CUCURLURE (for Horticulture vegetable crops)

CUCURLURE, introduced for the first time in India, an eco-friendly, pesticide free wick that works for whole season (3 months). Very effective in attracting *bactrocera species* i.e., *B. cucurbitae.*

Host Crops for which CUCURLURE can be used:

Bactrocera cucurbitae *(Melon fruit fly)* infests over 70 host plants, amongst which, fruits of Bitter gourd, Muskmelon, Snap melon and Snake gourd, pawpaw, Gherkin, are the most preferred hosts.

Nature of Damage

For cucurbits, especially bitter gourd, the melon fruit fly damage is the major limiting factor in obtaining good quality fruits and high yield. It prefers young, green, and tender fruits for egg laying. The females lay the eggs 2 to 4 mm deep in the fruit pulp, and the maggots feed inside the developing fruits. At times, the eggs are also laid in the corolla of the flower, and the maggots feed on the flowers. A few maggots have also been observed to feed on the stems. The fruits attacked in early stages fail to develop properly, and drop or rot on the plant. Since, the maggots damage the fruits internally; it is difficult to control this pest with insecticides.

Maggots feed inside the fruits, but at times, also feed on flowers, and stems. Generally, the females prefer to lay the eggs in soft tender fruit tissues by piercing them with the ovipositor. A watery fluid oozes from the puncture, which becomes slightly concave with seepage of fluid, and transforms into a brown resinous deposit. Sometimes pseudo-punctures (punctures without eggs) have also been observed on the fruit skin. This reduces the market value of the produce. Pumpkin and squash are heavily damaged even before fruit set. The eggs are laid into unopened flowers, and the larvae successfully develop in the taproots, stems, and leaf stalks. After egg hatching, the maggots bore into the pulp tissue and make the feeding galleries. The fruit subsequently rots or becomes distorted. Young larvae leave the necrotic region and move to healthy tissue, where they often introduce various pathogens and hasten fruit decomposition. The extent of losses varies between 30 to 100%, depending on the cucurbit species and the season. Fruit infestation by melon fruit fly in bitter gourd has been reported to vary from 41 to 89%. The melon fruit fly has been reported to infest 95% of bitter gourd fruits in Papua (New Guinea), and 90% snake gourd and 60 to 87% pumpkin fruits in Solomon Islands. Singh et al. (2000) reported 31.27% damage on bitter gourd and 28.55% on watermelon in India.

BIOLOGY

The melon fruit fly remains active throughout the year on one or the other host. During the severe winter months, they hide and huddle together under dried leaves of bushes and trees. During the hot and dry season, the flies take shelter under humid and shady places and feed on honeydew of aphids infesting the fruit trees. The lower developmental threshold for melon fruit fly was recorded as 8.1° C. The lower and upper developmental thresholds for eggs were 11.4

and 36.4° C. This species actively breeds when the temperature falls below 32.2° C and the relative humidity ranges between 60 to 70%. It is reported the survival of adults for a year at room temperature if fed on fruit juices. In general, its life cycle lasts from 21 to 179 days. Development from egg to adult stage takes 13 days at 29° C. High temperature, long period of sunshine, and plantation activity influence the B. cucurbitae abundance. There are 8 to 10 generations in a year.

The egg incubation period on pumpkin, bitter gourd, and squash gourd has been reported to be 4.0 to 4.2 days at 27 ± 1° C, 1.1 to 1.8 days on bitter gourd, cucumber and sponge gourd, and 1.0 to 5.1 days on bitter gourd. The larval period lasts for 3 to 21 days, depending on temperature and the host. On different cucurbit species, the larval period varies from 3 to 6 days. Egg viability and larval and pupal survival on cucumber have been reported to be 91.7, 86.3, and 81.4%, respectively; while on pumpkin these were 85.4, 80.9, and 73.0%, respectively, at 27 ± 1° C.

The full-grown larvae come out of the fruit by making one or two exit holes for pupation in the soil. The larvae pupate in the soil at a depth of 0.5 to 15 cm. The depth up to which the larvae move in the soil for pupation, and survival depend on soil texture and moisture. Pupal period lasts for 6 to 9 days during the rainy season, and 15 days during the winter.

CATCHES FRUIT FLIES BEFORE THEY DAMAGE YOUR FRUIT

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