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Natalia Raileanu

Institute of genetics Physiology and Plant Protection, Moldova

The corn biological protection in Republic of Moldova

The many factors influenced to effectiveness of the use of the entomophage Trichogramma, including the species composition of the oviparasite inhabiting in the agrocenosis. In this paper are reported the results of the analysis of biological material collected in the conditions of the Republic of Moldova in agrocenoses of corn. In cooperation with INRAE and scientifics reserhcers from Bioline Agroscience France bioligical material was analyzed and the composition of the Trichogramma was identified. As a result, the species of Trichogramma who are present in the conditions of corn agrocenosis were determined: T. semblidis, T. pintoi, T. evanescens. Moreover, under natural conditions the eggs of the pest H. Armigera was parasitized 100% by T. evanescens. It was found according to the COI genetic sequence made by INRAE - Sophia Antipolis, France.

The introduction of the biological method of corn protection using the entomophage Trichogramma evanescens was carried out in the central zone of the Republic of Moldova in the Criulinsky district of the Korzhevo village, 2021. The corn fields was protected from cotton bollworms under production conditions.The treated area was 1000 hectares.

The Trichogramma releases corresponded to the mass oviposition of the cotton bollworm, which coincides with the date of registration on July 20, 2021. Based on the monitoring of the pest, the timing of its development and the dimension of the population at the egg stage were determined: it consisted 3-4 eggs / plant. The entomophage was released during the period of mass egg-laying of the pest. The Trichogramma release rate was 2 g per hectare or 160,000 individuals per release. It should be noted that drones were used to release the Trichogramma in the field. Trichogramma resettlement work was carried out with the help of TTA Drones in cooperation with the Company, Dron Agro Assist.

When the Trichogramma was spread over the treated area, semolina was used as a filler to evenly distribute the eggs. The ratio of Trichogramma to host was 1:25.

The quality of the Trichogramma was also assessed for such biological indicators as: species - T. evanescens, percentage of hatching of individuals - 88%, percentage of females - 59%, Sex index of males and females was 1: 2.

As a result of the work carried out, the biological efficiency of the use of the entomophage Trichogramma, expressed as a percentage of the eggs of the pest that have been parasitized, was 78%.

Biography

Natalia Raileanu is a scientist and researcher at The Institute of Genetics, Physiology, and Plant Protection, Moldova. Ph. D. project title (2008): Biological argumentation for application Trichogramma spp. for control Helicoverpa armigera Hb. on tomatoes and sweet corn. In present position: Head of Laboratory Integrated Protection of Plants, jointly hired by a leading private company in the production and application plant protection measurement in agricultural sectors. She was a participant in many national, international, and commercial projects in biological and agriculture specialty, such as plant protection, biological methods for plant protection, chemocommunication of insects, IPM. As such, she works in an industry-academia collaborative research scheme to develop cutting-edge technologies for sustainable agriculture.

nata.raileanu@gmail.com