

Abstract

The proliferation of the tomato leafminer *Tuta absoluta* Meyrick (Lepidoptera: Gelechiidae), during 2008s and 2009 in all Mediterranean Basin profoundly destabilized the sector of tomato because it destroyed a big cultivated surface and led the farmers to make additional costs for the chemical fight. This method very used because of its spectacular effects turned out ineffective at the end of a few months. This new phytosanitary problem of the tomato led to the changes of the strategies of fight with the introduction of the other alternative means as the biological fight. We proposed the use of predatory bugs (the mirides) which are available in Algeria.

In a preliminary work, we followed the dynamics of the populations of *T. absoluta* from an artificial infestation. The vertical distribution of the tomato borer shows that the dispersal of the populations begins only in the third generation which is preferentially situated in the average (median) and high part of the plantations. From the 7th week after the beginning of the try, we note a population more raised on the median part where all the préimaginaux stages are represented. During the weeks 8, 9 and 10, the number of eggs remains high and that of the young stages (L1 and L2) is raised but stable rest. In the end of the week 10 (that is more than 2 and a half months after the infestation) the population at the level of this stratum (N2) is 135 individuals, but on the high part the population increases appreciably from the week 7 to reach 350 individuals at the end of the SEM 12; Let be 3 months after the beginning of the infestation.

A work in the laboratory on the food preferences of the various stages of development of the predator *Nesidiocoris tenuis* Reuter (Hemiptera: Miridae) with regard to the various instars of *T. absoluta* revealed that all the instars of the predator feed on eggs and on larvae of the tomato leafminer; however there is a preference marked for eggs with a 98, 3 % rate, for young larvae (L1) this rate is 92, 7 %. For the larvae of the 2nd instars (L2) are 65, 5 %. The older larvae (L3) are 13, 8 % and 6, 6 % for the instars L4. On the other hand nymphs are not consumed.

If the predator consumes a large number of eggs and the young larvae, there is a high chance for the tomato leafminer does not cause too many damages on the culture, especially under greenhouse. From these data, we can choose the moment of the releases of *N. tenuis* to have a better efficiency of fight against *T. absoluta*.

Keyword: *T. absoluta*, dynamic of the populations, *Nesidiocoris tenuis*, biological control.