

SCIENTIFIC NOTE

A PILOT PROGRAM TO MONITOR FRUIT FLY INFESTATION OF FRUIT INTERCEPTED AT ROADSIDE INSPECTIONS IN NEW SOUTH WALES

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The use of vehicle inspections to minimise the entry of potentially infested fruit has been used in New South Wales to safeguard the Fruit Fly Exclusion Zone (FFEZ) since 1996, and before 1990 in previous programs. While the assessment of the number of vehicles carrying fruit is comparatively easy, assessing infestation of fruit by Queensland Fruit Fly *Bactrocera tryoni* (Froggatt) (Diptera: Tephritidae) can be time consuming. There are quick assessment methods which rely on slicing fruit, however these are unreliable for the first five days after oviposition has occurred because of the small size of larvae. Additionally, larvae are almost impossible to identify to species level in the field. These methods were used in the 1970s and 1980s (O'Loughlin 1983) so determinations made in these circumstances may be suspect.

A more accurate method is to return all seized fruit to a laboratory for assessment. Each consignment is placed in a sealed container with the fruit resting on or suspended over a layer of vermiculite. Any tephritid eggs or larvae contained in fruit can complete development before exiting to pupate. In nature, larvae drop from fruit and burrow into soil below fruit trees to pupate and subsequently emerge as adults. In the laboratory, larvae pupate in the vermiculite. Emerging adults are collected in the sealed container and identified using published keys for Tephritidae (White and Elson-Harris 1994) rather than the less reliable larval identification techniques

There has been no assessment of infestation of fruit from roadblocks in recent years. This laboratory method was used as a pilot assessment of fruit entering the FFEZ near Broken Hill between 28 January and 16 April 2003. The roadblocks or vehicle inspection stations were established as described by Dominiak *et al.* (2001). In total 1455 vehicles were stopped and 77 (5.3%) were found with fruit. Seized fruit from a sub-set of 45 intercepted vehicles was packaged and sent to the Orange campus of the University of Sydney where it was placed in the laboratory as described above. Fruit was retained for 44 days to allow adequate time

for any tephritids to complete development.

In total, 51.3 kg fruit consisting of apples (18.5 kg), oranges (8.9 kg), tomatoes (6.9 kg), bananas (6.7 kg), peaches (2.3 kg), avocados (1.9 kg), mangoes (1.5 kg), nectarines (1.5 kg), capsicums (0.8 kg), pears (0.8 kg), chillies (0.3 kg), and small quantities of other fruits was processed. No tephritids were detected in these consignments.

Despite the small scale of this pilot program, this was unexpected as Dominiak *et al.* (2000) reported that tephritid-infested fruit was more commonly intercepted between November and February. A more extensive evaluation program is required to assess the level of infestation in intercepted fruits and the importance of roadblocks on regional quarantine for tephritid pests.

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