

DOES MATING DISRUPTION CAUSE DISPERSAL OF ORIENTAL FRUIT MOTH *GRAPHOLITA MOLESTA* BUSCK. ?

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Oriental Fruit Moth (OFM) (*Grapholita molesta* Busck, Lepidoptera: Tortricidae) is one of the most important pests of commercial peach orchards in the Goulburn-Murray Valley region of Victoria. Many growers have successfully controlled the OFM population by using mating disruption (MD). However, some growers have reported an increase in OFM damage to shoot tips and fruit, with the most severe damage found at the edge of peach blocks under MD, adjacent to pear blocks under insecticide treatments. This pattern of damage is known as an 'edge effect'. Our experiment aimed to investigate the OFM infestation pattern on newly planted peaches (NPP) surrounded by different fruit blocks during three seasons in 1997-2000. The peach trees were planted in August 1997 in a block that had been vacant for 2 years, with the expectation that all OFM infestation in this block must be due to migration of mated OFM females from adjacent fruit blocks. The 6.5 ha block had pasture on the North side, Noon Peaches under MD and sprayed Granny Smith apples on the South, sprayed Granny Smith apples and WBC Pears on the West, and sprayed Granny Smith apples on the East. Food trap monitoring data indicated that OFM was concentrated mostly in the Noon peach block, where MD was applied for the first season. The NPP block was not treated against any pests during the first two seasons (1997-99). All damaged shoot tips were counted from each of 4,233 peach trees in the block after the first OFM flight during 3 years. In the first season the number of damaged shoot tips fluctuated from 1 to 5 per tree with damage slightly concentrated near Granny Smith apples on the West and East. The damage increased in the second season with 1 to 11 damaged shoot tips per tree. The shoot tip damage was distributed randomly throughout the whole NPP block without any edge effect. MD was applied to the NPP block in the third season and the damage decreased to 1-3 tips per tree in the middle of the block, but remained higher (1-10 tips per tree) in the edges of the block adjacent to sprayed apples and pears. There was no edge effect between NPP and Noon peach blocks both treated with MD. The hypothesis that the pheromone concentration used in MD may cause dispersal of OFM will be discussed.