Pest Control No. TPC11

Variegated grasshopper, *Zonocerus variegatus*

The variegated grasshopper is a widespread pest from West to East Africa.

Host

The variegated grasshopper is a pest of many crops in the seedling stage, especially cassava and finger millet. Other affected crops include cocoa, castor, cashew, coffee, cotton and sweet potato.

Symptoms

Both the young and adult grasshoppers eat leaves of crops and especially seedlings, leaving characteristically ragged edges.

Description of pest

The adults are 3.5cm long, dark green. Most of the body is covered with black, yellow and orange patterns. Short winged grasshoppers which cannot fly are very common.

Life cycle

Eggs are usually long and thin, 6 mm long and 1.5 mm wide. They are laid in the soil with much froth which hardens to form packets about 2.5cm long. Laying takes place from March to May and hatching in October/November. Each female lays roughly 300 eggs.

The young grasshoppers or 'nymphs' are short-horned grasshoppers about 3 to 4 cm long. They are black with yellow or white borders around their legs.

Adults are described above. They usually live for about 3 to 4 months. There is only one generation per year.

Prevention and control

Social control: It may be necessary to work with surrounding farmers to destroy a pest. The variegated grasshopper usually has 1 or 2 nests per hectare. These can be destroyed by raking out the eggs from the nest into the sun for them to dry out and die. The nest could be on another farmers farm but it could affect your crops. Joint action and cooperation between all farmers could reduce infestation considerably.

Plant preparations for the control of variegated grasshoppers

Neem *(Azadirachta indica)*: Native to India, *Azadirachta indica* is now distributed throughout Southeast Asia, East and Sub-Sahelian Africa. Fallen fruits are collected from underneath the trees where they grow. The flesh is removed from the seeds and any remaining shreds washed away. The seed is carefully dried in airy conditions (in sacks or baskets), to avoid formation of mould. When needed, the seeds are shelled, finely grated, then soaked overnight in a cloth suspended in a barrel of water. There should be 2 to 50g of powder per litre of water. This solution is then sprayed on infested plants.

Persian lilac (*Melia azedarach*): This tree is closely related to neem. It acts as a contact and stomach poison. Put 150g of fresh leaves or 50g of dried leaves into one litre of cold water. Leave to soak for 24 hours. Use as a spray on affected plants.

Annona (*Annona muricata, A. reticulata, A. squamosa*) plant grows mostly in tropical America, but is also found in parts of Asia and Africa. Seeds from the unripe fruit should be collected and ground to extract the oil. This should be diluted in water and used as a spray.

Pyrethrum (*Chrysanthemum cinerariaefolium*): The white flowerheads possess insecticidal properties. Pyrethrum is most productive at altitudes of 1600 meters and ideally in semi-arid conditions where winters are cool. On richer soils the insecticidal properties are reduced.

Pick on a warm day when the flower are fully open. Then pile up into small heaps in the sun to warm through. Spread out to dry on thick mats in a shady area. If they are to be stored, they need to be kept in an air-tight container in the darkness. Light reduces the effectiveness of the flowers. Pyrethrum is a contact poison, it repels pests and acts as an antifeedant.

Pyrethrum powder: Grind flowers to a dust. Use pure or mix with a carrier like talc or lime. Sprinkle over infested plants.

Pyrethrum liquid: Mix 1 to 1.5kg pyrethrum flowers with 3kg liquid soap and 100 litres water. Strain through a sieve or cloth and use immediately as a spray. The soap increases the effect of the pyrethrum four times.

Onion (*Allium cepa*): Extract the juice from 2 to 3 kg of onions. Dilute the juice with water. The amount of water will depend on the strength of the onions. Spray onto the affected crops. The solution should cover 0.25 hectares.