

# DPI&F note

## Unusual insect galling citrus - have you seen it?

Prepared by Plant Biosecurity and Horticulture and Forestry Science

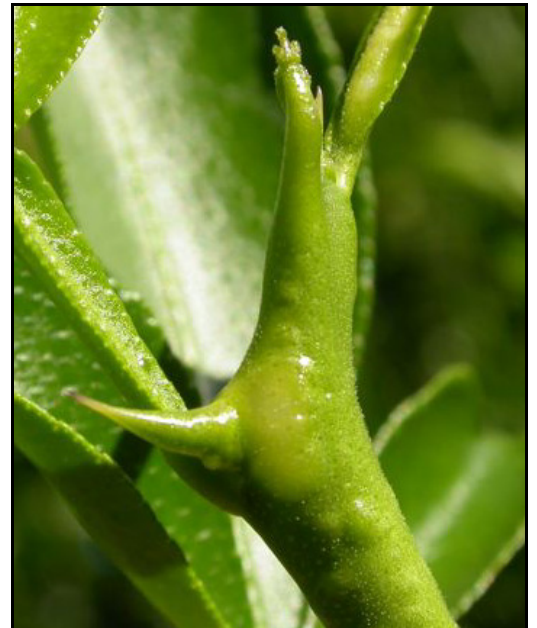
### Background

In March 2007, samples of citrus rootstock twigs with unusual insect damage were collected by a crop consultant from a property in the Central Burnett region of Queensland and sent to DPI&F for diagnosis.

Affected twigs had soft, raised, spherical swellings externally, with numerous small white larvae inside.

A single wasp reared from the infested twigs resembled the native citrus gall wasp (CGW), *Bruchophagus fellis*, however, the damage symptoms and larvae were sufficiently different from CGW to raise concern that this may be an exotic pest or a native species not previously associated with citrus.

Wasps reared from infested twigs were identified by CSIRO to be from the genus *Eurytoma*, but the species could not be determined. Other *Eurytoma* species have previously been noted on native citrus in New South Wales, however this is the first time a species of this genus has been reported on citrus in Queensland.



### What is being done?

DPI&F is working with citrus consultants to establish the distribution of the wasp in Queensland and the varieties attacked. DPI&F is also working with CSIRO to identify the wasp and to determine if it is a new species or a native that has changed its normal host preference as a result of conditions such as drought.

**We need your help to report damage symptoms on citrus similar to the images in this DPI&F note. Please see below for information on how to report.**

### What types of plants are affected?

To date, damage on twigs, thorns, soft terminal growth and the bases of midribs and petioles has been noted mostly on field grown troyer citrange rootstocks or regrowth beneath unthrifty scions. It has also been detected on a single Calamondin tree, a Meyer lemon and in sweet orange rootstocks. Surveys of citrus orchards in proximity to known detections have not revealed damage to scion material or fruit.

### How does *Eurytoma* damage differ from citrus gall wasp?

Citrus gall wasp causes distinctive woody galls on citrus, even when only a single larva is present. Galls can be more than 25 cm long and contain hundreds of larvae in distinct circular cells; gall size is directly correlated with the number of larvae present. CGW has a single generation each year; the short lived adults emerge in October and oviposit into soft spring growth twigs, thorns and petioles. Larvae over-winter in the first instar and rapidly complete development in early spring. CGW attacks all citrus varieties, but there are clear differences in susceptibility. Rough lemon and troyer citrange rootstocks are very susceptible; grapefruit is the most susceptible cultivated variety. Lemons and oranges can be affected; mandarins are the least susceptible.

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**Note No:**  
ISSN 0155 – 3054  
**Created:** July 2007  
**Revised:**  
No of pages (2)

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Produced by: Biosecurity Queensland and Delivery Business Groups

By comparison, the recently reported *Eurytoma* sp. causes soft, irregularly shaped, non-woody galls; its larvae do not occur in circular cells and it can complete several generations per year. The galls of *Eurytoma* sp. occur on leaves, midrib bases, petioles and twigs. Affected thorns are shortened, swollen & distorted. The larvae and their tunnels are more elongate than those of citrus gall wasp. Significant damage appears to be restricted to field grown rootstock seedlings.

Emergence holes associated with *Eurytoma* sp. galls or swellings can be apparent at ~20 cm intervals on stems in which several generations of the wasp have been completed. Heavy infestation of soft terminal tissue causes cessation of growth, poor graft performance, and production of regrowth shoots below damaged areas; the worst affected twigs break off just below the growing point.



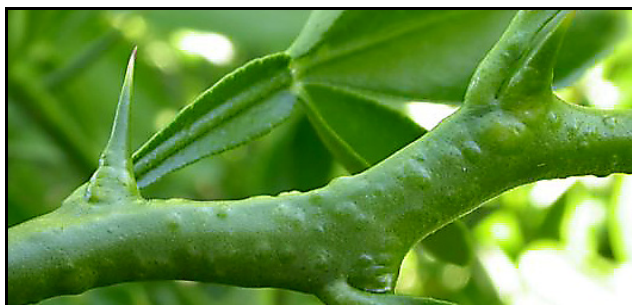
Wasp emergence hole and typical soft spherical swellings or galls on a Troyer seedling twig.

Photo: Dan Papacek, Bugs for Bugs, Mundubbera.



Heavily infested Troyer regrowth twigs broken off by the wind.

Photo: Paul Slattery, Biosecurity Queensland.



Troyer rootstock seedling showing soft galls and a swollen thorn base on soft autumn growth caused by *Eurytoma* sp.

Photo: Dan Papacek, Bugs for Bugs, Mundubbera.



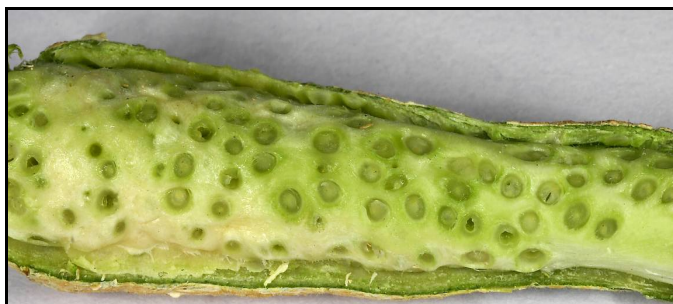
Hardened, woody gall on pommelo caused by the native citrus gall wasp (CGW), *Bruchophagus fellsis*.

Photo: Chris Freebairn, Horticulture & Forestry Science.



*Eurytoma* sp. larvae tunneling in a Troyer seedling twig.

Photo: Dan Papacek, Bugs for Bugs Mundubbera.



A large CGW gall on pommelo containing numerous larvae in their characteristic circular woody cells.

Photo: Chris Freebairn, Horticulture & Forestry Science.

## Need more information or want to report symptoms?

The DPI&F wishes to determine the distribution of the new wasp and to assess the extent of damage caused by it to both rootstock and scion material. To report suspicious damage, or for more information contact the DPI&F Business Information Centre on **13 25 13**. ■