Fall Armyworm: Identifying & treating this new exotic pest

In January 2020, Fall Armyworm was first detected in Australia on two Torres Strait islands, followed by a mainland detection at Bamaga in February 2020. It has since been detected at numerous sites in Queensland including Croydon, South Johnstone, Tolga, Lakeland, Bowen, the Burdekin region, Bundaberg, Emerald, Richmond, Clermont, Biloela, Dysart and Mackay, as well as Katherine in the Northern Territory and as far south as Carnarvon in Western Australia.

The Consultative Committee on Emergency Plant Pests has determined that it is not technically feasible to eradicate fall armyworm from Australia. It has never been eradicated anywhere else in the world.

Fall Armyworm moves and reproduces fast, and feeds on a very wide range of plants. It is well established in our nearest neighbours and could be continually reintroduced. Fall Armyworm is most likely found in warm, moist regions with little forest cover.

Identification

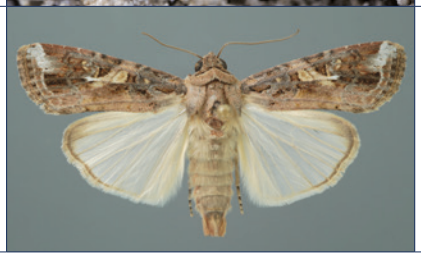
EGGS **2 – 3 days**		• Pale yellow and clustered together in a mass • Egg measures about 0.4 mm in diameter and 0.3 mm in height • An egg mass can contain 100 to 200 eggs • Egg masses are usually attached to foliage in a mound, with a silk-like furry substance • Duration of the egg stage is only two to three days during the summer months
LARVAE **14 – 22 days**		• There usually are six instars in fall armyworm • Larvae range from 1.7 mm in 1st instar to 34.2 mm in final instar • As they develop, they become a darker greyish-brown with white lengthwise stripes and dark spots with spines on their upper surface, with a pale underside • Older larvae have a distinctive pattern of 4 spots on the second to last body segment & an inverted 'Y' shape pattern on their heads
PUPAE **7 – 13 days**		• Pupation normally takes place in the soil, at a depth 2 to 8 cm • The larva constructs a loose cocoon, oval in shape and 20 to 30 mm in length, by tying together particles of soil with silk • If the soil is too hard, larvae may web together leaf debris and other material to form a cocoon on the soil surface • The pupa is reddish brown in colour, and measures 14 to 18 mm in length and about 4.5 mm in width
ADULTS **10 – 21 days**		• Moth, 15 to 20mm with a 32 to 40mm wingspan • Brown or grey forewing and a white hind wing • Male fall armyworm moths have more patterns and a distinct white spot on each forewing

Table1. Management and Control

Permit ID	Description	Date Issued	Expiry Date	Permit holder
PER89353	Chlorantraniliprole (Coragen, Altacor Hort Insecticide) / Rubus spp., Tree nuts (except almonds). Strawberries, Parsley, Root and tuber vegetables (except potatoes) / Fall Armyworm	5 May 2020	31 May 2023	Hort Innovation
PER89293	Methomyl / Various Fruit, Nuts, Vegetables, Turf and Non-bearing Ornamentals / Fall Armyworm	10 April 2020	30 April 2023	Hort Innovation

Damage

- larvae initially feed on leaves, creating pinholes and windows in leaf tissue, and giving leaf margins a tattered appearance
- larvae can also eat buds & tunnel into & feed on fruit
- larger larvae can cut plants off at the base
- when they are found in large numbers, they can defoliate preferred host plants and acquire an 'armyworm' habit and disperse in large numbers
- For photos, webinars and further information about this pest visit: https://bit.ly/FAWQld or https://bit.ly/FAW-WA

Biosecurity and reporting

- Growers should have in place on-farm biosecurity measures to protect their crops from pests and diseases. More information is available at farmbiosecurity.com.au
- Queensland - Industry and agronomists are encouraged to report any unexpected symptoms in the field by phoning DAF on 13 25 23 or visit https://bit.ly/FAWQld for more information
- Western Australia - to report suspected armyworm damage to DPIRD's Pest and Disease Information Service on 08 9368 3080 or email padis@dpird.wa.gov.au or visit https://bit.ly/FAW-WA for more information

Management and control

- Early detection is essential. Regularly check all your crops for unusual insect activities.
- It is essential with any pesticide use for Fall Armyworm control that the implications for chemical resistance development in other pests that may be exposed are considered (e.g. Helicoperva), and the potential impact on natural enemies.
- Fall armyworm is known to rapidly develop pesticide resistance.
- The APVMA has issued a number of permits for the use of certain chemicals for the control of Fall Armyworm (Table 1).

All efforts have been made to provide the most current, complete and accurate information on these permits, however we recommend that you confirm the details of these permits at the following APVMA website: https://portal.apvma.gov.au/permits

Users are advised that while the pesticide can be applied legally under the APVMA minor use permit there can be a significant delay until the MRL gazetted by the APVMA is adopted in the Australia New Zealand Food Standards Code.

Until this occurs the MRL may not be recognised and a zero tolerance may be imposed for residues of the pesticide resulting from its use according to the APVMA permit.

Please be aware that in the absence of an MRL in the Food Standards Code, the use of the pesticide according to the permit may result in the suspension of the produce in the marketplace.

Please check the FSANZ website or the Australian Government ComLaw website: https://www.legislation.gov.au/Series/F2015L00468 to confirm if there are MRL established by the Australia New Zealand Food Standards Code.

Photo credits:

Eggs - James Castner, University of Florida
Larvae - Lyle Buss, University of Florida
Pupae - Matt Edmonds (BUGGUIDE, 2009)
Adults - Lyle Buss, University of Florida