

Annotation

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Species composition of mites-phytophages in commercial plantings of apple trees in central Forest-Steppe of Ukraine

Mites-phytophages today have become one of the most dangerous pests of fruit crops. They are among the most interesting and least studied organisms. In case of mass propagation of the pest crop losses reach 35-50%. In addition, in infested trees by mites annual shoots ripen badly which reduces their hardiness and also negatively affects the amount of the harvest next year.

Considering the significant harm caused by mites-phytophages to fruit crops, in 2013-2014 work was carried out to study the species composition of phytophagous mites in commercial plantings of apple trees in Training, Research and Production Department of Uman NUH and biological characteristics of the development of dominant species are specified.

The studies in agrobiocenosis of the apple orchard of TRPD of UNUH in Uman district, Cherkasy region found that the species composition of phytophagous mites was presented by octopod mites: *Panonychys ulmi* Koch., *Tetranychys viennensis* Zacher., *Tetranychys urticae* Koch. Tetranychidae, *Bryobia redikorzevi* Reck. Bryobiidae and quadruped mite *Eriophyes mali* Nal. Eriophyoidae superfamily. The most numerical species among them was *Bryobia redikorzevi* Reck., the number of mobile ones of which on average during the years of the study was 3.2 mites/ leaf. In the second place on number was *Tetranychus urticae* Koch. – 2.5 mites/ leaf.

As a result of observing the development of a brown mite it was found that under conditions of TRPD UNUH the mite overwinters in the egg stage. Going out larvae from eggs, which overwintered, occurred with an average daily temperature of 7.8-8.1 °C and the sum of effective temperatures of 49.3-52.7 °C. The duration of larval development in 2013 was 21 days with an average daily temperature of 9.2 °C and 22 days in 2014 at a temperature of 9.0 °C.

Nymphal stages develop for 13-16 days with an average daily temperature of 15.7-16.9 °C.

The duration of the development period of a brown mite, namely its first generation, in 2013 was 34 days and in 2014 – 38 days. During this period in 2013 the sum of effective temperatures was 332.3 °C and in 2014 – 340.1 °C. Thus, for the development of one generation of a brown mite the necessary sum of effective temperatures is 330-340 °C (at a temperature threshold of developing 7.2 °C).

Five species of phytophagous mites damage industrial plantings of apple trees of TRPD UNUH phytophagous mites damage, dominant among which is *Bryobia redikorzevi* Reck. Bryobiidae. In the region of research *Bryobia redikorzevi* Reck. develops in four generations. For developing one generation the required amount of effective temperatures is 330-340 °C.

Key words: phytophagous mites, apple tree, developmental biology.