Familiarity with fall armyworm eggs — Quick guide

Becoming familiar with fall armyworm (FAW) egg masses to support timely integrated pest management (IPM) decisions.

Introduction

Fall armyworm (FAW) (*Spodoptera frugiperda*) is a major pest of horticultural and broadacre crops in Australia, with the highest and most consistent pest pressure in tropical and subtropical regions, migrating into southern regions over summer. Key hosts are sweet corn, maize, and sorghum, as well as a wide variety of crops, including millet, capsicum, and ginger (just to name a few). FAW has very low economic thresholds in high-value (per Ha) crops because it can remove seedlings or cause serious downgrading from direct fruit damage.

Why is egg detection important?

- Monitoring for egg masses provides an early indication of likely FAW presence.
- Recognising the stages of egg development indicates the time for neonates to hatch. Insecticides are more effective if applied when most larvae are hatching.
- Realising a lack of eggs (from scanning and searching plants) and larvae (from destructive plant searches) can avoid unnecessary insecticide applications.
- Avoiding insecticide applications, maximises the effectiveness of beneficial insects and minimises the selection pressure for insecticide resistance.

What do FAW eggs look like?

- **Egg colour and size:** Actual eggs, as opposed to fuzzy covering, appear white when freshly laid, gradually turn light brown for a day or two and then black several hours before hatching. Each egg is less than 0.5 mm in diameter.
- **Egg covering:** Fuzzy white to brown scales from the female abdomen, giving a soft, cottony appearance. Not all egg masses are covered with fuzz but you might need to lightly brush away the scales to see the colour of the eggs.
- **Arrangement:** Typically laid in masses of 20 to 200 eggs, almost never singly but can be much larger (~ 500), and in a lattice of rows of one to three layers deep.
- **Location:** Predominantly on the underside of lower leaves of seedlings and young plants, but will also be found on the upper surface, and occasionally on stems, weeds, or nearby host plants. Although difficult to find, eggs are laid on later stages of maize and sweet corn right up to harvest.
- **Hatching:** Eggs hatch within 2–4 days under warm conditions.

May be confused with other Spodoptera species

- FAW egg masses can closely resemble those of the cluster caterpillar (*Spodoptera litura*) and lawn armyworm (*Spodoptera mauritia*).
- Similarities are mainly due to their clustered arrangement and the presence of similarly coloured scale covering.

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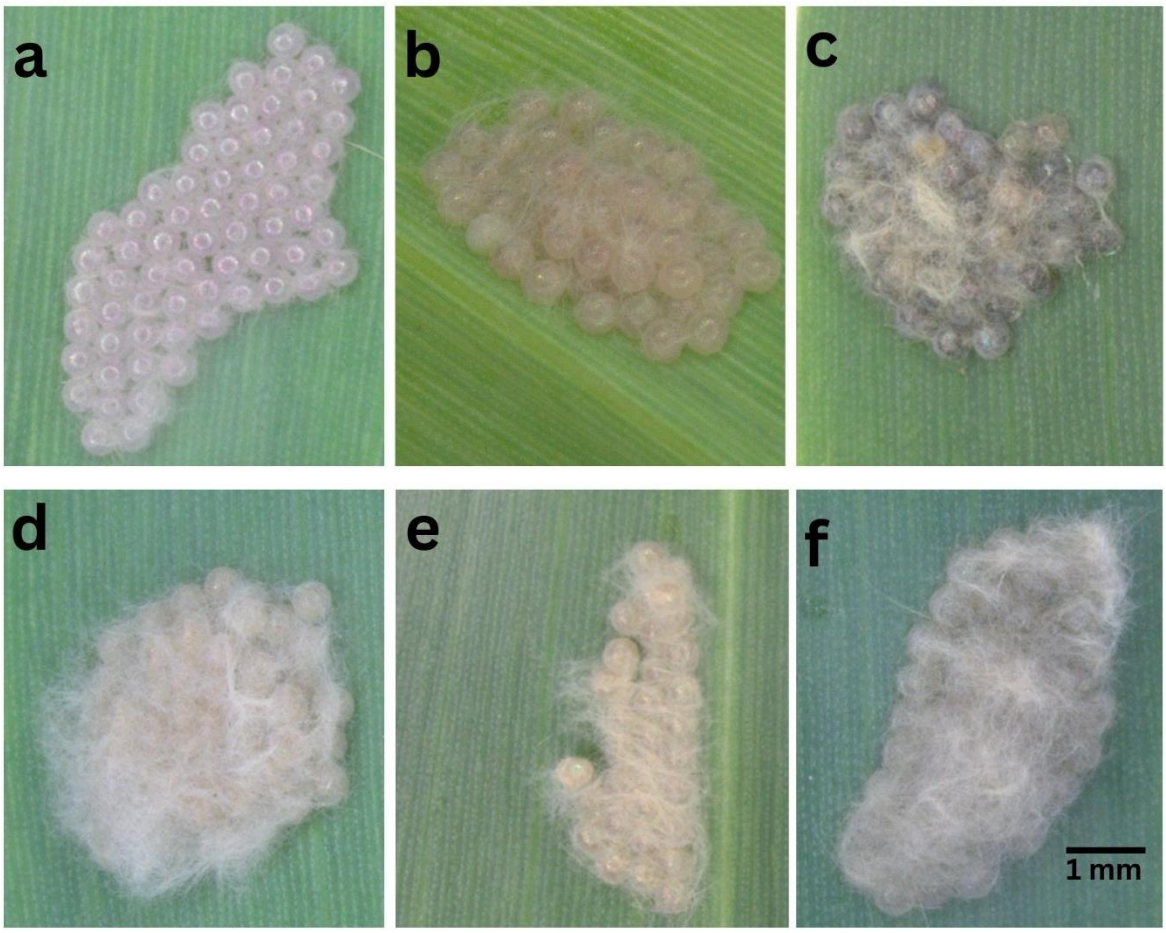

Images show FAW egg masses collected from a sweet corn field and examined under a microscope, illustrating the characteristic clustered arrangement and protective scale covering of field-laid eggs. Images **a to c** and **d to f** demonstrate the progression of eggs from early to later developmental stages, with egg colour changing from white to brown and then to black as development progresses. Hair-scales remain white to fawn.

(a) White eggs with scales manually brushed off; eggs are clearly visible and white. (b) Brown eggs with a light scale cover. (c) Black eggs with a light scale cover. (d) White eggs with a heavy scale cover. (e) Light brown eggs with a light scale cover. (f) Dark eggs with moderate scale cover; egg colour is partly obscured by scales. Gently dusting off the scale cover may be required to assess egg colour and developmental stage. Scale bar = 1 mm.

Disclaimer

This document is a general guide towards recognising fall armyworm eggs. Currently, identification is not possible, based on only visual characters due to similarities with other species and natural variation in colouration. Information should be used alongside professional advice, local experience and, where needed, laboratory confirmation. The Department of Primary Industries (Queensland) and collaborators accept no liability for decisions made based on this guide.

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