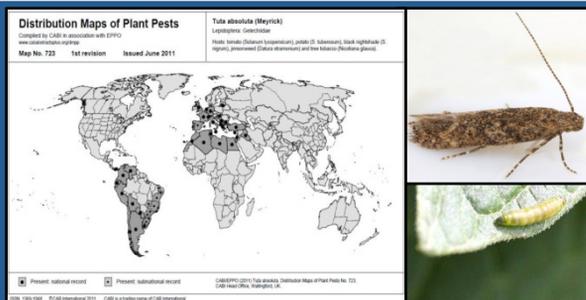




Introduction

The tomato miner, *Tuta absoluta* (Meyrick, 1917) has been observed for the first time in 2006, in Spain. In 2008, this insect pest invaded all Mediterranean countries including Maghreb, France and possibly Belgium.

We are actually looking at the ability of *Tuta absoluta* to develop on potato, and selecting the most resistant varieties to be incorporated in integrated pest management strategies against this invasive pest species.



Materials and methods

To study the suitability of *T. absoluta* to develop on different varieties of potatoes, we realized fitness experimentations. Fitness of *T. absoluta* was recorded as suggest by Hassan and Ansari (2011) and by Saeed et al. (2010). The development of 100 eggs of *T. absoluta* was followed on potato (variety Spunta) and on tomato (control). The duration of the total larval development period, pupal period, total developmental period (first instar to adult emergence), adult longevity and adult fecundity were recorded.



Results



	Tomato	Potato
Total developmental period	28 days	25 days
Egg mortality	19 %	11 %
Larval mortality	16 %	24 %
Pupal mortality	25 %	18 %
Total mortality	49 %	44 %
Female average pupal weight	3,01 mg	3,35 mg
Average adult fecundity	51 eggs	40 eggs

At 24 °C, the total developmental period is shorter on potato (25 days) than on the tomato control (28 days). The percentage of mortality is more important on tomato control than on potato while tomato is the basic host plant of *T. absoluta*. We notice a high egg mortality on tomato and in due to exclude all experimental errors, the fitness experimentation on tomato will be repeat rapidly. The average pupal weight of the females is similar between insects which developed on the two plants while the average adult fecundity is more important on tomato control than on potato. Even if potato is considered as a secondary host, *T. absoluta* shows a great suitability on potato because it has a short development time, a high reproductive rate with low mortality on this plant.

Perspective

In the future, we shall test different varieties of potatoes in order to find varieties which will be more resistant to the pest than the others. We want to link the results of fitness experimentations to the volatiles organic compounds emitted by different varieties of potatoes in order to highlight substances which could repel the insects or prevent their development. Some volatile collections of infested potatoes are planned to find volatiles which would attract insect natural enemies.