Pest Control No. TPC10

Mexican bean beetle, *Epilachna varivestis*

The Mexican bean beetle is one of the rare leaf-eating members of this family. It is a widespread pest throughout Central and North America, Africa and Asia.

Host

The Mexican bean beetle is mainly a pest of leguminous plants including snap or common beans, limabeans, cowpeas and soyabeans. It can also feed on maize, cucurbits, potatoes and eggplants.

Symptoms

The larvae eat the underside of the leaves to imbibe the sap. The adult beetles eat all the leaf between the ribs and in severe cases they will eat stems and pods of legumes as well.

Description of pest

The adult beetle looks very similar to a ladybird but it's feeding habits mark it out as a pest to crops. They are dark yellow with a reddish shine. They have 16 black spots on their shell. They are 6 to 8mm long and 4 to 6mm wide.

Life cycle

The oval, pale yellow eggs are laid in groups on the underside of the leaf. After 4 to 5 days they hatch into 8mm, oval yellow larvae. Each segment part of their body is covered with 4 to 6 yellow hairs with black tips. In cold conditions the hairs become totally black. They pupate on the leaf itself. The beetle emerges and starts to feed on the leaves.

Prevention and control

Field hygiene: After an outbreak, stubble should be ploughed into the soil to a depth of 15cm or burnt to kill any remaining larvae.

Plant preparations

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.

Derris (*Derris elliptica, D. Malaccensis, D. uliginosa*): This shrub originates from lowland areas of the Malay Archipelago. Freshly cut roots from 2 to 6cm in diameter should be washed and cut into 5cm lengths. They should be ground with soap and a little water. Soap helps the solubility of the insecticidal ingredient. When completely shredded squeeze the liquid out through fine cloth. The solution should be diluted and used at once. To obtain this solution the following quantities should be used: 1 part soap : 4 parts roots : 225 parts water.

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 the flowers on a warm day when the flower are fully open. Then pile up into small heaps in the sun to warm through. Then 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 liquid: Mix 20g pyrethrum powder with 10 litres water. Soap can be added to make the substance more effective but it is not vital. Apply immediately as a spray.

Yam bean (*Pachyrrhizus erosus*): The ripe seeds of this plant should be collected to make an effective spray. This acts as a contact and stomach poison.

Grind 65g of yam beans and mix well with 12 litres of water. Spray on affected plants.

Garlic (*Allium sativum*): Garlic has a wide range of effects: insecticidal, fungicidal, nematocidal and is effective against ticks.

Garlic spray: Cover 3 finely ground garlic bulbs in liquid paraffin for 2 days. Stir in one large spoonful of soap and 10 litres of water. Use this spray immediately so as not to loose the effects of the spray.

Note: All spray applications should be done before the eggs are laid.

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