

Effect of *Murraya koenigii* volatiles on the host selection behavior of the psyllid *Diaphorina citri* Kuwayama (Hemiptera: Liviidae)

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Why we did this research?

Huanglongbing (HLB) or greening is considered the main disease of citrus. This disease is associated with the bacteria "*Candidatus Liberibacter spp.*". Once there are no curative measures for the disease, management is based, among other measures, on the control of the insect vector, the Asian Citrus Psyllid (ACP) *Diaphorina citri*. This insect has a host range of about 20 species of the family Rutaceae, including *Citrus spp.* However, there are a few studies related to their host preference.

What was the main goal?

To evaluate the ACP behavior host choice, comparing curry leaf tree (*Murraya koenigii*) and 'Valencia' Sweet orange (*Citrus sinensis*).

How we did this?

We have investigated the effect of curry leaf volatile (Fig. 1A) on the behavior of *D. citri* through bioassays with olfactometer type 'Y'. This type of olfactometer is composed of a main pipe and two side glass tubes (Fig. 1B). Chambers containing the treatments were connected to the tubes (Fig. 1C). The treatment consisted of citrus plants and curry leaf, containing shoots of the same size, and control (clean air). The attractiveness of both males and females, with defined ages, was evaluated.

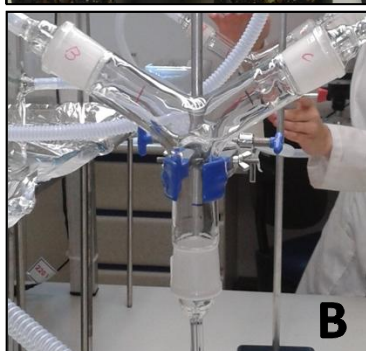


Figure 1. The curry leaf (A); Olfactometer type 'Y' (B) and Citrus and curry leaf in the chambers (C).

What we found?

When citrus plants and curry leaf were compared, it was observed that the females were more attracted to curry leaf than citrus, which did not occur with the males (Fig. 2). Subsequent studies will be conducted to collect the possible volatile involved on the process of the host selection of curry leaf tree, looking for the achievement of attractiveness for *D. citri* management.

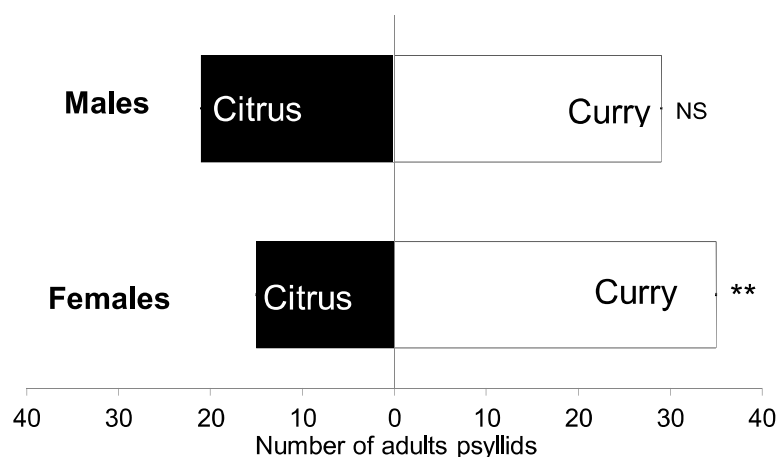


Figure 2. Number of *D. citri* males and females on citrus and curry leaf tree.

Non-Technical summary

Huanglongbing is an important disease that has threatened the continuity of the citrus industry around the world. The insect that transmits the bacteria is *Diaphorina citri*, which its management needs to be done using several methods of control. One strategy is the exploitation of host plants to be used as trap crops. Therefore, we evaluated the attractiveness of the curry leaf compared to citrus to *D. citri*. Tests showed that the females were more attracted to the curry leaf than to the citrus. The next step is to verify which of the curry leaf tree volatiles are involved in the ACP "attraction", for further studies in the field.