

Biopar Biowasp

Biological fly control
for your farm

*Predator mini-wasps
that attack fly pupae
on farms*

Mini-wasps are beneficial insects that occur naturally in the wild and prey on flies in the pupal stage of their life cycle. Integrating the mini-wasps in an environment conducive to pest growth establishes a natural balance that regulates the pest population.



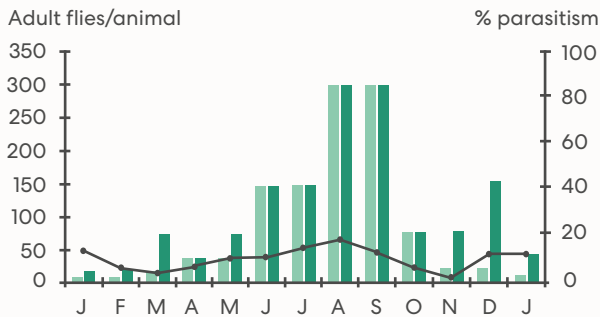
A complete and effective solution

- ✓ The products pose no danger to human or animal health
- ✓ Safe to use in the presence of animals
- ✓ Quick and easy to set up on your farm
- ✓ Effective on all species of nuisance flies found on farms

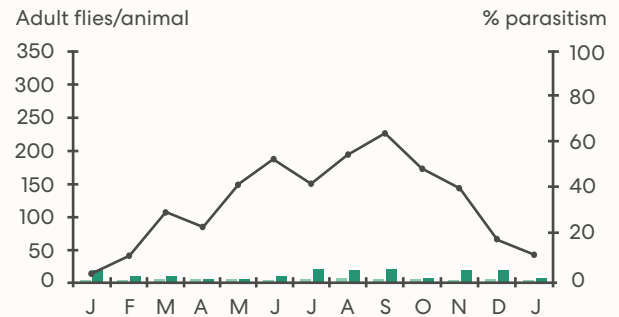
Biological fly control

Biopar and Biowasp consist of fly predator mini-wasps. Biopar contains one species (*Muscidifurax raptorellus*) and Biowasp two species (*Muscidifurax sp.* and *Spalangia cameroni*). They parasitise all species found on the farm (*Musca domestica*, *Stomoxys calcitrans*, *Musca autumnalis*, *Fannia canicularis*, etc).

Number of adult flies counted
Without mini-wasps



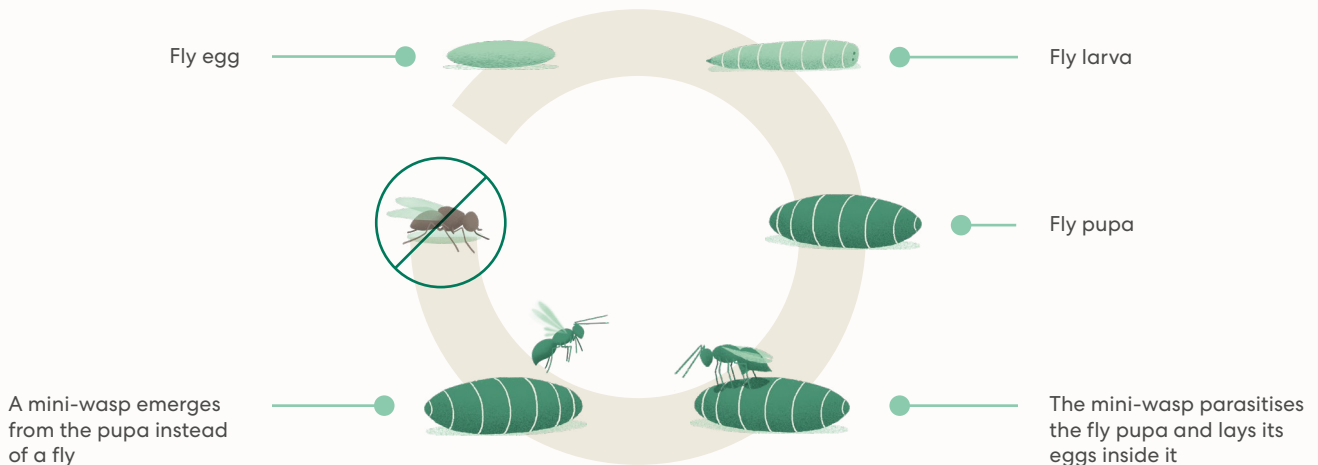
Number of adult flies counted
With mini-wasps



■ Houseflies ■ Stable flies ● Natural rate of parasitism

Adapted from: Skovgård, 2004; Biological Control Volume 30, Issue 2, June 2004.

As part of its natural behaviour, the mini-wasp lays its eggs inside the fly pupa. When the eggs hatch, they feed on the fly developing inside the pupa. These new mini-wasps grow into adults and emerge from the pupa to restart the biological control process. This solution involves no chemicals, and does not harm human health or the environment. The mini-wasps are present but unnoticeable on site. They are only a few millimetres long and do not attack or annoy humans or animals.



Characteristics

Biopar and Biowasp can be combined in a protocol or used alone. Biowasp contains predators that grow more slowly than those contained in Biopar. However, Biowasp is more effective in mulched areas where thick layers of litter accumulate as *Spalangia* goes deep into the litter to find its hosts.

	Biowasp	Biopar
Development time	13-15 day cycle and 25-30 days depending on the species	13-15 day cycle
Displacement capacity	Yes (wide dispersion)	No (low dispersion)
Fertility	Non-gregarious species (1 egg/pupae)	Gregarious species (5 to 8 eggs/pupae)
Consumption of fly pupae (Host feeding)	Host feeding	Host feeding

Instructions

Dosage

The Biopar/Biowasp dosage will depend on the type of animal:



Cattle/horses/goats:

Biopar/Biowasp for 30 animals.
Biopar XL/Biowasp XL for 300 animals.
Double the quantities for unweaned animals (calves, goat kids, etc.).



Sheep:

Biopar/Biowasp for 90 animals.
Biopar XL/Biowasp XL for 450 animals.
Double the quantities for unweaned animals.



Rabbits:

Biopar/Biowasp for 2,000 animals.
Biopar XL/Biowasp XL for 25,000 animals.



Poultry:

Biopar/Biowasp for 3,000 animals.
Biopar XL/Biowasp XL for 25,000 animals.

Frequency

To intervene in the fly's life cycle from the earliest stages, plan the first releases as early in the season as possible, between March and April. In the event of new stock, put the protocol in place on the arrival of the animals; after a cleanout, place on the new litter.

By frequently repeating the application of mini-wasps at intervals of 2 to 4 weeks, the fly population can be controlled effectively and for the longer term.

Lifespan and storage

The mini-wasps are live creatures with a limited life cycle. It is preferable to release the beneficials upon receipt. They may be stored for up to four days in a cool place away from light.

Easy and quick to use

- ✓ Scatter the beneficials in infested areas that are seldom trampled (such as underneath drinking troughs, along walls, under floor slats, in manure pits), wherever fly larvae and pupae are found. Once put in place on the farm, each mini-wasp will scour the litter for fly pupae and will lay four to five eggs in each pupa.



A complete pest-control programme

Products used in conjunction with Biopar/Biowasp

Intervention at all stages of the fly life cycle is necessary to keep the fly population on your farm down to a minimum. The range of BESTICO products makes this both possible and easy to do!

Contact one of our technical sales representatives to identify the appropriate treatment steps for your farm so that you can get started with a pest-control programme that matches your needs. Each programme will vary depending on local temperatures and the number of animals.

Fly trap

The Appibuster bucket is a trap for adult flies to be placed where animals return from grazing and near buildings. A complementary tool to use alongside our biological pest-control solutions.



Biofly

Biofly is made up of fly larvae that feed on the larvae of other flies (*Ophyra aenescens*), specially adapted to wet environments.



Biomite

Biomite is a predator mite that eats the eggs and larvae of flies and gnats.



Get the best results

To get the best results in reducing your fly population, set up a programme adapted to your farm as early in the season as possible. Each programme is based on the type of farm, building surface area and number of animals. These variables determine the combinations of predators to place, their quantities and the frequency of application.

BESTICO

(Let insects do the job.)

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