In the Americas pesticides and genetically modified (GM) crops are the main methods of control, although FAW has developed some resistance to both. The effective use of susceptible “refuge” crops can reduce the risk of resistance developing.

Cultural Control Practices

Use of appropriate planting practices is advisable to avoid late and off season planting thus allowing maize to mature before high pest population build up. Mechanical control by deep ploughing during land preparation to expose the pupae to predators and solar heat is recommended; early land preparation is vital. Monitoring and early detection by frequent scouting in maize fields to detect larvae and symptoms of damage early enough for quick action. Mass trappings by setting-up fall armyworm pheromone traps to suppress moth population can lead to reduction in laid eggs and resultant larvae. Pheromone traps can also be used for monitoring and early warning.

Remove and destroy all crop residues. Rotate maize with non-host crops.

Biological control

Classical (introduction) biological control provides another option for control and the research fraternity is busy with the investigations on the best possible option. Virus based biopesticides available in the Americas may offer a low-risk option, but are not yet registered in Africa, and again may be expensive for many farmers.

Rearing and release of parasitoids: Rearing and repeated release of large numbers (tens/hundreds of thousands) of parasitic wasps can be another option for control.

Legislative implications

FAW is regulated in terms of the Agricultural Pests Act, 1983 (Act No. 36 of 1983), Regulation R. 449 of 26 May 2017 (Control Measures relating to FAW). These Control Measures will assist in the control and management of the FAW infested areas and maintenance of pest free areas to ensure sustainable agriculture and production. According to this regulation, every user of land within the Republic shall immediately notify the executive officer and/or authority of any occurrence or suspected occurrence of FAW.

Sources of information

1. ARC, DAFF, READ and North West University, 2017. Fall armyworm - An identification guide in relation to other common caterpillars, a South African perspective.

2. ARC, DAFF & North West University, 2017. Fact sheet: The new invasive Fall armyworm (FAW) in South Africa.

3. http://www.kalro.org/arlri/sites/default/files/Inter-im_Recomendations_for_Management_of_Fall_Armyworm_in_Kenya.pdf

4. http://www.invasive-species.org/Uploads/InvasiveSpecies/-FAW-inception-report.pdf

Please do not import plants and plant products into South Africa without authorization.

To report occurrence of the pest contact:	*For awareness enquiries contact:*	*For identification of the pest contact:*
Directorate: Plant Health Division: Early Warning Systems Tel: 012 319 6384/ 6104 Email: JanHendrikV@dalrrd.gov.za	Directorate: Food Import & Export Standards Division: Plant Health Promotion Tel: 012 319 6295/ 6475 Email: Info.sps@dalrrd.gov.za	Directorate: Inspection Services Division: Diagnostic Services Tel: 012 319 6377/ 021 809 1644 Email: MmatlalaM@dalrrd.gov.za or WelmaP@dalrrd.gov.za

Fall Armyworm (FAW)

Spodoptera frugiperda

agriculture, land reform & rural development

Department:
Agriculture, Land Reform and Rural Development
REPUBLIC OF SOUTH AFRICA

Pest description and host range

Fall Armyworm adults are moths that can fly many hundreds of kilometers. This is a very significant pest because it has many host plants and is difficult to control.

Full-grown larvae are brown/green with lateral beige stripes, a characteristic pale Y-shaped marking on their head (arrowed) and a square pattern of four darker dots (paler in the pale form) (arrowed) near the tail. Females lay eggs in batches 20 to 250, often under the leaves. Its wide host range includes crops such as maize, sorghum, soybeans, groundnuts, potatoes, grasses and ornamental crops.

Photo by Desiree van Heerden from Syngenta

Photo by: Matt Bertone

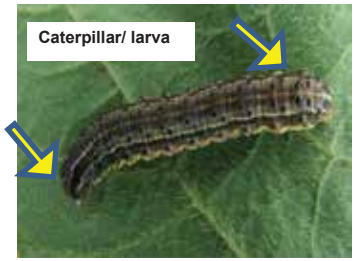

Photo by: Johan Dreyer

Photo by: Matt Edmonds

Geographical distribution and invasiveness

Fall Armyworm (FAW) originates from the tropical regions of South America and is present in the Caribbean region as well as some southern states of the United States of America. In Africa it was reported for the first time in several West and Central African countries in 2016. In 2017 the pest was officially reported for the first time in South Africa, and to date, it has been reported in all 9 provinces.

Damage and symptoms

Females lay eggs in masses on leaves, mostly on the underside of the leaves, but also on the upper side of the leaves and stems. Feeding marks by the first instars can be seen on the leaves; young FAW caterpillars use ballooning (spreading by wind on a thread of silk) to spread to new host plants. Large holes accompanied by larval droppings are noticed in the whorls and on surrounding leaves at a later stage of infestation. The droppings take on a very characteristic appearance when dry, that of sawdust.

Larvae feed on the foliage and growing points of maize and other hosts. Foliar damage to maize is usually characterised by ragged feeding, and moist sawdust-like droppings near the leaf whorl and upper leaves of the plant. In maize, larvae also burrow through the husk into the ear and eat the kernels.

Photo: Desiree Van Heerden

Photo: Annemie Erasmus & Margaret Kieser

Identification

Eggs are laid in batches of 20 to 250 on both sides of leaves.

Larvae (worms): there are six developmental stages from egg to moth. Young larvae are difficult to identify morphologically as the early instars resemble those of several other noctuids.

Marks that are often used for identification include the upside-down Y mark on the head region (see photo below) and the four larger spots on the second last segment. **Moths:** Wingspan ranges from 30 to 40mm. Forewings of male are grey to brown shading, mottled with a white patch on outer tip while that of female are uniform grey to brown, wing markings indistinct. Hindwings of both male and female have white/ silver wings with a narrow dark brown border.

FAW head showing inverted white “Y”
Photo: Margaret Kieser

Control practices

The agrochemicals are available at different retailers in the country. The main concern with this pest is that it can rapidly develop resistance to agrochemicals, thus rotating them within the cropping season according to resistance group and mode of action is highly recommended to avoid resistance. Note that agrochemicals must be used in accordance with the manufacturer’s label instructions.