

Monitoring protocol for fire ants

This is a generic document which can be adapted to the needs of any territory. Place where territory-specific details needs to be added are indicated by the **yellow highlight**.

Monitoring is done by using protein and sugar baits placed in a grid or in a line. Each bait station consists of a small (eg 60ml) clear plastic vial or jar with a lid, placed on its side on the ground.

Mark out the grid or line of the bait stations:

Where the ant habitat is continuous, bait stations should be placed in rows 10 m apart, alternating between protein and sugar baits. Where the ant habitat is patchy, at least one of each bait type should be placed (minimum of one protein and one sugar bait stations within 15 square metres), ensuring they are at least 1 m apart. Bait can also be placed in trees, taped into position. See Table 1 for a list of favoured ant habitats.

Bait stations should be placed in the shade, if possible, as at temperatures above 28°C baits rapidly dry out, reducing their attractiveness to ants.

Mark the location of each bait stations with tape or spray paint spot.

Ant surveys should be done when temperature does not limit ant activity, early morning (6am - 10am) and late afternoon (3pm – 6pm).

Surveillance should not occur during or after rain, and the bait traps need to be deployed during a time when no rain is anticipated as no rain should occur between placement of bait traps and their retrieval.

Disturbance of the litter layer, soil or infrastructure at assessment points is considered beneficial to stimulate ant activity. If baits need to be placed within a forest environment, or within leaf litter, clear a patch of leaf litter to expose the soil before setting out the bait on the cleared ground. This will increase the chances of ants locating baits in these habitats as they also travel under and within the leaf litter and could miss baits.

Remove the lid, bait the vial and place it on its side on the ground at the bait station. Baits are as follows:

- a. Protein based bait: smear a line of peanut butter blended with vegetable oil (the size of half a pea) to the inner side of each bait container. In addition, place a slice of sausage, smear of tinned cat food, or piece of canned tuna inside each pot.
- b. Sugar based bait: smear a line of light coloured sugary jam (eg apricot or pineapple, with no lumps or seeds) to the inner side of each bait container.

See Table 2 for which species are attracted to which baits. Only fresh baits should be used as ants are not attracted to old baits.

Bait stations should be collected 1 – 2 hours after being laid.

As each vial is picked up, the lid is put on to prevent any ants escaping. Add some 70% alcohol to any vial containing ants to preserve them, and label the vial with:

- Date set and collected (if different)
- Bait used
- Location
- Name of the person in charge of the survey

All bait stations with ants should be sent to a competent authority to identify the specimens; more than one species could be found in a bait station.

Table 1. Favoured habitats for fire ants.

Vegetation:

- Tree trunks, tree crotches and hollows.
- Flowers, weeds and plant re-growth.
- Shrubs
- Low vegetation (including grass).
- Plant pot bases.

Built environment:

- Building edges and foundations.
- Hard seal (concrete/asphalt) slab edges.
- Cracked concrete/asphalt and junctions between pavers
- Drains and culverts.
- Electrical generators and fittings.
- Hot water pipes and heaters, air conditioning units.
- Wooden structures.

General:

- Fence palings.
- Loose gravel.
- Logs.
- Exposed rocks.
- Underneath stones, concrete rubble, timber and debris.
- Rubbish piles.
- Disturbed sites.

Table 2. Bait preferences for the species identified as priority for [territory; examples given below].

Scientific name	Common name	Protein bait	Sugar bait
<i>Monomorium destructor</i>	Singapore ant	Prefer peanut butter baits	Will come to sugar baits
<i>Tapinoma melanocephalum</i>	Ghost ant		Prefer sugar baits
<i>Anoplolepis gracilipes</i>	Yellow crazy ant	Prefer protein baits	
<i>Paratrechina longicornis</i>	Longhorn crazy ant	Will come to both protein and sugar baits	
<i>Wasmannia auropunctata</i>	Little fire ant (LFA)	Prefer protein baits	
<i>Solenopsis invicta</i>	Red imported fire ant (RIFA)	Prefer protein baits	

Adapted from: PII. 2013. Delimiting Surveys for Invasive Ants. Pacific Invasives Initiative, Auckland, New Zealand.