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Effects of local plant extracts on golden flies

**Bactrocera dosalis Hendel and their applications in
improving fruit yield of mango**

得獎獎項

Botany Third Award

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Effects of local plant extracts on golden flies *Bactrocera dosalis* Hendel and their applications in improving fruit yield of mango

Abstract

Mangoes were our top local agricultural products. We observed that although fruit flies can enhance cross pollinations of mango flowers resulting in fruit production, they also cause fruit rotting later. Many plant extracts were reported to be either insect attractants or inhibitors of egg laying process. In our project, we intended to find out whether we can apply these plant extracts to improve mango fruit yields. Preliminary study of the fruit flies' life cycle revealed that fruit flies, a kind of small insects, had 4 periods in its life cycle: egg period, Zygote period, 2-3 chrysalis and mature period. Scented oils extracts from Lamiaceae family, reported to have attracting effect on insects, basil, sweet basil, tree basil, peppermint and hoary basil were prepared. Tests performed in laboratory showed that they have attracting effects on the fruit flies at different degrees. The basil extract showed highest concentration dependent attracting effect on fruit flies, with best result at 70% concentration. Field test at this concentration showed increase of fruiting by 14.4%. Plant extracts from Gramineae family reported to (L.), swollen finger grass, crowfoot grass, goose grass and cogon grass, were prepared. The cogon grass extract showed highest reduction effect on the number of eggs laid by mango fruit flies, the best concentration was 10,000 ppm. Mixture of basil oil and cogon grass extracts showed combined effects of higher mango fruit yields and less rotting up to 13-15%, both at laboratory scale and field test. We will improve this finding for more efficient techniques for use in increasing yield of quality mangoes in our province.

評語

- interesting topic with great application potential
- excellent presentation skill.
- Using plant extract for insect control is safe way to improve the yield of the important crop, mango, in Thailand.