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(Te Papa, 2006)

Topic: Painted apple moth (*Teia anartoides*), the Voracious visitor from Australia

Painted apple moth (*Teia anartoides*)

Order: Lepidoptera

Family: Lymantriidae

A voracious and indiscriminate eater, the painted apple moth (*Teia anartoides*) destroys plants by eating their leaves. This invader from South Australia is a threat to forestry, horticulture, and possibly indigenous trees.

It became established in South Auckland between 1999 and 2002, and was the subject of a controversial aerial spraying campaign to kill it. A Wellington School of Medicine report brought into question the safety of the spray used. Residents claimed negative health effects as a result of the spraying, and there were calls for an independent inquiry. So why did the government of the day deem it necessary to eradicate the moth, even at the risk of a public backlash?

The short answer is the potential economic effects of this pest. The moth can feed on pine trees up to 8 years old, affecting their growth. It particularly likes wattles and acacias, roses, and apple trees, but it has also been found feeding on indigenous trees such as kowhai, mountain ribbonwood, and karaka. If it spreads, the cost to the country's economy is estimated to be in the hundreds of millions of dollars over just two decades.

The moth was first found in New Zealand in Dunedin in 1983 and again in Glendene (Auckland) in May 1999. After 2002, it became established in Avon, Kelston, Titirangi, and Mt Wellington in Auckland. The female moth cannot fly, but the caterpillars – swinging on a silken thread – can be carried short distances by the wind.

The Ministry for Agriculture and Forestry (MAF) has been managing the eradication of the painted apple moth since 1999.

In May 1999, ground spraying and trapping began on properties in the West Auckland suburb of Glendene. A widely-used organo-phosphate insecticide known as chlorpyrifos was applied to trees on the infected properties as well as surfaces of buildings.

MAF later tried an insecticide known as deltamethrin, which is approved for use in New Zealand and in many other countries.

In addition to ground spraying and control, aerial spraying began in January 2002 to cover target areas which could not be reached by ground spraying – gullies, tall trees, and difficult terrain in the West Auckland area, including the Waitakere rainforest.

The insecticide used in the aerial spraying was known as Foray 48B, a formulation of *Bacillus thuringiensis kurstaki* (Btk), a naturally occurring soil bacterium. Btk is commonly used to control moth and butterfly pests as it specifically affects the caterpillars of these species. It is purported not to harm animals or people.

However, there was concern about the health threats of this insecticide. A health register was set up for South Auckland residents with specific allergies and health concerns, and everyone on the list was contacted by a doctor (and by MAF) before spraying started. Those with health concerns were urged to stay indoors with windows and doors closed for two hours after the helicopter had passed overhead.

Aerial spraying for the painted apple moth officially ended in May 2004. Ground surveys still continue to monitor populations and accidental introductions. In August 2005, a painted apple moth was found in Otahuhu, Auckland, thought to be another hitchhiker from Australia.

Reference

Crowe, A. (2002.) *Which New Zealand insect?* Penguin Books (NZ) Ltd.

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