Effects of weather conditions on pheromone trap efficiency and tarnished plant bugs

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Introduction

The **tarnished plant bug** (*Lygus lineolaris*) is prevalent pest in the Strawberry fields from Quebec.

Use of **plant volatiles and pheromone traps** is a interesting **alternative pest management option**.

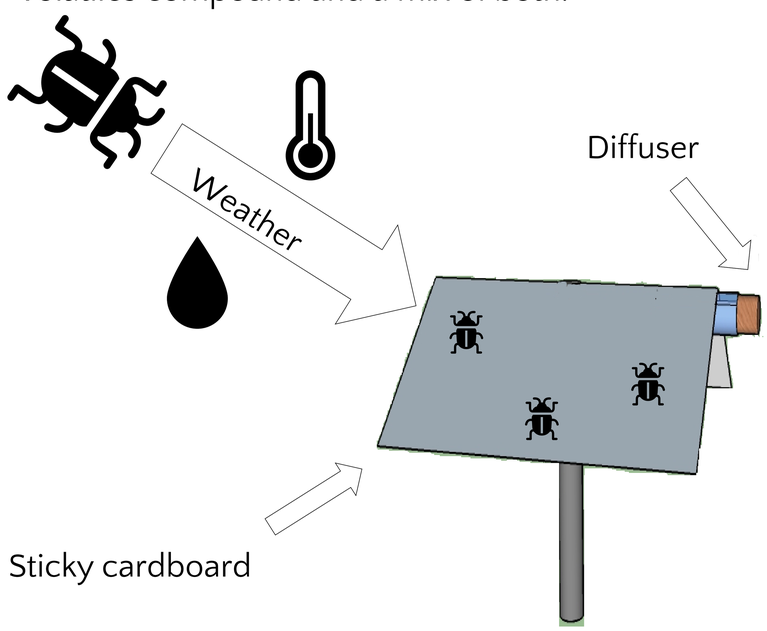
The **weather conditions** influence the behavior of the tarnished plant bug and on the diffusion of the volatile compounds of the traps.

We studied the effect of **temperature and humidity** on the **power of attraction** of four types of **odor traps** in different strawberry fields at Mirabel.

Methodology

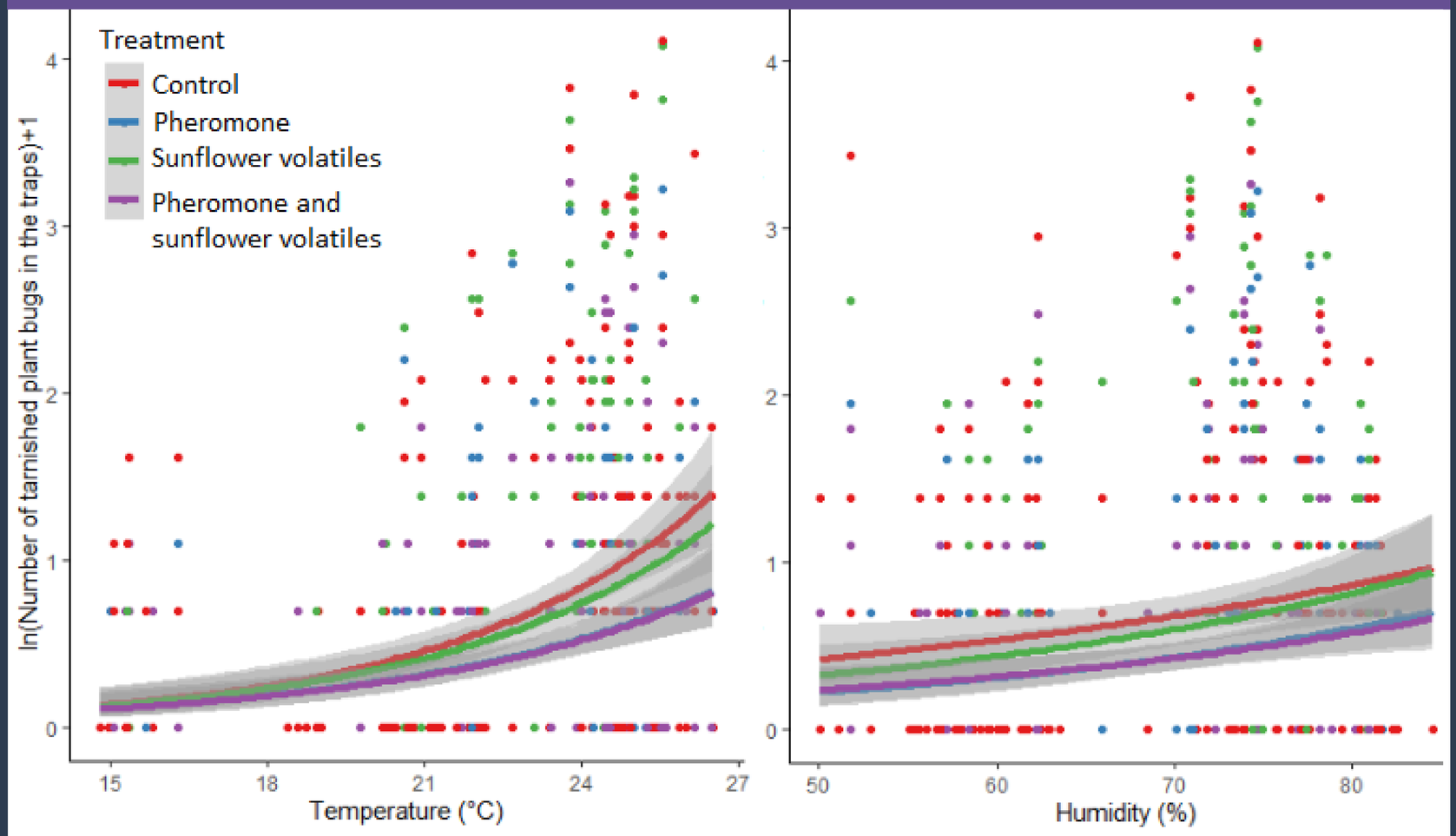
We installed four types of odor traps in ten strawberry fields in the Mirabel region between May and October 2018.

The different odors used were a control, a sexual pheromone compound, a sunflower volatiles compound and a mix of both.



The traps and the odors compounds were changed every two weeks. We counted the numbers tarnished plant bugs on the trap. The weather conditions were record continuously with a probe installed at each site.

Results



When the temperature and the humidity increase, we found more bugs in the traps regardless of the type of treatment.

There is no significant difference in the influence of the temperature and the humidity on the control treatment and the other treatments.

Discussion

The increase of the temperature and humidity increases the efficiency of the sticky trap.

The fact that the temperature and the humidity affect equally the four types of traps suggest that the increase in trap efficiency would not be due to a change in diffusion of the volatile compounds in function of the weather.

The increase in the flying capacity of tarnished plant bugs at higher temperature can explain why we found more of these insects in the traps at warmer temperatures.

A higher humidity reduces the water loss during to the flight. Thus, at greater humidity, the tarnished plant bugs would fly more and they are more likely to go in a sticky trap.

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Ce projet a été financé, en partie, en vertu du sous-volet 3,2 du programme Prime-Vert 2013-2018 et il a bénéficié d'une aide financière du Ministère de l'Agriculture des Pêcheries et de l'Alimentation du Québec.

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