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作品名稱

**Effect of Certain Plant Extracts on Fruit Set and The
Prevention of *Jatropha curcas* Linn's Insect Pests**

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作者姓名

Kusalin Bandasakpibal Atikwan Boonnachot

Abstract

The objectives of this study were to investigate (1) the floral biology of *Jatropha curcas* Linn. as well as its possible pollinators, (2) the correlation between the number of pollen on stigma and the frequency of floral visitors, (3) the attractiveness of essential oil extracts from three species of Lamiaceae, i.e. *Hyptis suaveolens*, *Plectranthus amboinicus* and *Orthosiphon aristatus*, to *Apis florea*, (4) the repellent effect of crude extracts from three species of Graminae, i.e. *Imperata cylindrica*, *Eleusine indica* and *Dactyloctenium aegyptium*, on *Polyphagotarsonemus latus*, and (5) the effect of appropriate combination between lamiacean essential oil and graminaceous crude extract on the percentage of fruit setting and insect pest protection.

Jatropha curcas is monoecious plants with tiny male and female flowers borne on the same panicle cyme. One plant produces 15-30 inflorescence. Each inflorescence composes of 70-120 florets, and only 4-8 florets are successfully setting fruits. Each flower takes approximately 17 days in developing from floral bud till floral opening. The appropriate time for pollination is from 09.00 am to 10.00 am. While bees, wasps, hornets, flies and dragonflies are its potential pollinators, mites, aphids and worms are its harmful insect pests.

Three volumetric, 1, 3, 6 and 9 ml, of each essential oil extracts were separately sprayed on each observed inflorescence. According to the experiment, 6 and 9 ml of each of the essential oil extracts give similar effective outcome, However, The *H. suaveolens* extract at 6 ml is the most effective attractant for *A. florea*. because it uses less of the oil extracts.

Four concentrations, 0.1 %, 0.5 %, 1.0 %, 1.5 % and 2.0 % of each of the

crude extracts from three graminaceous plants were sprayed on each tested plants separately. Concentrations above 1.0% consistently provided an effective biocidal activity against *Imperata cylindrica* , however 1.0% is acceptable. because it uses a reduced level of the crude extracts

The combination of *H. suaveolens*'s essential oil and *I. cylindrica* crude extract both significantly enhanced fruit setting of *J. curcas* and protected the plant from *Polyphagotarsonemus latus* without adverse effect on its pollinators.

評語

This is a interesting research project with great application potential.