



# Groundnut Leaf miner

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Groundnut leaf miner (*Protaetia modicella* Deventer), is a very serious pest of groundnuts both in the rainy and post rainy season crops and is regarded as the most important pest threatening groundnut production in Uganda. In Africa, it was first reported in Uganda, Kumi District in 1998 (but has now spread countrywide), then in Malawi, South Africa, Mozambique and Democratic Republic of Congo (DRC). The pest is spreading rapidly, causing serious damage to groundnut, particularly in Uganda and Mozambique where total crop losses have been reported. Leafminer is much more damaging during the short rainy cycle when long drought precedes rains. Most of the African groundnut production is considered at risk. The pest also feeds on soybean, cowpea, alfalfa, pigeon pea, other legumes and cotton. Adults of *A. modicella* are greyish moths that lay eggs singly on the underside of groundnut leaves and on petioles. Yellowish green larvae hatch, tunnel into leaves and feed between the upper and lower epidermis of leaves. Damaged leaves become brown, rolled and desiccated, resulting in defoliation. Later instars appear on the leaf surface, where they roll and web it, or they web two leaves together. Pupation takes place inside the webbed leaflets.



Adult Leaf miner/moths



Leaf miner pupae (left) and parasitized larvae (right)



Leaves damaged and webbed by mature larvae



Extensive defoliation by leafminer larvae



Serenut 10R is the only known leaf miner tolerant commercial cultivar but 4 other superior pre-release lines have been identified (SGV0023, SGV 0002, SGV 0053, SGV 0084)



**Management: This pest can be managed using cultural control measures, resistant varieties, biological control agents and by spraying chemicals**

**Resistant varieties:** Growing leafminer resistant / tolerant varieties like Serenut 10R, SGV0023, SGV 002, SGV 0053, SGV 0084, samnut 22 and 23, ICGV 87160 (ICG (FDRS) and NCAC 17090

#### Biological control

1. Botanical pesticides (neem, talstar, azadirachta indica plus garlic, RD-9 Repellin, Alltin) and Bacillus thuringiensis Berliner
2. Release Trichogramma chilonis @ 50000/ha twice (7-10 day interval)
3. Coccinellidae beetles ( e.g. ladybird beetles)

#### Cultural/Agronomic measures

1. Crop rotation with non-leguminous crops such as maize and sorghum reduces the leafminer population.
2. Plant early at the start of the rains to avoid the pest buildup
3. Intercrop groundnut with trap crops such as pearl millet and cowpea
4. Use traps (light,sticky,pheromones) to attract and catch the adult moths and to monitor the pest populations
5. Remove the alternative hosts and weeds viz., amaranthus, hyacinth bean (lablab), mung beans, and *Indigofera hirsuta* to control the growth of the leaf miner population

#### Chemical control

The chemical spray is only recommended when you have found 5 larvae per plant at the seedling stage i.e. 30 days after emergence (DAE), 10 larvae per plant per plant at the flowering stage (50 DAE), and 15 larvae per plant at the pod filling stage (70 DAE). If the populations are above ETL then Spray with:

- Monochrotophos mix 60mls in 15 litres of water or Dimethoate 40 EC mix 20mls in 15 litres of water (or as per manufacturers' specification)
- Select plus mix 30mls in 15 litres of water (or as per manufacturers' specification)

When using a pesticide, always wear protective clothing and follow the instructions on the product label, such as dosage, timing of application, and pre-harvest interval.

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