Macadamia Protection Programme

MACADAMIA NUT BORER

Background Macadamia nut borer is an important pest of macadamia in South Africa with larval infestations present in all main growing regions. The species has a limited geographic distribution, reported only in South Africa and Malawi, and feeds almost exclusively on macadamia. Yield loss resulting from this pest has not been determined.

Scientific name
Thaumatotibia batrachopa

Family
Tortricidae

Insect type
Fruit borer

Biology Female moths lay eggs on the surface of macadamia pericarps. Upon hatching, larvae bore into the pericarp and cause extensive tunneling damage. In some cases, depending on nut development, larvae may tunnel to the centre of the nut and feed on the kernel. Pupation generally occurs within the soil, although there are reports of larvae pupating within nuts. After emergence, adults seek shelter within the orchard. Adults become active during the dusk period, where they search for mates and fulfil the role of producing offspring.

Description The eggs are approx. 1 mm long, oval in shape and range from yellow to translucent white in colour. Larvae are approx. 15 mm long when fully grown. Fully grown larvae have a brown head and a creamy-white body with rows of brown spots running down the length. The pupae are brown and approx. 7 mm in length. They have 10 abdominal segments with transverse row spines. The adults are brown-grey with a body length of approx. 8 mm and a wingspan of approx. 18 mm.

Symptoms

- Entrance holes in pericarp with or without frass
- Tunneling/feeding damage within pericarp and/or kernel
- Premature nut drop

Products registered for control in South Africa

Chemical

- Allice 20
- Delegate 250
- Emma
- Orthene 75
- Vitex 50
- Wonderland 200

Pheromone

- Last Call M.N.B.
- M.N.B. PheroLure
- X-Mate™ M.N.B.

Life cycle The total life cycle duration of macadamia nut borer is between 40 to 50 days at 23°C. The egg stage is estimated to take between three to four days, the larval stage is between 16 to 20 days, the pupal stage is between 1 to 11 days, and the adult life span is between 10 to 14 days.

References

SAMAC. (2020). Macadamias: Information on products registered under Act 36 of 1947 for specific use in South Africa. Retrieved from https://www.samac.org.za/wp-content/uploads/2020/06/Macadamia-Registered-Products-June-2020-1.pdf

Smith, A. K. (2020). Artificial rearing and life stage characterisation of Thaumatotibia batrachopa (Unpublished master's dissertation). University of Pretoria, Gauteng Provence, South Africa.

Photos by: Ashleigh Smith

SAMAC
Macadamias South Africa NPC

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

FABI

gerda.fourie@up.ac.za | https://www.fabinet.up.ac.za/