

Editors comment: This is the second of a series of articles on insect pests that afflict fruit growers in China. Beasts that Australian growers don't want. Beasts that you should be aware of in case you are the first to see them in Australia.

## **Beasts of the Orient!!!**

### **Peach fruit moth *Carposina sasakii***



Peach fruit moth – wing span 13 to 17 millimetres - Peach moth is a major pest of apples and an occasional pest of peach throughout China, Korea and Japan. It is also a pest of jujube, another important tree fruit crop in China. Jujube is a fruit that looks like a small granny smith apple and is eaten fresh, dried and as juice. In China, there are 2.2 million hectares planted to apples and 1.5 million hectares planted to jujube so this makes peach fruit moth an important beast. Although reported in pears, plums and apricots, it does not appear to be all that important in these crops in China.

Peach fruit moth is a small grey non-descript moth about the size of Oriental fruit moth. The larva looks like Oriental fruit moth or codling moth – a little more red than pink but this is not a diagnostic characteristic. The damage it does is similar to OFM – it burrows into the fruit flesh but does not head for the apple core like codling moth. Peach fruit moth larvae are not a compulsive cannibals like codling moth larvae and more than one larva per fruit is common.



Larva of peach fruit moth *Carposina sasakii*

### **Life cycle and behavior.**

Peach fruit moth overwinters as a diapausing larva in cells in the soil. In spring, they come close to the surface, spin a loose cocoon and pupate. Emergence is later than either codling moth or Oriental fruit moth, usually in late spring or early summer. Adult moths mate in the upper part of the tree canopy (like codling moth) and the females fly to the fruit and lay eggs. Unlike OFM, they do not infest shoots. The females can lay up to 300 eggs. In warmer areas, peach fruit moth can have two full generations in a year but only one in the cold northern areas of China.

### **Pest status**

If uncontrolled, peach fruit moth can cause 40 to 50% crop loss in apples and higher than this in jujube. Russians claim that this pest can take 100% of a pear crop but this does not appear to happen in China. When we first started working in China, peach fruit moth was considered to be the number one pest of peaches, responsible for all the peach fruit infestation. The presence of high numbers infested shoots was a give away. OFM turned out to be the main pest of peaches in China as it is in Australia and the major pest of pears as well. (I will write more on OFM and codling moth in China in a separate article).

### **Control of peach fruit moth.**

For several decades, Chinese farmers have bagged their apples and peaches individually to protect from various insect pests including peach fruit moth. Insecticides for control of peach fruit moth have always been used in jujube where bagging is not an option. For many years, Chinese orchards were small, typically half an acre. In most regions, trees were trained to low vase shapes that allowed all operations including bagging of fruit to be done from the ground. This is changing. The rural population in China is aging. Children are moving to the cities where jobs are better paid and life is more exciting than 'down on the

farm'. Farms are amalgamating into larger units and adopting western tree training methods and practices that result in higher yields.. Rural labour is now relatively in short supply - the inevitable outcome of the one child policy - and is expensive. Labour intensive practices such as bagging are on the way out.



Bagging individual apples, standard practice for control of peach moth in China for several decades is now on the way out.

Sinogreen is well advanced in development of an 'attract and kill' system for peach fruit moth that uses very small quantities of the pheromone together with a new dispenser technology. We believe that this will have significant advantages in cost, demand for labour and efficacy over bags, cover sprays and a now dated Japanese mating disruption technology.

#### **Movement and threat to Australia and New Zealand**

Peach fruit moth can realistically only enter Australia and New Zealand by importation of infested apples, jujube and perhaps peaches and pears. Jujube is not imported into Australia at this stage. Quarantine protocols are in place to prevent this insect from entering. The moth is not highly mobile so if it did enter, once detected, it could be contained and eradicated. While peach fruit moth is a serious pest, it does not constitute a major threat to apple industry in Australia and New Zealand.

#### **About the author**

Stephen Sexton is an Australian entomologist and agricultural scientist now based in Nanjing in China. He is the principal scientist of a Chinese company Sinogreen which specializes in development of products based on insect behavior modifying chemicals - like pheromones and host plant volatiles. He founded Biocontrol and Pacific Biocontrol and pioneered commercialization of

pheromone mating disruption technology with the Isomate range of products.  
Stephen and his wife Hilary now live most of the year in Nanjing.