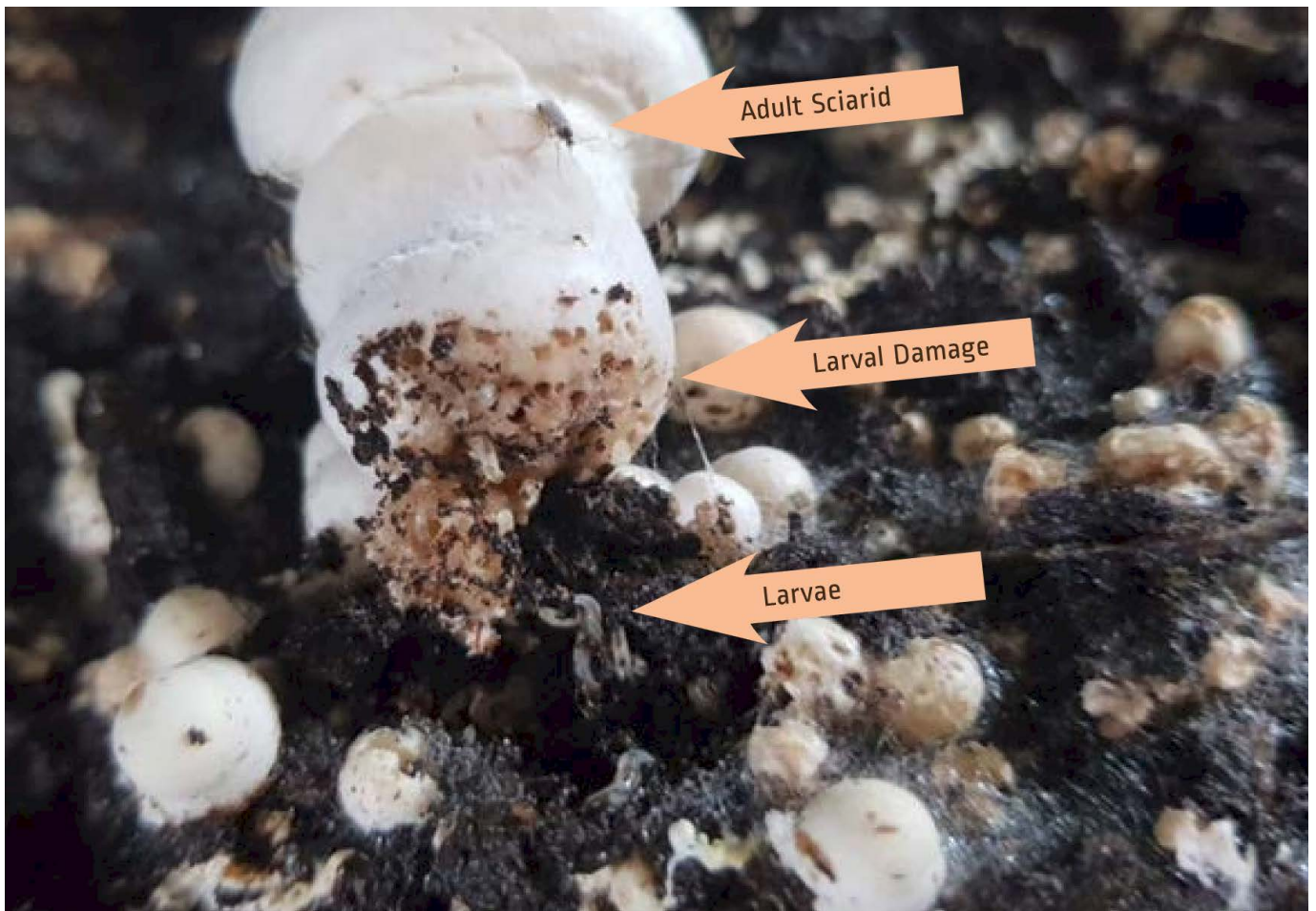




Action points to control Sciarid & Phorid flies



This photo was taken in a third flush shows an adult sciarid on the mushroom stalk just under the cap and sciarid larvae tunnelling into the base.

INTRODUCTION

Sciarid and phorid flies can breed in bushland, 'waste' or 'spent' compost in the farm environment and, most efficiently of all, in growing rooms.

The odour associated with the Phase 3 compost arriving on a farm either in bulk or blocks acts like a strong magnet to attract flies to the new crop.

The fact that a female sciarid can produce around 100 offspring and a female phorid can produce around 50 offspring means that new crops need to be strongly protected from invasion by adults and a holistic and integrated approach to fly control is needed.

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FLY CONTROL - ACTION POINT 1

Manage fly populations on filling and casing days.

As soon as the compost is finished being filled and/or cased and the room closed up, use a knock down AEROSOL product to kill any flies that may have flown in. The registered product for this application is the pyrethrin based product SupaPy[®].

Using an aerosol product is preferable as it targets adult flies on the wing and it hopefully will kill them before they lay their eggs but it should be realised that the killing period is 'short' i.e. hours not days. For a more even distribution of the aerosol mist, leave the recirculation fans on during treatment. Also, to take advantage of the fact that phorids are attracted to light, turn on the lights 5-10 minutes prior to using aerosols to encourage the flies to be active.

If the room is well sealed up with good physical exclusion an aerosol product and having FLY ZAPPERS in the room may be sufficient but if the room does not have good physical exclusion then using a pyrethrum DUST can give some more prolonged protection.

On a block farm with fly pressure it is recommended you cut the blocks as close to casing time as possible because while-ever the plastic is intact it provides a physical barrier to the flies.

There are numerous insecticidal dust products registered for mushrooms and they are listed on the APVMA website <https://portal.apvma.gov.au/pubcris> It is also advisable to reduce the number of adult flies on the whole farm prior to these operations. Activities that could be utilised to do that include:

- using dusts or aerosols in fly affected later flushes,
- applying wallsprays around points of entry. (*n.b. do not spray wallsprays directly onto mushroom beds*)

FLY CONTROL - ACTION POINT 2

Physical exclusion.

Physical exclusion is by far the most important means of fly prevention. Flies CAN walk against pressurised growing rooms and both phorids and sciarids are extremely effective at finding the smallest gap in joins and ductwork. Both phorids and sciarids can move readily through standard fly screens, a finer screen is required (e.g. Quarantine mesh).

Keeping doors closed is an important aspect of physical exclusion. Phorid flies are often seen crawling under doors, through gaps in door seals and between growing rooms and in drains. They can even crawl through pre-filters.

It is strongly recommended that you monitor the number of flies entering the room during the filling process on a weekly basis. By attaching fresh sticky paper close to lights, (including on the ceiling lights) it is possible to get some indication as to how many flies are entering during the filling process.

FLY CONTROL - ACTION POINT 3

Use of pesticides in the casing.

Any product you use should be registered for this use pattern and listed on the APVMA website <https://portal.apvma.gov.au/pubcris>

The rate and use instructions are listed on the product labels. Casing treatments target larval stages of the fly but it is critical that farms choose a casing treatment that specifically targets the fly present. It is essential you identify which fly species you have so that you can choose the most effective treatment. If you are unable to differentiate if you have phorids or sciarids then you need to get some outside advice, as this is a very critical step. Usually you have one species or the other but on occasion I have seen farms with both phorids and sciarids.

The active ingredients listed by APVMA to target Sciarids are: Cyromazine, Triflumuron, Diazinon, Fipronil.

The active ingredients listed by APVMA to target Phorids contain the active ingredient Fipronil and Cyromazine.

An older insecticide/active ingredient like Diazinon will also target Phorids but it does not persist in the casing (retired entomologist Alan Clift who specialised in mushroom pests always told me to expect less than two weeks activity from Diazinon) so it is clear there are a lot of factors to consider.

There are some insecticides listed on the APVMA website that also have a registered use pattern for the compost. You will find the instructions on the label but it is not a common use pattern in Australia.

FLY CONTROL - ACTION POINT 4

Use of biological control agents.

For those who wish to pursue non-chemical control options the following two types of products are relevant. There is a biological larvicide Vectobac WG® (comprising *Bacillus thuringiensis*) that the AMGA has a permit for on behalf of the industry. Vectobac WG® has a registered use pattern for the casing but perhaps has greatest application is for use in wet areas outside the mushroom farm buildings that are considered breeding grounds for flies.



Some flies trapped in pre-filters, but some get through.

It targets larvae, specifically their midgut. Specific information can be found on the label. Entomopathogenic nematodes do not require APVMA registration and are commercially available in Australia (www.ecogrow.com.au). The supplier can help with dose rates and timing.



This photo is taken inside the growing room. Pyrethrum dust and quarantine mesh are employed to try and contain and kill the flies inside the growing room and prevent them from moving to new crops.

FLY CONTROL - ACTION POINT 5

Don't abandon fly infested crops near the end of their life.

While the source of the initial infestation of flies on a farm is debatable it is clear that once flies are on the farm the main source becomes older growing rooms. Dusting and aerosols and fly zappers are the main tools available. On farms that steam out at the end of cropping it is recommended to dust a few hours prior to the commencement of cookout as once the steam goes into the room the flies try and escape.

FLY CONTROL - ACTION POINT 6

Remove picking waste (stalks) and spent mushroom compost off site in a timely manner.

FLY CONTROL TIPS

If there are not any flies on your farm at present, there are a number of things to have in place to minimise the chances of a population developing including:

- Maintain physical exclusion.
- Regularly check physical exclusion.
- Monitor fly numbers outside growing rooms and monitor how many flies enter during the filling process.
- Routinely use wallsprays around points of entry.
- When/if you stop using a casing insecticide monitor changes in fly numbers more closely and act on any increased activity.
- Dispose of mushroom stalks and spent compost wisely. Do not stockpile.