FACTSHEET

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Island Fly in citrus

Island fly (*Dirioxa pornia* Walker) is a native Australian tephritid which has historically been considered a species of no economic significance due to its apparent preference for over-ripe, damaged or rotting fruit. In recent years, Island fly larvae have been detected by quarantine authorities in Navel and Valencia oranges exported to New Zealand, USA and Japan. As the larvae are morphologically similar to tephritids of economic significance, the detection of Island fly larvae becomes a quarantine issue until molecular identification is completed.

Further interceptions of Island fly may trigger trading partners to re-categorize the quarantine status of Island fly, with serious consequences for the Fruit Fly Exclusion Zone (FFEZ) citrus production regions. Export markets are critical to the viability of the Australian citrus industry.

DESCRIPTION

Adults are 5.5–8.5 mm long and distinguished by a brownish yellow thorax and an abdomen with a black tip. The wings are strikingly mottled with dark brown and black fogging.

Despite Island fly only being known to infest fruit which has suffered rind damage, some key trading partners consider Island Fly a quarantine pest. As Island fly maggots look very similar to those of Queensland Fruit Fly they must be formally identified by entomologists. Failure to prevent this species from entering export market programs creates serious export quarantine repercussions and could result in loss of these

markets and/or the implementation of extremely difficult and expensive export/orchard protocols.

BIOLOGY

Questions about whether Island Fly attack healthy fruit in the same way Queensland and Mediterranean fruit fly do, arose shortly after first detections of Island Fly in citrus growing regions. As a consequence host status verification experiments were run on Navel oranges and results support previous study results that Island fly can only infest damaged fruit, even when given no choice cannot infest sound fruit. Even in cases where eggs were laid under orange calyxes and hatched the fruit remained uninfested, suggesting that the larvae are unable to penetrate the rind. Studies of Island Fly in the field showed that they also failed to infest damaged fruit on the trees; however, it hadn't been determined if this result was an artefact of the environmental conditions. Fallen fruit experiments show that the population densities of Island fly in an orchard are directly related to the density of fallen and discarded fruit on the orchard floor.

Several packingshed studies showed that whilst Island fly were well established in orchards around the packing shed no flies were trapped within the shed or storage area. This suggests that the fruit are being infested in the field rather than in the packing process.

CONTROL MEASURES

Due to withholding periods and crop manipulation flow on affects there are limited control applications left in our tool kit to combat this pest. However, good hygiene practices are the most effective long-term strategy to significantly reduce Island fly from orchards and the risk of infiltrating export produce.

Control measures that can be taken include:

- Remove and dispose of injured/fallen fruit from orchard floor to avoid a build-up of potential breeding sites.
- Ensure all rind damaged/rotten fruit is not harvested into bins.
- Full Grower/Orchard traceability is essential
- Affected orchards or fruit should be diverted from export markets where possible.
- Pack house inspections on arrival for the presence of Island fly should be introduced.
- Packing shed sorters ensuring that split fruit does not find its way into cartons
- Regularly dispose of soft culled fruit away from packing houses to reduce additional breeding sites

This fact sheet was put together by SARDI, with input from Citrus Australia.