



PELOMBONG DAUN

Nama Inggeris : Leaf miner
 Nama Saintifik : *Liriomyza huidobrensis*
 Tanaman : Kekacang, sayur jenis krusifer, tomato



Biologi Serangga

- Dewasa : Lalat kecil kira-kira 1.7 - 2.3 mm. Mata merah, toraks berwarna hitam, berbelang kuning di antara toraks dan abdomen.
- Telur : Di dalam daun. Bujur berukuran 0.15 - 0.22 mm dan berwarna putih krim. Menetas dalam masa 4 - 6 hari.
- Ulat : Putih krim atau putih kekuningan. Berukuran 3.0 - 3.5 mm. Pembesaran ulat mengambil masa 5 - 6 hari.
- Kepompong : Terletak di atas daun berwarna kuning keemas-emasan. Terdapat 2 bintik kemerah-merahan seperti mata di bahagian depan. Jangka masa kepompong ialah 7 - 14 hari.

Kerosakan

Ulat melombong di dalam daun mengakibatkan lingkaran yang cerah pada permukaan daun. Serangan teruk mengakibatkan daun mengering dan kelihatan lingkaran kecoklatan. Proses fotosintesis terjejas apabila banyak permukaan daun dirosakkan.

Kawalan

Elakkan menanam sayur sama jenis di tapak yang sama secara berterusan. Amalkan sistem tanaman bergilir. Gunakan pelekat serangga. Cantas daun yang diserang dan dibakar. Sembur dengan racun yang disyorkan.

Jenis Racun Yang Disyorkan*

Deltamethrin (Decis, Permit, Shieldmate), *Lambda-cyhalothrin* (Karate).

*Patuhi arahan pada label racun



LEAF MINER

Malay Name : Pelombong daun
 Scientific Name : *Liriomyza huidobrensis*
 Crop(s) : Legumes, *Brassica* sp. and tomato



Biology of Pest

- Adult : Flies are small of 1.7 - 2.3 mm in size. Eyes are red, thorax is black and yellow stripes appear between thorax and abdomen.
- Egg : Oval, white eggs (0.15 - 0.22 mm) are laid in the leaf epidermis and hatch within 4 - 6 days.
- Larva : Larva is white or yellowish white and is 3.0 - 3.5 mm in size. Larva matures within 5 - 6 days.
- Pupa : Golden yellow pupa can be found on leaf surface. Two red spots appear at the front and pupation period is within 7 - 14 days.

Damage

Larva mines into the leaf tissues causing blistered, translucent patterns on leaf surface. Severe attack causes leaf dehydration and browning. Photosynthesis process is affected as leaf surfaces are damaged.

Control

Avoid planting similar vegetables on the same field continuously and practice crop rotation system. Trim and burn infested leaves. Spray with recommended insecticides.

Recommended Insecticide*

Deltamethrin (Decis, Permit, Shieldmate), *Lambda-cyhalothrin* (Karate).

* Please follow pesticide label directions carefully.



ULAT RATUS

Nama Inggeris : Armyworm
 Nama Saintifik : *Spodoptera litura*
 Tanaman : Sayur, Padi



Biologi Serangga

- Dewasa : Sayap berwarna perang gelap, berjulur serta bercarik-carik kuning dan tompok-tompok perang. Ukuran badan 20mm.
- Telur : Berkelompok di atas daun, berwarna hijau pucat, diselaputi bulu perang yang halus dan pendek. Telur menetas dalam masa 3 -5 hari.
- Ulat : Mempunyai dua tompok hitam di sisi badan. Apabila besar ulat bercorak dan bertompok-tompok hitam, satu jalur kuning memanjang di bahagian belakang dan satu jalur di bahagian sisi.
- Kepompong : Di dalam tanah di sekitar pangkal pokok. Berwarna perang kemerah-merahan hingga ke coklat. Jangka masa kepompong ialah 8 - 10 hari.

Kerosakan

Ketika kecil ulat menyerang secara berkumpulan. Berselerak apabila semakin membesar. Pucuk dan daun muda dimakan dari tepi daun sehingga tinggal rangka.

Kawalan

Elakkkan menanam tanaman sama jenis di tapak yang sama secara berterusan. Amalkan sistem tanaman bergilir. Pastikan kawalan dilakukan di peringkat awal dengan menyembur racun yang disyorkan dan ulangilah semburan. Telur boleh dipungut menggunakan tangan dan dimusnahkan.

Jenis Racun Yang Disyorkan*

Bacillus thuringiensis (Bactospeine, Crymax, Delfin, Lepicide), *Deltamethrin* (Decis, Permit, Shieldmate), *Lambda-cyhalothrin* (Karate).

*Patuhi arahan pada label racun



ARMYWORM

Malay Name : Ulat ratus
 Scientific Name : *Spodoptera litura*
 Crop(s) : Vegetables, Paddy



Biology of Pest

- Adult : Adults are dark brown with yellow patterns / stripes and brown spots. They are 20 mm in size.
- Egg : Pale green eggs covered with short, fine brown hairs are laid in clusters on leaf surface and hatch within 3 - 5 days.
- Larva : Matured larva has pattern and black spots on the dorsal part; a yellow stripe along the dorsal part and another at the side.
- Pupa : Pupa can be found superficially in the soil at plant base. It appears reddish brown or brown. Pupation period is within 8 - 10 days.

Damage

At early stage, larvae attack in groups and are scattered as they mature. Young leaves and shoots are consumed leaving only the veins.

Control

Avoid planting similar crops on the same field continuously and practice crop rotation system. Ensure that control begins at early stage by spraying recommended insecticides. Eggs can be collected by hands and eliminated.

Recommended Insecticide*

Bacillus thuringiensis (Bactospeine, Crymax, Delfin, Lepicide), *Deltamethrin* (Decis, Permit, Shieldmate), *Lambda-cyhalothrin* (Karate).

* Please follow pesticide label directions carefully.



KUMBANG KUTU

Nama Inggeris : Flea beetle
 Nama Saintifik : *Phyllotreta vittata*
 Tanaman : Jenis krusifer (sawi, kailan dan yang sejenisnya dengannya)



Biologi Serangga

- Dewasa : Berwarna hitam dengan dua jalur memanjang di bahagian belakang, melompat bila diganggu. Ukuran serangga ialah 2.5 mm.
- Telur : Sebijik-sebijik atau 2 - 3 biji di atas daun atau di dalam tanah berhampiran pangkal tanaman. Berwarna hijau kekuningan dan menetas dalam masa 3 - 4 hari.
- Ulat : Berukuran 3 mm. Berwarna putih kekuning-kuningan dan kepala berwarna perang. Tempoh masa tumbesaran ialah 10 - 14 hari.
- Kepompong : Berwarna putih. Terdapat di dalam tanah berhampiran pangkal tanaman. Tempoh peringkat ini ialah 4 - 5 hari.

Kerosakan

Ulat yang baru menetas bergerak terus dari pangkal pokok ke dalam tanah dan memakan akar dan pangkal anak benih menyebabkan benih mati. Serangga dewasa memakan daun sawi hingga menyebabkan daun berlubang-lubang kecil.

Kawalan

Elakkan menanam sayur sama jenis ditapak yang sama secara beterusan. Amalkan sistem tanaman bergilir. Pastikan kawalan dilakukan di peringkat awal tanaman dengan menyembur racun yang disyorkan.

Jenis Racun Yang Disyorkan*

Deltamethrin (Decis, Permit, Shieldmate), *Lamda-cyhalothrin* (Karate).

*Patuhi arahan pada label racun



FLEA BEETLE

Malay Name : Kumbang kutu
 Scientific Name : *Phyllotreta vittata*
 Crop(s) : *Brassica* sp.



Biology of Pest

- Adult : Adults are black with two stripes along the dorsal part and are 2.5 mm in size.
- Egg : Yellowish green eggs are laid singly or 2 - 3 eggs on leaf surface or in the soil around plant base. Eggs hatch within 3 - 4 days.
- Larva : Larva is yellowish white with brown head and is 3.0 - 3.5 mm in size. Larva matures within 10 - 14 days.
- Pupa : White pupa can be found in the soil around plant base. Pupation period is within 4 - 5 days.

Damage

Newly hatched larvae immediately move from plant base into the soil to feed on roots and seeds. Adults feed on leaves producing scattered fine holes.

Control

Avoid planting similar vegetables on the same field continuously and practice crop rotation system. Ensure that control begins at early stage by spraying with recommended insecticides.

Recommended Insecticide*

Deltamethrin (Decis, Permit, Shieldmate), *Lambda-cyhalothrin* (Karate).

* Please follow pesticide label directions carefully.