



From Endemics to Exotics

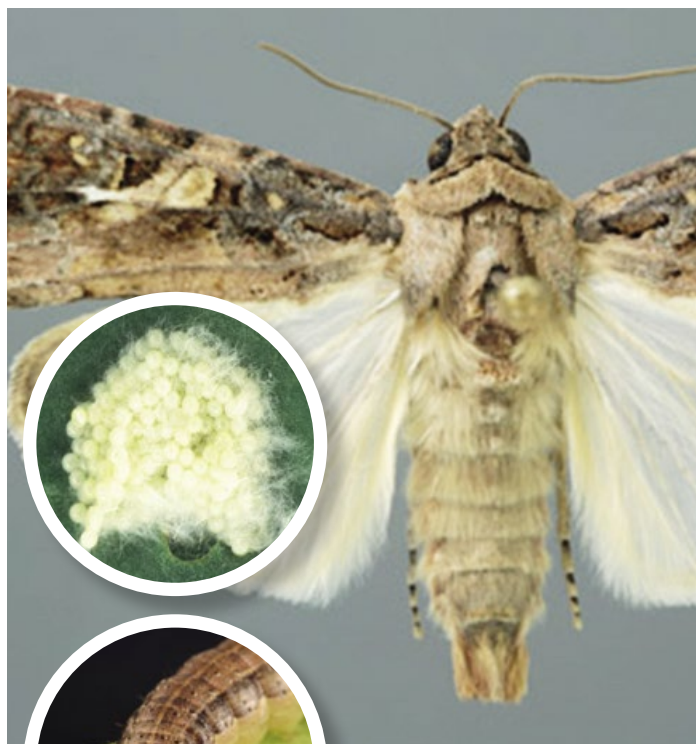
Identifying cluster caterpillar, northern armyworm and fall armyworm

Proper identification is important for knowing if the insect in your field is of economic importance. The correct identification of a pest allows for:

- Appropriate management practices to be implemented, and
- Early identification and detection of potential exotic pests, enabling successful containment and eradication programs.

Key features of a pest throughout its lifecycle can assist with making a correct identification. While a photo is worth a thousand words, ensuring you read the text description of symptoms and visual appearance can help differentiate between similar looking appearances.

If you suspect you have detected fall armyworm, contact the Exotic Plant Pest Hotline.



Fall armyworm can damage and destroy a wide variety of crops, and is an exotic pest with recent detections in Australia.

**EXOTIC PLANT PEST HOTLINE
1800 084 881**




| Common name | Cluster caterpillar | Northern armyworm | Fall armyworm |
|------------------------|---|---|---|
| | Also known as Cotton leafworm and Tobacco cutworm | Northern armyworm can often be confused with the common armyworm due to very similar appearance, lifecycle, damage, monitoring and control methods. | Can often be confused with <i>Helicoverpa spp.</i> and with other <i>Spodoptera spp.</i> |
| Scientific name | <i>Spodoptera litura</i> | <i>Mythimna separata</i> | <i>Spodoptera frugiperda</i> |
| Distribution | Across Australia | Across Australia | Exotic pest: Fall armyworm has recently been detected in Australia. Native to tropical and sub-tropical areas of Americas. It has since spread across two continents and over 60 countries in just under three years. |
| Hosts | Broad host range including cotton | Sorghum, maize, barley, wheat and rice | Almost 100 plant species are known hosts including cotton |

Talk to your agronomist or the Department of Agriculture in your State for more information on identification or management.



Egg identification




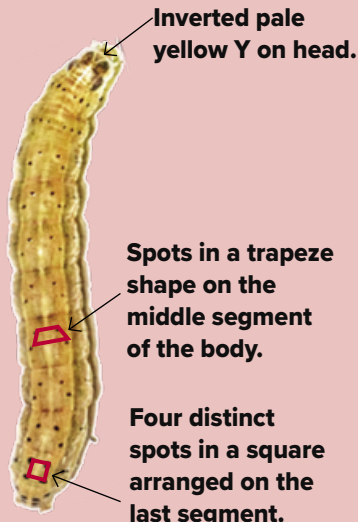

Eggs will become darker in appearance with age.

| Cluster caterpillar | Northern armyworm | Fall armyworm |
|---|--|--|
| <ul style="list-style-type: none"> Eggs are laid in clusters of up to 300 eggs. Pale pink to cream coloured eggs. Clusters are covered in a layer of pale-brown 'furry' hair-like scales.  <p>Covered in hair like scales</p> <p>(P. Grundy, Queensland Department of Agriculture and Fisheries)</p> | <ul style="list-style-type: none"> Milky white to light brown coloured eggs.  <p>(ICAR Research Complex: Firake DM et al 2019)</p> | <ul style="list-style-type: none"> Laid in clusters of up to 200 eggs. Creamy coloured eggs. Clusters covered in layers of grey-ish 'furry' hair-like scales.  <p>Covered in hair like scales</p> <p>(James Castner, University of Florida)</p> |

Larvae identification

Scale: 50 mm







Larval colouring is difficult to use for identification as larvae come in different colours and colouring changes with development. Mature larvae are required for identification by appearance.

| Cluster caterpillar | Northern armyworm | Fall armyworm |
|---|---|--|
| <ul style="list-style-type: none"> • Up to 50mm in length • Mature larvae: <ul style="list-style-type: none"> – Three pale yellow/orange lines run down the length of the body. – Row of black dots along each side of the body. – Row of half-moon shapes along the back.  <p>(Grundy P, Queensland Department of Agriculture and Fisheries)</p> | <ul style="list-style-type: none"> • Up to 40mm in length. • Mature larvae: <ul style="list-style-type: none"> – Three white stripes on the 'collar' behind the head and along the entire body  <p>(ICAR Research Complex: Firake DM et al 2019)</p>  <p>(Queensland Department of Agriculture and Fisheries)</p> | <ul style="list-style-type: none"> • Up to 40mm in length. • Mature larvae: <ul style="list-style-type: none"> – White and dark stripes run down the length of the body. – Dark spots with hairs occur all over the body. – Pale yellow inverted 'Y' on the head. – Spots in a trapeze arrangement on middle segments of the body. – Four larger distinct spots in square arrangement on the last segment of the body.  <p>(Firake DM, ICAR Research Complex)</p>  <p>(Buss J.L., University of Florida)</p> |

Moth identification

All species' moths have a wingspan of up to 40mm.

Scale: 40 mm

| Cluster caterpillar | Northern armyworm | Fall armyworm |
|--|--|--|
| <ul style="list-style-type: none"> Brown forewings with brown, red and dark grey markings <ul style="list-style-type: none"> Silvery/light coloured marbling patterns Hindwings are white and partly translucent <ul style="list-style-type: none"> Brown edge <div style="display: flex; flex-direction: column; align-items: center;"> <div style="display: flex; align-items: center; margin-bottom: 10px;">  <div style="margin-left: 10px;"> <p>Male</p> <p>Patterned forewings with light marbling</p> </div> </div> <div style="display: flex; align-items: center;">  <div style="margin-left: 10px;"> <p>Female</p> </div> </div> </div> <p>(J-F Germain, Anses, FR)</p> | <ul style="list-style-type: none"> Fawn or light brownish yellow colour. <div style="display: flex; align-items: center; justify-content: center;">  </div> <p>(Holman S, Queensland Department of Agriculture and Fisheries)</p> | <ul style="list-style-type: none"> Male forewings are mottled grey and light brown with a white-cream mark at the tip and near the centre of the wings Females have grey-brown forewings <div style="display: flex; flex-direction: column; align-items: center;"> <div style="display: flex; align-items: center; margin-bottom: 10px;">  <div style="margin-left: 10px;"> <p>White cream mark at tip and near centre of wing</p> </div> </div> <div style="display: flex; align-items: center; margin-bottom: 10px;">  <div style="margin-left: 10px;"> <p>Male</p> <p>Males have mottled forewings</p> </div> </div> <div style="display: flex; align-items: center;">  <div style="margin-left: 10px;"> <p>Female</p> </div> </div> </div> <p>(Buss L.J, University of Florida)</p> |

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Acknowledgement to Queensland Department of Agriculture and Fisheries, CSIRO Health & Biosecurity, Bayer, Northern Australia Quarantine Strategy (NAQS), Plant Health Australia and Northern Territory Department of Primary Industry and Resources for their contributions.

For detailed references, please visit the CottonInfo website, www.cottoninfo.com.au