NSW GOVERNMENT Department of Primary Industries

primefact

# Trapping blowflies

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**Garry Levot, Former Principle Research Scientist, Parasitology EMAI Menagle**
**Geoff Casburn Sheep Development Officer Wagga Wagga**

Over the years many wool producers have been interested in trapping or baiting blowflies as a means of reducing flystrike.

Various trap designs have been developed. Some are available from hardware stores and are primarily aimed at backyard use while others can be made or purchased for on-farm use.

As early as the 1930s offal and sodium sulphide baited traps were shown to attract and catch large numbers of blowflies and when used intensively were capable of reducing flystrike.

However, the effort required to produce and service sufficient offal-baited traps in this way is not cost effective and is not recommended.

To be efficient the bait must be attractive to blowflies and be placed in the vicinity of the blowflies.

The Australian sheep blowfly, Lucilia cuprina, is strongly associated with sheep so to be effective traps must be placed near the sheep and moved when the sheep are moved.

Most blowflies have evolved to breed in carcasses where there is intense competition between maggots for sufficient food. Some species have adapted to this competition by finding carcasses when fresh. These are known as ‘primary’ blowflies.

Other 'secondary' species, such as Chrysomya rufifacies, are attracted to already flyblown carcasses and have larvae which display aggressive behaviour towards other species to drive them from the carcass.

As a consequence, an offal-baited trap will attract ‘primary’ species for a while and then become attractive to the secondary species like Chrysomya rufifacies.

Although a primary species, Lucilia cuprina has adapted to breeding on live sheep to avoid competition with the other species. While still attracted to putrefactive odours emitted from decaying carcasses, Lucilia responds most strongly to sheep odours, particularly those associated with fleece rot infection, so offal-baited traps are not ideal.

## LuciTrap

To address this situation and to avoid capturing many 'non-target' blowflies the LuciTrap sheep blowfly trapping system was developed by the Queensland Department of Primary Industries & Fisheries in conjunction with the University of Queensland and the manufacturers Bioglobal Ltd.

The LuciTrap system consists of a specifically designed trap (Figure 1) containing a patented blend of chemicals (LuciLures) that mimic the odours of fleece rot, animal carcasses, urine and faeces.

Figure 1. LuciTrap

The trap consists of a translucent UV-stabilised plastic bucket and a removable flat, yellow lid with entrance cones that allow the sheep blowflies to enter but not leave.

The lid is attached to the bucket via a twist-and-lock design and has mounting holes for fixing to trees or posts. Brackets are built into the lid to hold the bottles of LuciLure.

Once uncapped, wicks in the top of each bottle emit the attractants into the air for up to six months. All three attractant bottles (LuciLure A, B and C) must be placed in the trap according to the manufacturer's instructions for the system to work.

Manufacturers recommend the use of one trap per 100 sheep. Trapping over a wide area is optimal and may require cooperation by neighbours.

Traps should be mounted at about sheep height and must be located near sheep, and places frequented by sheep, e.g. along water courses, near dams, tree lines, yards, sheep camps and shearing sheds. Any traps not catching blowflies should be moved to better locations.

The cost-effectiveness of the LuciTrap system should be considered carefully. Research has demonstrated that except for times when blowfly numbers are extraordinarily low (e.g. during prolonged drought) very few blowflies need be present before flystrike occurs in 'susceptible' sheep – it is the presence of 'susceptible' sheep rather than blowfly numbers that drives flystrike.

Of course, the more blowflies present when there are susceptible sheep, the greater the risk. In this regard LuciTrap offers the most effective 'early warning' for the presence of *Lucilia cuprina*.

Setting out LuciTraps in late winter and regularly checking the traps is an efficient way of finding out when the over-wintering blowfly population of sheep blowfly first emerges.

If there are susceptible sheep present at this time the flystrike risk is obvious. Apart from the need to move the traps when sheep are moved about the property, the traps need to be monitored to ensure sufficient lures remain, emptied of flies and cleaned occasionally.

LuciTrap is the most efficient trap for sheep blowfly and can be extremely useful in monitoring the presence of Lucilia cuprina.

Of course, this assumes that *Lucilia* is recognised and not confused with the other green blowflies. As such it is a useful tool as part of an integrated flystrike control program.

Wool producers should consider the cost effectiveness of the LuciTrap system and realise that at times of high flystrike risk LuciTrap alone will not provide adequate protection of their sheep.

The LuciTrap system is manufactured in Australia by:

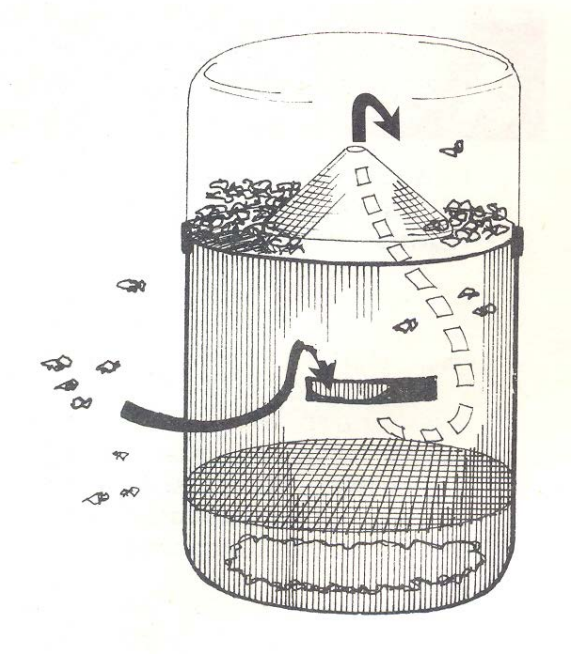
Bioglobal Ltd 12 Electronics street, Eight Mile Plains QLD 4113 Tel: 0732312421

## Bait bins and other blowfly traps

All blowfly traps rely on flies flying up odour trails to locate the source of the smell, entering the trap and being unable to escape the trap.

Most small home-made traps (see Figure 2) and traps like those available from hardware stores contain a very small entrance hole in an inverted cone. Once inside, the flies are unable to find the small hole and are trapped.

**Figure 2. Homemade blowfly trap.**

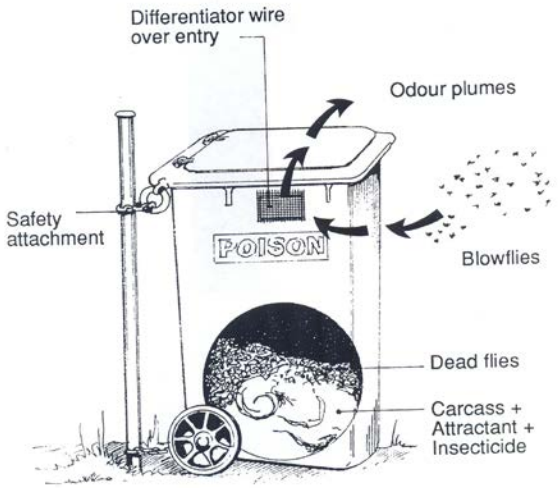


In the early 1990s interest in the use of large (200 litre) bait bins (Figure 3) constructed out of proprietary plastic garbage bins or metal drums was rekindled largely due to research into their use at the University of NSW, Fowler's Gap Arid Zone Research Station.

Although that research concluded that the bait bins did not reduce flystrike in the sheep flock, many producers were impressed by the sheer volume of flies that could be captured. They were sometimes mistaken in their belief that all green blowflies were *Lucilia*.

As the offal bait ages its attraction for *Lucilia* wanes and catches of the similarly green-coloured *Chrysomya rufifacies* and *Chrysomya varipes* increase. There is little to be gained by killing these secondary blowflies. Sheep flystrike is overwhelmingly caused by *Lucilia cuprina* and even when other species are involved in flystrike the initial attack is usually by *Lucilia*.

**Figure 3. Large bait bin fly trap.**

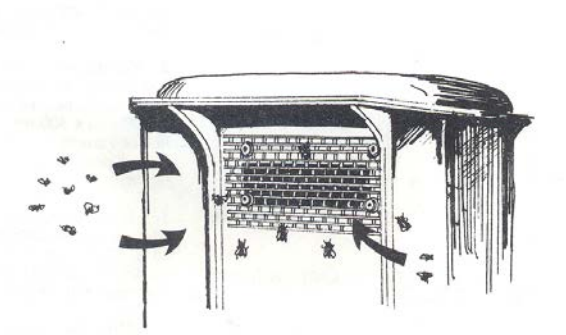



**The main influence preventing *Lucilia* breeding in carcasses is competition with these other species.**

Removal of this competition could be counter-productive. To address this to a degree the design of the fly entrances to bait bins was revised.

Mesh-covered entrance slots (Figure 4) that allow *Lucilia* to enter but mostly prevent the larger *Chrysomya* or *Calliphora* (brown blowflies) to enter were used.

**Figure 4. Mesh excluder fitted to bait bin fly trap.**



Stainless wire mesh on the side, with holes measuring 3.3 – 4 mm, were most successful. Larger bait bins did not incorporate the inverted cone entrances and blowflies could escape the trap by flying towards light entering the entrance slots.

The addition of an insecticide solution or aerosol insecticide spray to the offal/sodium sulphide bait and insides of the drum or bin overcame this problem but added to the cost and service requirements for efficient use.

If bait bins are to be used it is important that they are put into service at the correct time and maintained correctly.

They should be deployed in anticipation of blowflies becoming active (later winter/early spring in most areas) and be located near sheep or areas frequented by sheep.

Large UV-stabilised plastic garbage bins with wheels are most suitable and easily transported. Mesh covered entrance slots should be cut out high on two sides of the bin.

The bins should be painted yellow for optimal attractiveness to blowflies and well anchored to posts so that they cannot be knocked or blown over or washed away.

For bait a whole sheep carcass or part of a carcass is suitable. One litre of a 20% w/v sodium sulphide solution should be poured over the carcass to produce an instant stench that will pervade over several hundred metres. The lid must be shut and a catch installed to prevent interference.

Use a registered pesticide sprayed on the inside of the bait bin and over the bait to kill blowflies.

The number of bins required will vary with individual circumstances. Work at Fowler's Gap indicated that 2–3 bins would suffice on a property running around 1500 sheep.

When flies are not a problem weather-proof adhesive tape should be placed over the entrance slots to prevent the entry of non-target insects and prolong the life of the bait.

Whilst in use the service interval will depend on the temperature, abundance of flies, humidity, trap location, residual life of the insecticide spray, etc. Poorly maintained bait bins will be inefficient and become a nuisance.

## Caution

Irrespective of what pest you are targeting and which product you are using, always read the label thoroughly and make sure you understand it. If in doubt, ask the reseller or company representative.

Adhere to the withholding periods (WHP) and be aware that the export slaughter interval (ESI) may be longer than the WHP.

## Further reading

Primefact 485, *Sheep blowflies*.

## Always read the label

Users of agricultural or veterinary chemical products must always read the label and any permit, before using the product, and strictly comply with the directions on the label and the conditions of any permit. Users are not absolved from compliance with the directions on the label or the conditions of the permit by reason of any statement made or not made in this publication.

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