

1. Dimethoate 30 EC or oxydemeton methyl 25 EC both at 2ml/litre of water at 10-15 days interval
2. Three spray of monocotophos at 2ml/litre of water
3. Spray acephate 75 WP at 0.75 ml/litre of water or phosphamidon 2ml/litre of water during pre-flowering period.
4. Spraying of Triazophos +decamethrin at 0.036% or 0.1% methomyl or 0.04% cypermethrin or 0.05% cartap hydrochloride gives very good control of the pests
5. In severe cases spray imidacloprid 200 SL at 0.4 m/litre of water.

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IPM PACKAGE FOR RAPESEED AND MUSTARD



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Important pest of rapeseed and mustard:

Mustard aphid, painted bug, mustard sawfly, hairy caterpillar, cabbage caterpillar, green peach aphid, larger moth and leaf miner.

IPM Strategies:**A. Cultural practices**

- 1) Collection and destruction of plant debris of previous crops.
- 2) Deep summer ploughing.
- 3) Grow resistant/tolerant varieties
- 4) Early sowing as recommended to a particular area of the crop to escape the mustard aphid incidence.
- 5) Use well decomposed FYM.
- 6) Irrigate the crop after IV week of sowing to reduce the painted bug incidence, if present.
- 7) Follow clean cultivation with proper drainage system.
- 8) Remove all weed hosts susceptible to aphids, especially those yellow flowering plants from within and around the vicinity of crop field.

- 9) Thrash the crop as early as possible and dispose the crop refuse.

B. Mechanical practice:

- 1) Collection and destruction of egg masses and early instar larvae of hairy caterpillar and cabbage caterpillar.
- 2) Removal of pest infested twigs in early stages.
- 3) Use yellow sticky trap or yellow dish pans with water and a bit of bleach to attract and kill winged aphids.
- 4) Use sweep net at least weekly interval.
- 5) Trap crops like marigold can be planted around the edges of the field.

C) Biological :

- 1) Conserved predators and parasites like ladybird beetles, damsel fly, green lacewings, minute pirate and parasitic wasps.

- 2) Apply neem cake at 250 kg/ha immediately after germination and repeat at flowering. This will reduce painted bug incidence.
- 3) Spray 1% neem or porgamia soap or 4% pulverized neem seed powder extract (NSPE) or 4% NSKE at 10 days interval.
- 4) Repellin at 1% margocide at 0.1% and neemarc at 1% gives higher oviposition deterrent, antifeedant and larvicidal actions respectively on mustard sawfly.
- 5) Use of commercial formulations of verticillium lecanii at 15 days interval reduces aphid population.

D) Chemical practices:

Under severe infestation, when the pest population reaches Economic Threshold level (ETL), use any of the pesticides judiciously at the right time (either in the morning or evening) with proper precautions: