

Confirming the pest status of Trimen's false tiger, *Agoma trimenii* (Felder) (Lepidoptera: Agaristidae), on grapevines in South Africa

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Various lepidopteran pests attack grapevines in South Africa, but they are mostly regarded as sporadic pests that seldom cause economic damage. The leaf-feeding silver-striped hawk moth, *Hippotion celerio* (Linnaeus) (Sphingidae), is common in the Western Cape Province and occasionally causes economic damage to young vines. *Theretra capensis* (Linnaeus) (Sphingidae) (grapevine hawk moth) and *Heraclia superba* (Butler) (Agaristidae) (superb false tiger) have also been reported on vines, but are rarely of economic importance (Anneck & Moran, 1982). The African bollworm, *Helicoverpa armigera* (Hübner) (Noctuidae), is a sporadic pest on grapes, causing severe damage when outbreaks occur (de Villiers & Pringle 2007). False codling moth, *Cryptophlebia leucotreta* (Meyrick) (Tortricidae), and several species of fruit-piercing moths (Noctuidae) cause sporadic damage to grape berries.

The false tiger, *Agoma trimenii* (Felder) (Lepidoptera: Agaristidae), is an indigenous species that utilizes various indigenous wild grape species as hosts (Kroon 1999). Although it was known to feed on leaves of cultivated grapes (*Vitis vinifera* L.) (Vitales: Vitaceae) in summer rainfall areas, it was not previously regarded as a pest. No information is available on the life history of *A. trimenii* and no previous record of this species as a pest of any crop exists.

After reports of *A. trimenii* attacking vines in the Groblersdal area, a survey was conducted to determine its pest status on vines. During 2011, five farmers in the Groblersdal area as well as two in the Augrabies areas were interviewed to assess the pest status in these areas. This survey and information gathered from a regional representative of an agrochemical company indicated that this species attained pest status on both table and wine grapes in the Groblersdal (Limpopo Province), Groblershoop and Augrabies areas along the Orange River in the Northern Cape Province. Outbreaks of this pest in the Orange River production area are sporadic and occur

between October and March, largely during harvest time of wine grapes (January). In the Groblersdal area *A. trimenii* has become a regular pest on table grapes with outbreaks usually occurring during December. During this period spraying is not allowed due to limitations on insecticide use during harvest and the possibility of unacceptable residue levels on the harvested crop. Heavy infestations of this pest result in large-scale defoliation of vines. Damaged leaves initially exhibit typical caterpillar damage on the edges.

This survey showed that extensive economic damage was seen for the first time during 2005 in the Groblersdal area and during 2008 in the Augrabies area. Current control measures involve repeated applications of insecticides against larval infestations. These insecticides are unregistered for this purpose and may induce the development of secondary pests that are under natural control. According to the survey, the problem was so severe in some parts of the Groblersdal area that insecticides were applied every 10 days (from October to March) to control larval infestations. Farmers indicated that they rotated different insecticides to prevent development of resistance.

Members of the Agaristidae are more diverse in other parts of the world where they are also known to attack vines. In arid environments in the United States and Australia, *Agarista agricola* (Donovan), painted vine moth, (D'abrebra 2009) and *Phalaenoides glycinae* (Lewin), grapevine moth, are common pests on grapes and vines (Australian Museum 2010). *Alypia octomaculata* (Fabricius), eight-spotted forester, is a pest on grapes in southern Canada and the United States (Williams *et al.* 2009).

Description of life stages

The moths are medium-sized (wingspan approximately 54 mm). The forewings have a black/grey border and are black with two round pale-yellow spots at the tip of the wings and two yellow triangular markings at the base of the wings (Fig. 1). The hind wings are orange with a black border. The abdomen of the moth is orange with a longitu-

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Fig. 1. *Agoma trimenii* (Trimen's false tiger).

dinal black stripe. The eggs are yellow when laid and become cream-coloured with irregular brown markings as they mature. Eggs are laid singly on the surface of grape leaves and hatch approximately three days later. Newly hatched larvae are 3 mm in length and have a cream-white colour. Older larvae have an orange hump on the ends of their bodies and are banded with black and yellow markings (Fig. 2). The larvae are reported to be host-specific and pupate in the soil at the base of

the food plant (Picker *et al.* 2002).

Known wild host plants of *A. trimenii*, which all occur in the Limpopo Province, are wild grapes (Vitaceae) belonging to the genera *Cissus* and *Rhoicissus* (Kroon 1999).

The increasing economic importance of this species in several of the grape-producing regions of South Africa necessitates urgent research on its biology and development of integrated pest management strategies.



Fig. 2. *Agoma trimenii* larva on a vine leaf.

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