

GUIDELINES FOR COLLECTING, RELOCATING & RELEASING INSECT BIOCONTROL AGENTS

As a general rule be gentle when handling biocontrol agents to avoid damaging them.

How do I field collect control agents?

Refer to the specific information sheet for the species you are collecting, as the most appropriate technique varies for different agents. Be sure to check that it is the right time of year.

If you need to collect a certain number you can count each one with a pooter (see below) or estimate the number by sampling. For example, if on average you can collect 50 ragwort flea beetles in 10 minutes by vacuuming ragwort plants, then you know that you will need to do this six times in order to collect 300. Always err on the side of caution and release more agents than you need. Do not assume that you will collect the same number every time – check a sample each time you go collecting, and at each site.



How do I relocate control agents?

Plastic containers and paper bags can be used to house insects in transit. Plastic containers,

especially those with clear sides so you can see inside, are good provided you modify them to allow ventilation. Adequate ventilation is vital to prevent condensation as some insects will drown in free water.

How do I make a pooter?

A collection device known as a pooter, or aspirator, can be used to collect insects or transfer them from one container to another. To make yourself a pooter:

- Find some plastic tubing about 1 cm in diameter and 30 cm long, and a plastic container the size of a jam jar.
- Punch two holes in the lid of the container just big enough for the plastic tubing to fit through.
- Push the plastic tubing through the holes so that the bulk of the tube is above the top of the lid, leaving 1–2 cm below.
- Tie a piece of gauze securely around the short end (below the lid) of one tube.

How do I use a pooter?

- Attach the tube with the gauze end to a compressor. The gauze prevents insects from being sucked into the compressor. Do not use your mouth to provide suction as inhaling spores, scales etc may endanger your health.
- Turn on the compressor and check that the suction is not too strong. Put some plant material or tissue paper inside the jar to cushion the insects' fall.
- Position the end of the free tube over the insect to be collected and it will be sucked into the jar. When you turn off the compressor plug the end of the collecting tube with a piece of tissue paper or a stick so the insects cannot crawl back out.



- Make holes in the sides and lids of the containers and cover these with finely woven metal gauze or fabric like terylene mesh.
- Attach the metal gauze by heating it until it is red hot and then holding it firmly over the hole in the container. Alternatively attach the gauze or fabric with strong glue.
- Make a hole in the lid and plug it up with a cork or rubber bung. You can then add extra food or agents without removing the lid, reducing the risk of insects escaping.
- Make sure that lids and air vents seal well so agents cannot escape. Avoid lids that use rubber tubing to seal them, as small insects can crawl inside. If in doubt, sandwich a layer of terylene or grease-proof paper between the lid and the container.

Paper rubbish bags are good for transporting large volumes of material e.g. gorse thrips, broom psyllids, cinnabar caterpillars. The disadvantage is you cannot see inside, and the contents can be crushed. To seal the bag fold the top over several times and staple securely. Do not use plastic bags as they puncture easily, have no ventilation, and their contents can rapidly overheat.

Always put some plant material in your containers for food and protection. Plant material lasts longer if you make a bouquet by winding wet cotton wool round the base of the stems and sealing it firmly with clingfilm. Add tissue paper or paper towels to your containers to absorb excess moisture and provide places for the agents to hide (the padding also gives them a smoother ride).

Do not leave insects in the sun or a closed vehicle as high temperatures will kill them quickly. Keep them cool by packing containers in a chillibin with slicca pads. From time to time check that excessive condensation is not forming inside plastic containers. You can reduce condensation by wrapping the slicca pads in

paper so they are not in direct contact with containers.

Release the insects as soon as possible. If it is raining you can keep them inside in a cool place for a few days and, if necessary, add fresh plant material. Moths and flies should not be released in strong winds, and will appreciate some cotton wool soaked in a dilute sucrose solution (dissolve half a teaspoon of sugar in a cup of water). Wring out the cotton wool to remove excess moisture.

How do I release control agents?

Refer to the specific information sheet for the species you are releasing in case there is anything special you need to do. However, as a rule you will just need to wedge the plant material, containing the insects, into the new host plants. Tap the release container over a plant to dislodge any insects still inside. Spread the insects evenly around a number of plants in a 20 m radius so no one plant is overloaded but the insects are close enough to find each other again. When releasing moths or flies simply remove the lid from the container and allow them to fly away in their own time.

Mark the release site well so you can recognize it again later, and to warn others of its existence. Many release sites have been destroyed accidentally through misunderstandings. A sign can help to prevent mishaps as well as promoting awareness of biological control activities. To reduce the likelihood of people interfering with the site, avoid specifying exactly what has been released but include a contact name and phone number. Honeycomb polycarbonate is a good material to use for signs as it is strong, inexpensive, and writing can be printed directly on it.

You could erect a temporary fence around the site, until the agents are established, to prevent disturbances such as animals grazing the weed. However, a fence may be harmful if it allows other plants to grow and smother the weed. Contact Landcare Research if you need advice about whether or not to fence.

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