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Research Article

PEST RISK ANALYSIS IN COMSTOCK MEALYBUG (PSEUDOCOCCUS COMSTOCKI) IN POMEGRANATE AND DATES

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ABSTRACT

Dangerous pest is widespread in Uzbekistan. The most dangerous of these are coccidia. They damage many plants. Damages pomegranate, date, unabi, apple, pear, plum, quince, peach, almond, hawthorn, pine, poplar and other orchards and ornamental trees.

In Uzbekistan, comstock worms reproduce three times a year, and partly for the fourth time. But with the fall of the cold, the fourth generation perishes.

In pomegranate and palm crops, different levels of infestation were observed in different varieties by comstock worms. In pomegranate, 53.8% of Ok dona, 49.5% of Kizil anor, 39.1% of Kozoki anor and 22.8% of Achchik dona were damaged. 38.3% of Zenju-maru, 25.9% Tamopan and 20.1% Xiakume dates were damaged.

KEYWORDS

Orchard, pomegranate, date, damage, phytosanitary risk analysis.

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INTRODUCTION

Today, coccidia, which are serious pests of fruit and ornamental plants, cost the agricultural and horticultural sector $ 5 billion a year. The U.S. dollar is hurting. Accordingly, the identification of harmful coccidial species in fruit and ornamental trees, the development of measures to combat them is of great scientific and practical importance.

Comstock worms infect 300 different plants. Pomegranates, bexies, apples, dates, pears, peaches, as well as mulberries from fruit trees cause severe damage. They form large colonies on the trunk, branches and leaves of the tree and absorb the sap of the tree, drying out its medicine and weakening its growth. In severely damaged trees, swellings appear, young branches dry out and the leaves fall off. Comstock worms penetrate the soil to a depth of 5–6 cm, damaging the flowers, fruits of the plant, and also sucked the upper part of the roots. Occurs in some cases at depths up to 40 cm. The worms usually feed along the veins in the lower part of the leaf.

Comstock worms cause great damage to mulberry trees. Damaged mulberry leaves turn yellow and fall off into a haze. Mulberry leaves contaminated with Comstock worm waste are considered harmful to silkworms. A cup of pomegranate fruit is useful in the good development of the comstock worm and its eggs and drastically reduces the yield.

As of January 1, 2022, the Agency for Plant Quarantine and Protection of the Republic of Uzbekistan has spread a total of 955.55 worms, causing serious damage.

Figure 1. Pseudococcus comstocki damage to dates and pomegranates

RESEARCH MATERIALS AND METHODS

The study of phytosanitary risk analysis of comstock in the southern regions of Uzbekistan includes its bioecology, distribution, entomophagous species composition and the process of formation of host-

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entomophagous relations, as well as the use of biological control measures to control their numbers.

Entomological calculations and observations by the methods of V.Yakhontov, G.Ya.Bey-Bienko, N.V.Bondarenko, A.A.Zakhvatkin, S.A.Murodov; Application of CAPRA program and D.Orlinsky method in phytosanitary risk analysis; The dominant number of entomophages is based on the methods of KK Fasulati, SN Alimuhamedov. The degree of phytophagous damage is determined by the method of VI Tansky. The quality of entomophages is determined by the method of B.P. Adashkevich, in accordance with the formula of V.S. Abbot in the calculation of biological efficiency control variant in laboratory and field experiments. The obtained results are analyzed mathematically and statistically using the methods of K.Gar, B.A.Dospekhov and G.F.Lakin.

RESEARCH RESULTS AND THEIR DISCUSSION

Research in 2019-2021 Kashkadarya and Surkhandarya regions, Agency for Plant Quarantine and Protection of the Republic of Uzbekistan, Research Institute of Plant Quarantine and Protection, Department of Plant Quarantine and Protection of Tashkent State Agrarian University and the Institute of Zoology of the Academy of Sciences of Uzbekistan, Theoretical foundations of entomophagous ecology and biology performed in the laboratory.

The main materials were collected from pomegranate and palm orchards of Kashkadarya and Surkhandarya regions in 2019-2021. In the study, the lower, middle, and upper tiers of the plant were examined to determine the prevalence of coccidia, and the coccidia were currently overwintered and at what stage of development they were in the food plant.

In the pomegranate crop, varying degrees of damage was observed in different varieties by the comstock worm. Injury of 53.8% Ok dona, 49.5% Kizil anor, 39.1% Kozoki anor and 22.8% Achchik dona varieties was observed and detected (Figure 2).

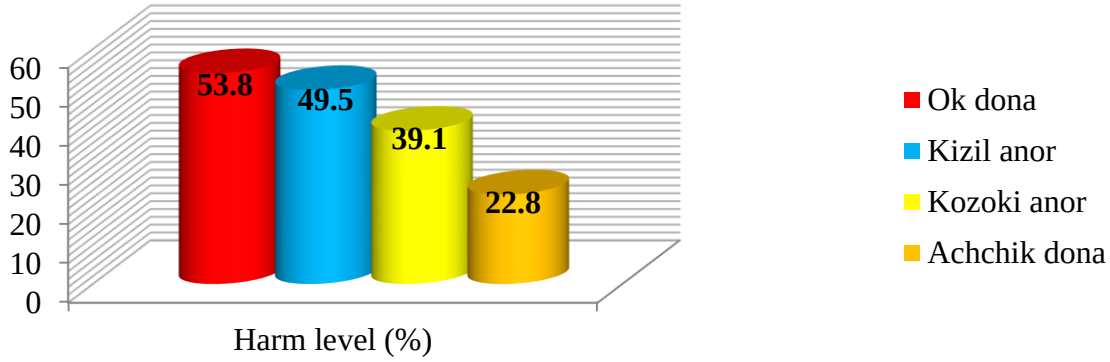

Figure 2. The degree of damage to pomegranate by comstock worms in different varieties (Kashkadarya and Surkhandarya regions, 2019-2021).

In the palm crop, varying degrees of damage was observed in different varieties by the comstock worm. Injury of 38.3% Zenju-maru, 25.9% Tamopan and 20.1% Xiakume dates was observed and detected (Figure 3).

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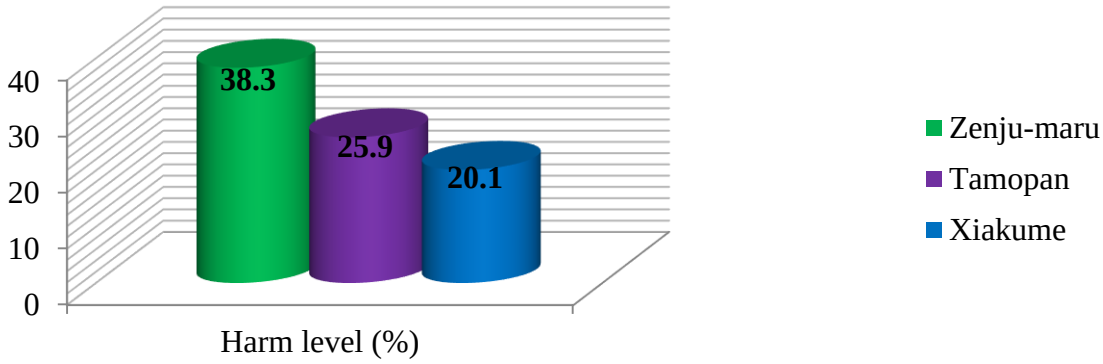

Figure 3. Degree of damage to various varieties by comstock worms in date crops (Kashkadarya and Surkhandarya regions, 2019-2021).

CONCLUSION

As of January 1, 2022, the plant quarantine and protection of the Agency of the Republic of Uzbekistan has spread to a total of 955.55.

In Uzbekistan, comstock worms reproduce three times a year, and partly for the fourth time. But with the fall of the cold, the fourth generation perishes.

In pomegranate and palm crops, different levels of infestation were observed in different varieties by comstock worms. In pomegranate, 53.8% of Ok dona, 49.5% of Kizil anor, 39.1% of Kozoki anor and 22.8% of Achchik dona were damaged. 38.3% of Zenju-maru, 25.9% Tamopan and 20.1% Xiakume dates were damaged.

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