

# Exotic Pest Alert: Cotton boll weevil

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Plant Biosecurity & Product Integrity, Orange

Cotton boll weevil (*Anthrenus grandis*) is an exotic plant pest **not present in Australia**

This insect pest is a serious threat to Australia's **cotton industry**

If found it must be reported promptly to the Exotic Plant Pest Hotline **1800 084 881**

## Cotton boll weevil

Cotton boll weevil, also known as Mexican cotton boll weevil, is a major pest of cotton. Cotton boll weevils cause damage to cotton buds (squares) and fruiting bodies (bolls) through feeding, egg laying and larval development. Damage caused has significant impacts on the yield and quality of cotton crops.

There are native weevil species found in Australia that may look similar to cotton boll weevil. However, not one of the Australian species is known to attack cotton. Any weevils found causing damage to cotton crops should be reported immediately.

## Description

### Adults

Adult cotton boll weevils are grey-brown in colour with short, fine hairs covering the body. Adults grow to 5 mm in length, excluding the rostrum (snout) which is an additional 3 mm long, slightly curved and cylindrical (Figure 1). A distinctive characteristic of adult cotton boll weevil is the double-toothed spur on the inner surface of each front leg.

### Immature stages

Larvae are white, legless grubs with a brown head and mouthparts. Larvae grow to 13 mm in length and are found inside cotton squares and bolls (Figure 2).



Figure 1 Adult *Anthrenus grandis* on cotton



Figure 2 *Anthrenus grandis* larva in cotton

## Damage

Adult cotton boll weevil feeds on all parts of a plant, causing leaf wilt and physical damage to flowers, buds and new growth.

In addition to feeding, females cause further damage by laying their eggs inside cotton squares and bolls. Puncture marks from egg deposits are covered with a sticky secretion that hardens on the surface of the square or boll and can be easily seen and felt.

When the eggs hatch, the weevil larvae cause damage by burrowing into the centre of the bud to feed.

Squares and bolls containing eggs and developing larvae discolour and are often dropped from the plant. Cotton bolls that remain on the plant will fail to open properly and may be subject to boll rot. The overall impact is a severe reduction in yield due to the abortion of squares and bolls. What little cotton is produced from infested bolls is of inferior quality.

## Lifecycle

There are four stages in the lifecycle of the cotton boll weevil: egg, larvae, pupae and adult. Females start to lay eggs in early spring. Eggs hatch within 3–5 days and larvae feed for over a week within the bud or boll before forming into pupae.

When adults emerge, they feed for 3–7 days before mating. Females can lay around 200 eggs in a 10–12 day period.

The lifecycle is repeated until plants are harvested or flowering is over. Adults will overwinter in nearby leaf litter or alternative host species before returning to crops the following spring.

High temperatures and high humidity speed up the lifecycle while low temperatures slow development. Under favourable conditions the lifecycle is completed within 2½ to 3 weeks.

## Host range

The principal hosts of cotton boll weevil are commercial cotton and wild type cotton (*Gossypium* species). Many other, closely related plant species, such as hibiscus, are also favourable hosts for cotton boll weevil. Additional hosts include various grasses, mesquite and Lindheimer pricklypear.

## Spread

Infested cotton seeds or bolls can transport eggs and larvae of cotton boll weevil over long distances. Adults can be carried on contaminated raw cotton.

Adult weevils spread over short distances by flying. Under normal conditions, adult weevils can fly between crops within 40km. Strong winds may disperse flying adult weevils up to 72 km.

## Distribution

Cotton boll weevil is native to Central America where it most likely originated in southern Mexico and Guatemala.

Cotton boll weevil has since spread to the United States, Venezuela, Columbia, Brazil, Paraguay and Argentina.

## Actions to minimise risk

Put in place biosecurity best practice actions to prevent entry, establishment and spread of pests and diseases:

- practice “Come clean, Go clean”
- ensure all staff and visitors are instructed in and adhere to your business management hygiene requirements
- monitor your crops regularly
- keep records

## Reporting

If you suspect cotton boll weevil:

Call the Exotic Plant Pest Hotline on **1800 084 881**

Take photos not samples to minimise the risk of spreading this pest

Email clear photos with a brief explanation and contact details to [biosecurity@dpi.nsw.gov.au](mailto:biosecurity@dpi.nsw.gov.au)

An **exotic plant pest** is a disease causing organism or an invertebrate **not present in Australia** and which threatens agricultural production, forestry or native and amenity plants.

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Figure 1 courtesy of Alton N. Sparks, Jr., University of Georgia, Bugwood.org

Figure 2 courtesy of James Smith, Mississippi State University, Bugwood.org

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