

Food-attractant trap: Cucurbits flies



M2i technology

- Controlled release rate for a greater efficiency
- 100% biodegradable
- Easy storage, at room temperature
- Extended shelf life: 2.5 years

User guide

M2i recommends: Cucurbitae Pro Drop® tube + Mac Phail trap/upside-down Funnel trap*

Trap setup: Open the tube of attractant. Do not touch the product with your hands. Place the tube in the holder (see top picture). Fill the bottom of the trap to a 1/3 of its capacity with water and unscented soap. Close the trap. The food-attractant will attract the flies and they will drown in the soapy water.

Characteristic of Cucurbitae Pro Drop®

Product type	Food attractant dispenser
Use	Monitoring
Active substance	Cuelure
Minimum dose of active substance	500 mg
Indicative duration of diffusion**	4 to 8 weeks
Stage of targeted insect	Adult (fly)
Estimated diffusion radius	Fly attracted on a radius of about 10 m

** for an average temperature of 30 °C and in the absence of strong winds.

Monitoring setup

Detection period: all year long

Trap location: suspended about 1m from the ground.

Recommended density: 25 traps/ha (Vargas et al. 2015)

Vargas et al., 2015. *Journal of Economic Entomology*, 108(4), 1612-1623; doi : 10.1093/jee/tov13

* Technical sheet available with the Funnel trap



Pest monitoring and recommendations

Trap follow-up frequency	Weekly
Recommended intervention threshold	1 fly caught /trap /day
Pest control methods	During the critical season and depending on trapping levels: it is possible to perform an additional insecticide and/or biocontrol treatment according to the insect life stage. Refer to recommendations of registered products for plant protection (ephy.anses.fr) and/or to your technical advisor
Preventive measures	Harvest the damaged fruits and destroy them by burying them at least 50 cm deep in the ground, by leaving them in the sun for 15 days in a hermetically-sealed plastic bag or by feeding them to animals.

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Bactrocera cucurbitae

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Daccus demmerezi

Curcubits flies (*B. cucurbitae* & *D. demmerezi*)

Pest life-stage: larva

Order: Diptera

Originally from India (*B. cucurbitae*) and from the Mascarenes (*D. demmerezi*), these flies are widespread in Central Africa, South Asia, and Oceania. *B. cucurbitae* is yellow/red with yellow marks on the dorsal part of the torax whereas *D. demmerezi* is brown with yellow marks. Their life cycle is similar and lasts 22 to 44 days. The adult lives 5 to 15 month depending on the temperature. The females can lay up to 1000 eggs, depositing them under the fruit skin. The hatching takes place 1 to 2 days later.

The larvae are white/orange with a pointed anterior end. They measure about 10 mm and their development takes 4 to 17 days. They damage the fruit by feeding on their flesh. Damages are also due to the ovoposition, which causes the micro-organisms to develop around the wound. Production losses up to 100% can be observed.

At the end of their development, the larvae burrow in the soil to pupate. The adults surface 7 to 13 days later. These species are active all year long and can spawn 8 to 10 generation/year. During the cold season, they gather under dead leaves whereas during the warm period, they take refuge in humid and shaded places.

Recommendations / Security

Keep out of reach of children.
Keep away from pets.
Keep away from food and drinks.
Keep in its original packaging and respect the uses, doses, conditions and precautions for use mentioned. Do not freeze.
Do not eat, drink or smoke while using. Wash hands after handling.
Discard emptied and rinsed containers in the household trash.

First aid

In case of contact with eyes, rinse with water as a precaution.
In case of contact with skin, wash with plenty of water.
If swallowed, do not induce vomiting, rinse mouth and seek medical attention.
If you feel unwell, seek medical advice and show the label.

Product usable in organic gardening.

Host plants

The curcubits flies feed mainly on cucurbitaceae (zucchini, watermelon, melon, squash, cucumber, etc.). They were also observed on broccoli plants, onion plants or banana trees, etc.

Detection strategies : food attractants

Food attractants are mimicking substances produced by the host plant in order to attract a target insect. Monitoring using such molecules can attract either males or females from this pest. It allows for the detection of the fly in the orchard. In case of high pest pressure, performing a curative treatment and measuring its efficiency can also help.

Benefits

This method is efficient, selective and harmless for fauna, flora, operators and local residents. It does not generate residues, inputs or resistance mechanisms.

Trapping period of *B. cucurbitae*



Indicative period
for India