



photo: Denis Crawford - Graphic Science

Walter sitting on a fly pupa

Spalangia endius Parasitic wasp for the control of House & Stable Flies

Walter is a tiny wasp (2–3mm in length) that has become naturalized here in Australia. *Spalangia* are parasites of certain fly species and are harmless to other insects and vertebrate animals including humans.



The adult female wasp lays her eggs into immature fly pupae. After hatching, the wasp larva feed on the developing fly, ultimately killing it. Approximately three weeks later, the adult wasp will emerge from a small hole in the fly pupal case to mate and continue the cycle.

Target pests

A wide range of fly pests, including:

- House fly *Musca domestica* and
- Stable fly *Stomoxys calcitrans*

These fly species are commonly found associated with feedlots, piggeries, poultry farms, horse studs, refuse centres, and landfill sites. They cause problems anywhere intensive animal husbandry is practised. Flies are an annoyance to livestock, staff, and neighbours and carry disease.

The life cycle of a fly includes four stages: egg, larva, pupa, and adult. Adult female flies lay batches of about 100 eggs in manure and other suitable breeding sites. A single female may produce over 500 offspring in her lifetime. After hatching, fly larvae spend several days feeding on surrounding material. They then pupate and emerge as adult flies.

Chemical control of fly pests is possible but the development of resistance is a problem. Whenever chemicals are used near animals, there will be a risk that chemical residue may end up in meat and milk products.

Suitable environments

Flies quickly become a pest in areas where suitable breeding sites are available. Their short life cycle, constant breeding pattern and the large number of eggs they lay ensure this. Feedlots and other sites of intensive animal husbandry are particularly susceptible to nuisance fly populations, with House flies and Stable flies generally breeding in drains, sediment basins, silage pits, spilt feed and areas of undisturbed manure.

Before release

Walter should be released regularly during Spring and Summer. Wasps may build up naturally without augmentative releases but it will take much longer for the natural population to reach a level at which effective control of fly the population can be achieved.

During Winter, the cooler, drier environment will lead to a decline in both fly and parasitic wasp numbers. It is best to release Walter weekly or fortnightly, starting in Spring or early Summer before fly populations escalate to unmanageable levels. Extra releases should be made if fly populations are expected to be high.

At release

Walter is supplied in parasitised pupae which come in a paper bag mixed with sawdust or vermiculite. Transfer the pupae to a release container (a small take-away container with holes in the side, or our commercial release container) and hang them along fence lines or other suitable sites near areas of manure. In horse stables and other indoor environments parasitised pupae can be sprinkled around animal pens and areas where flies might breed. *Spalangia* parasites will then emerge and seek out their hosts in animal manure. They do this by burrowing down in the manure and deposit their eggs into fly pupae.

Recommended release rates

Large animals (cows & horses): 100-500 wasps per animal per fortnight.

Small animal husbandry (e.g. poultry): minimum two wasps per animal per fortnight.

Recommended release rates will vary according to the prevalence of manure and suitable breeding sites, as well as the existing fly population level. Moisture, temperature, humidity and the presence of natural fly enemies will also have an influence.

Season Long release

Early Spring to late Summer: Release every 2 weeks for up to 20 weeks (10 releases)

Cultural practices to aid establishment

Historically, chemicals have been used to control nuisance flies, however, problems with resistance to pesticides and the threat of residue in meat and milk products, have prompted a worldwide trend for more ecologically sustainable control methods. We encourage farmers to adopt an integrated pest management (IPM) approach when it comes to nuisance flies. Good sanitation impedes fly breeding and assists with the establishment of natural enemies including *Spalangia*. Fly breeding substrates such as manure, spilt feed, and vegetation should be removed or kept dry. Carcasses should be covered completely (preferably buried more than 1m deep) in composting facilities to prevent blowflies from breeding. Vegetation around feedlots and the perimeter of sedimentation systems and effluent ponds should be mowed regularly. This will reduce areas where flies can shelter.



Photo: Peter Green - DPI&F
Walter emerging from fly pupa

Chemical use

Spalangia are very effective parasites of fly pests but they are delicate organisms and easily harmed by insecticides. Most chemicals used against adult flies

are also toxic to Walter. Following an insecticide application, a wasp population will take much longer to recover than a fly population, so biological control is reduced during this period.

Additional information

Walter is dispatched by overnight courier where available and should be received within one or two days. *Spalangia* wasps are well protected within the fly pupal case and generally travel well.

On arrival, Walter should be released as soon as possible. In the event of adverse weather such as extreme heat or high rainfall, wasps may be stored for several days before release in a dark room at between 15 & 20°C. They should not be refrigerated.



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