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A Never Ending Story: Tales of the Oriental Fruit Fly and its Love Potion

ABSTRACT

It is a well-established fact that the Oriental fruit fly, *Bactrocera dorsalis* is one of the most feared pest species in the world owing to its highly destructive and invasive nature. It was not until the discovery of methyl eugenol, a highly potent male attractant, that became the game-changer in the control of those notorious flies. Traps baited with methyl eugenol and insecticide have now become synonymous with the widely used male annihilation technique. However, behind the aggressive control of those flies, lies a fascinating story of the Oriental fruit fly and methyl eugenol. For over a century, the attraction of only male flies to that compound remained a mystery. In this seminar, I will provide a glimpse of how methyl eugenol was unravelled as the love potion of the Oriental fruit fly, and the fascinating aspects of the Oriental fruit fly and its love potion. Finally, some updates on this fruit fly-lure interaction will be provided.

In the good old days, as an inquisitive second year biology major, Alvin decided that he would spend his vacation trapping fruit flies in Penang as a student assistant under Prof. Keng-Hong Tan. Little did he realize that was a start of a memorable journey falling in love with the flies (and ultimately marrying the love of his life, both loving the flies from the start!). He still dreams about how elegant male Oriental fruit fly detects methyl eugenol, ingest it and biotransforming it to sex pheromones that are transported to the rectal gland before emission during mating. Alvin is currently the Chair of the Tephritid Workers of Asia, Australia and Oceania (TAAO), Vice-President of the Asia-Pacific Association of Chemical Ecologists (APACE) and host of the 2022 3rd ISCE-APACE Joint Meeting in Kuala Lumpur.