry | Podbelskaya | 19.9 | 16.4 | 25.8 | 23.0 |
| | Shpanka xoshoraptux | 15.7 | 10.6 | 22.6 | 20.8 |
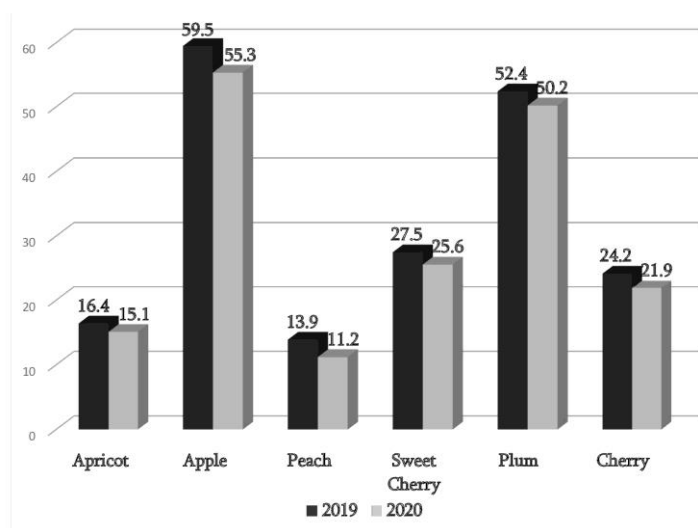


**Image 1.** Population density on fruit trees the average (%) of 2019 – 2020.

As can be seen from the average data presented in Image 1, the following values of population density were registered among the fruit trees studied in 2019: Apple trees- 59.5%, plum trees - 52.4%, cherry trees - 27.5%, cherry trees - 24.2 %, apricot trees - 16.4%, peach trees - 13.9%, and in 2020 - apple trees - 55.3%, plum trees - 50.2%, cherry trees - 25.6%, cherry trees - 21.9%, apricot trees - 15.1% and peach trees - 11.2%.Let's add that in 2020, compared to the previous year, population densitywas weaker.

Thus, we have focused our research on 2 of the fruit trees – apple trees and plum trees, because during the years of research the strongest mite population and population density was observed in the mentioned fruit trees.

As a result of research conducted in 2019-2020, it turned out that Star crimson apple, Golden delicacy, Wengerka italian, Wengerka tnayin varieties were the most densely populated with ticks.

The mite population of the mentioned apple varieties in 2019 was 51.8 և 48.0%, respectively, population density - 60.6 և 58.4%, and in 2020 the mite population - 48.5 and 45.1%, the population density: 56.6 and 54.1%.

The mite population of the mentioned varieties of plum in 2019 was 47.5 and 43.3%, respectively, the population density - 54.6 and 50.2%, and in 2020 the mite population - 42.2 and 40.3%, the population density: 52.8 and 47.6%. Relatively low mite population andpopulationdensity was recorded among the studied varieties of cherry trees, apricot trees and peach trees.

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