## Bean fly in beans

### Ophiomyia phaseoli
Bean stem maggot in English

### Prevention
- Plant early in the season (3-5 days after first rains). Bean fly numbers are low during early growing season and increase with time.
- Mulch with dry banana leaves or grass to promote root development and enhance tolerance to maggot damage.
- Don’t plant beans near cowpea, soybean or other leguminous crops, that may be a source of bean flies.
- Remove and destroy crop residues and all plant parts with symptoms of damage by bean flies because maggots and pupae live in the bean stems. However, if no major insect pests and no major diseases are prevalent, then leave residues to improve the soil, and reduce water evaporation.
- Ridge up the soil around the plants to cover the roots 2-3 weeks after emergence to allow roots to grow more quickly.
- Conserve natural enemies of bean flies, such as a braconid parasitoid wasps, by not using pesticides.

### Monitoring
- Leaves: Look on the basal portion of the upper side of leaves for tiny yellow feeding and oviposition spots at 2-3 weeks after germination.
- Stem: Observe for swellings, feeding tunnels at the base of stems. Search for maggots (white) / adult flies (black) at the point where the stem comes in contact with the soil. Consider action if more than 1 maggot or maggot tunnel per plant or 3-4 adults per plant/square meter.
- Whole plant: Look for yellowing, stunting, wilting and dying of young plants at 2-3 leaf stage. Consider action when you see 3-5 dying plants in rows or per square meter.

### Direct Control
- Get 10 dried garlic, 2 dried onions and 5 hot chillies and cut up rough, boil the mixture of garlic, onion and chilli in 1-2 litres of water for 10 minutes, and let stand for 1 day. Add 10ml of liquid soap, then store in a glass bottle or jar. Dilute 250ml of mixture to 10 litres of water. Spray the solution in the evenings every second day for 5 days if threshold is reached.
- When using a pesticide or botanical, always wear protective clothing and follow the instructions on the product label, such as dosage, timing of application, pre-harvest interval, max number of sprays, restricted re-entry interval. Do not empty into drains and water sources.
- WHO toxicity class II pesticides might not be allowed in local IPM schemes.
- Always consult recent list of registered pesticides of ZEMA.
- Seedling sprays only partly reach larvae: Use Diazinon–based products (Diazinon30EC, and others); Organophosphate with contact, stomach and respiratory action on insects.
- Adult bean flies can partly be controlled by foliar sprays: Azadirachtin–based products (Neem, NimbecidineE, others). Repellent, insecticidal, antifeedant and anti-egg laying pesticide.
- WHO toxicity class II (moderately acute hazardous); restricted re-entry interval 5 days, pre-harvest interval 21 days. Toxic to beneficial mites, spiders, rove beetles, hoverflies, bees, earthworms, fish. Apply max. 1 spray onto stem base of seedlings.
- Not WHO classified, but considered unlikely to present acute hazard in normal use; p.h.i. 3 days; r.e.i. 1 day. Max. spray 1 just before flowering. Toxic to predatory mites, bees, flower bugs.