

TROPICAL FRUIT PESTS AND ITS MANAGEMENT OPTIONS IN MALAYSIA

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Tropical fruits are a botanically diverse group of fruits indigenous to tropical regions. At the moment, most of the major tropical fruits such as mango, pineapple, durian, and papaya account for approximately 75 percent of global fresh tropical fruit production. In Malaysia, cultivation and exports of these commodities have been increasing since the early 90's. Despite the increase, pests and diseases remain as a major factor to the loss of marketable yields. There are a number of insect pests and diseases damaging major tropical fruits in this country. Some of the important insect pest species are fruit flies (*Bactrocera* spp.), borers (*Mudaria* sp. and *Conogethes* sp.), whiteflies, and mealybugs that attack fruits such as papaya, durian, pineapples, and other few minor tropical fruits. In terms of diseases, they are caused by fungus, bacteria, or viruses. Most of these known pests and diseases are manageable and can be controlled using integrated methods. In this paper, we would like to highlight about the newly emerging papaya dieback disease (PDD), caused by *Erwinia mallotivora* which is now becoming the most damaging disease of papaya in Malaysia compared to other papaya diseases such as papaya ringspot virus and anthracnose fruit rot. We will discuss further on the local spread of PDD as well as MARDI's current works in managing the disease through induced systemic resistance (ISR) using beneficial microbes, systemic acquired resistance (SAR), and a other biotechnology tools such as phatogenomics, biosensors, quorum sensing, omics, and bioinformatics approaches. These technologies perhaps can pave the way to revitalize the papaya production in Malaysia and increase the market value of papaya exports that are deteriorating and heavily impacted by the PDD.

Keywords: tropical fruit pests, papaya dieback disease, ISR, SAR, phatogenomic