

# EPPO Datasheet: *Gonipterus scutellatus* species complex

Last updated: 2021-10-19

## IDENTITY

**Preferred name:** *Gonipterus scutellatus* species complex

**Taxonomic position:** Animalia: Arthropoda: Hexapoda: Insecta: Coleoptera: Curculionidae: Gonipterinae

**Common names:** eucalyptus snout beetle, eucalyptus weevil, gum-tree weevil

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**EPPO Categorization:** A2 list

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**EU Categorization:** PZ Quarantine pest (Annex III)

**EPPO Code:** GONPSC



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## Notes on taxonomy and nomenclature

This pest has a history of taxonomic confusion (Schröder *et al.*, 2021). *Gonipterus scutellatus*, once thought to be a single species, is recognized as part of a cryptic species complex comprising at least eight different species (*G. balteatus*, *G. platensis*, *G. pulverulentus*, *G. scutellatus*, *Gonipterus* sp. n. 1–4) (Mapondera *et al.*, 2012; Schröder *et al.*, 2021). Three species within the *G. scutellatus* complex are invasive pests: *G. platensis*, *G. pulverulentus* and *Gonipterus* sp. n. 2. *G. scutellatus* has not been recorded outside of its native range (Tasmania).

## HOSTS

Many species of *Eucalyptus* have been reported as hosts of *Gonipterus* with varying degrees of susceptibility (Mally, 1924; Tooke, 1955; Richardson & Meakins, 1986; Newete *et al.*, 2011). The most susceptible species are *E. camaldulensis*, *E. globulus*, *E. maidenii*, *E. punctata*, *E. robusta*, *E. smithii*, *E. viminalis*, *E. dunnii*, *E. ovata*, *E. urophylla*, and *E. grandis*. Host associations vary between species of *Gonipterus* (Garcia *et al.*, 2019; Souza *et al.*, 2021; Schröder *et al.*, 2021). A recent study in Tasmania found *G. platensis* and *G. pulverulentus* have similar host associations, mainly occurring on *E. ovata* and small numbers of *G. platensis* were recorded from *E. globulus* and *E. viminalis* (Garcia *et al.*, 2019). *E. smithii*, *E. grandis*, *E. urophylla* and *E. viminalis* were found to be amongst the most susceptible *Eucalyptus* species for *Gonipterus* sp. n. 2 in South Africa (Newete *et al.*, 2011).

Within the EPPO region *Eucalyptus* spp. are economically important hosts.

**Host list:** *Eucalyptus amplifolia*, *Eucalyptus amygdalina*, *Eucalyptus benthamii*, *Eucalyptus blakelyi*, *Eucalyptus bosistoana*, *Eucalyptus bridgesiana*, *Eucalyptus camaldulensis*, *Eucalyptus cinerea*, *Eucalyptus conspicua*, *Eucalyptus cornuta*, *Eucalyptus crenulata*, *Eucalyptus dalrympleana*, *Eucalyptus deanei*, *Eucalyptus dunnii*, *Eucalyptus exserta*, *Eucalyptus foecunda*, *Eucalyptus globulus*, *Eucalyptus goniocalyx*, *Eucalyptus grandis*, *Eucalyptus lehmannii*, *Eucalyptus longicornis*, *Eucalyptus longifolia*, *Eucalyptus loxophleba*, *Eucalyptus macarthurii*, *Eucalyptus maidenii*, *Eucalyptus major*, *Eucalyptus mannifera* subsp. *maculosa*, *Eucalyptus melanophloia*, *Eucalyptus melliodora*, *Eucalyptus microcorys*, *Eucalyptus microtheca*, *Eucalyptus morrisbyi*, *Eucalyptus nicholii*, *Eucalyptus nitens*, *Eucalyptus obliqua*, *Eucalyptus occidentalis*, *Eucalyptus ovata* subsp. *ovata*, *Eucalyptus ovata*, *Eucalyptus pauciflora*, *Eucalyptus platypus* subsp. *platypus*, *Eucalyptus propinqua*, *Eucalyptus pulchella*, *Eucalyptus punctata*, *Eucalyptus radiata*, *Eucalyptus redunca*, *Eucalyptus robusta*, *Eucalyptus rubida*, *Eucalyptus scoparia*, *Eucalyptus smithii*, *Eucalyptus tereticornis*, *Eucalyptus urnigera*, *Eucalyptus urophylla*, *Eucalyptus viminalis*, *Eucalyptus x kirtoniana*

## GEOGRAPHICAL DISTRIBUTION

The *G. scutellatus* species complex originates in south-eastern Australia and has spread with its hosts to many parts



## Symptoms

The adult beetles feed on the edges of the leaves resulting in a characteristically scalloped appearance. The larvae feed on the epidermis and mesophyll of the young leaves causing tracks the width of the larvae in the leaves and mature larvae will consume entire leaves. Feeding damage results in defoliation of the tree crown, dieback of shoot tips and development of tufts of epicormics. Successive defoliations produce stunting and a stag-headed appearance. Trees may split and die. Adults tend to feed on the leaves and soft bark of young shoots while larval damage occurs on the leaves alone (Moutia & Vinson, 1945; Kevan, 1964; Leyva, 1969; 1970).

## Morphology

### *Eggs*

Egg capsules are grey to brown containing clusters of yellow eggs. An egg capsule contains four to sixteen eggs, attached to the leaves on both surfaces (Mally, 1924; Tooke, 1955). The egg capsules vary in size and measure 1 - 3 mm in length, 1 – 1.5 mm in width and 1 - 2 mm in height (Tooke, 1955).

### *Larva*

The head of the larvae is black and the body is yellowish-green with black shield like spots on each segment and dark lateral stripes. Larvae are covered in a sticky slime (Tooke, 1955. EFSA, 2018).

### *Adult*

A 7.5 - 9.4 mm grey-brown weevil, with a black x-shaped marking on the elytra and a white scutellar stripe, often extending to the head (Tooke, 1955; EFSA, 2018). These markings may fade with the age of the beetle and vary between species.

## Detection and inspection methods

Visual inspection of leaf material for the presence of feeding damage, egg capsules or larvae.

Identification up to genus level can be done using morphological characteristics. The morphology of the male genitalia and DNA barcoding techniques are used for species identification (Mapondera *et al.*, 2012).

## PATHWAYS FOR MOVEMENT

The main pathways of entry are natural spread by flight, trade in *Eucalyptus* timber and trade of plants for planting and cut branches for floral arrangements and hitchhiking (EFSA, 2018). Adults, larvae and eggs may be carried on planting material. Larvae and pupae could be present in accompanying soil. Hitchhiking on apple consignments imported into South Africa from Australia has been suggested as a pathway for movement (EFSA, 2018, citing Mally, 1924; Clark, 1931; Tooke, 1955). In Australia and New Zealand, infestations of apple orchards by adults necessitates the need for control measures before the commodity is exported (EFSA, 2018).

## PEST SIGNIFICANCE

### Economic impact

In its introduced range, this pest has become an important defoliator of *Eucalyptus* causing significant reduction in wood production and tree death (Tooke, 1955; Williams *et al.*, 1951). Damage to *Eucalyptus* plantations have been significantly reduced due to the introduction of the biological control agent *Anaphes nitens* (Tooke, 1955; Hanks *et al.*, 2000). Despite the initial success of the biological control program for this pest it remains an important economic pest with outbreaks sporadically observed in many *Eucalyptus* producing countries (Tooke, 1955; Loch *et al.*, 2006;

Reis *et al.*, 2012). Defoliation of the upper crown reduces stem growth and can result in merchantable wood loss of up to 86 % over a ten-year growing period (Reis *et al.*, 2012). The eucalyptus snout beetle continues to spread and has recently invaded Colombia (Rodas, 2018) and Rwanda (Schröder *et al.*, 2021).

## Control

The biological control agent *A. nitens* has been released globally as a control measure against the eucalyptus snout beetle. Successful control with *A. nitens* is claimed in France and Italy (Cadahia, 1986). In addition to *A. nitens*, *A. tasmaniae* was released in Chile and *A. inexpectatus* in Portugal and Spain (Mayorga, 2013; Valente *et al.*, 2017).

Chemical treatment is not recommended because of low efficacy, adverse environmental effects and increased production cost (EFSA, 2018).

## Phytosanitary risk

The *G. scutellatus* species complex is considered a phytosanitary risk to the EPPO region due to its polyphagous feeding habits and economic damage associated with feeding. Severe defoliation of hosts can reduce the volume of wood that can be sold. In the EPPO region, countries such as Spain have large productive *Eucalyptus* plantations. *E. globulus* is the dominant species in northern and north-western Spain.

In the EPPO region, the *G. scutellatus* species complex poses a threat to *Eucalyptus* plantations.

## PHYTOSANITARY MEASURES

Phytosanitary measures are in place for the trade of plants. Countries importing propagating material and cut branches of *Eucalyptus* have to ensure the consignment is free from soil and has been subjected to a treatment against *G. scutellatus* species complex, or that it comes from an area where *G. scutellatus* species complex does not occur. Countries may require a phytosanitary certificate for cut branches of *Eucalyptus*.

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## Datasheet history

This datasheet was first published in the EPPO Bulletin in 1980, revised in the two editions of 'Quarantine Pests for Europe' in 1992 and 1997, revised again in 2005, as well as in 2021. It is now maintained in an electronic format in the EPPO Global Database. The sections on 'Identity', 'Hosts', and 'Geographical distribution' are automatically updated from the database. For other sections, the date of last revision is indicated on the right.

EPPO (2005) Data sheets on quarantine pests - *Gonipterus gibberus* and *Gonipterus scutellatus*. *EPPO Bulletin* **35** (3), 368-370. <https://doi.org/10.1111/j.1365-2338.2005.00855.x>

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