

Uplifting Oil Palm Pollination and Fruit Set Formation Through Population Enhancement of *Pyroderces* sp. and *Thrips hawaiiensis*

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Low fruit set continues to limit oil palm (Elaeis guineensis Jacq.) productivity in some plantation areas in Malaysia, despite the presence of the primary pollinator, Elaeidobius kamerunicus. This problem has been attributed to declining populations or reduced pollination efficiency of E. kamerunicus, possibly due to the high female-to-male inflorescence ratio in advanced and high yielding planting materials. To address this issue, the supplementation of pollination activity through the augmentation of endemic insect pollinators is proposed. This paper outlines a research plan to evaluate the potential of Pyroderces sp. (Lepidoptera: Cosmopterygidae) and Thrips hawaiiensis (Thysanoptera: Thripidae) as supplementary pollinators. Both species are locally endemic and have been the primary pollinators prior to the introduction of the oil palm pollinating weevil, E. kamerunicus, into Malaysia in 1981. These endemic pollinators may complement E. kamerunicus through temporal, spatial, and morphological advantages. The proposal includes developing mass-rearing techniques for these insects, testing alternative host substrates (such as banana fruits and flowering plants) for mass rearing and field planting of their respective flowering host plants, i.e. Gardenia jasminoides, Hydrangea macrophylla, Dianthus caryophyllus and Rosa rugosa. Their establishment and pollination efficiency can be evaluated under field conditions. Successful supplementation could increase fruit set and oil yield while ensuring stable pollination under varying ecological conditions.

Keywords: *Elaeis guineensis, Elaeidobius kamerunicus, Pyroderces sp., Thrips hawaiiensis, pollination efficiency, fruit set, endemic pollinators, Malaysia*



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