Department of Agriculture and Food
GOVERNMENT OF WESTERN AUSTRALIA

Note: 421
March 2010
Replaces Note: 173

Gardennote

Big-headed ants, coastal brown ants

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Big-headed ants, *Pheidole megacephala*, also called coastal brown ants, are a major nuisance ant species in Western Australia. They are an urban pest and are often seen in lawns and in brick paving, which they tend to undermine. This Garden*note* describes ways to identify big-headed ants, discusses their biology, and advises on effective control methods. Control procedures outlined here are specific to big-headed ants and may not be effective on other ant species. Therefore, it is wise to have pest ants identified before attempting control as this can save time and money. The Department of Agriculture and Food offers this free service. See treatment section for details.

Description

Big-headed ant is an introduced species of African origin. Look for:

- small, light ginger-brown coloured ants, with shiny dark brown abdomens
- the presence of two very different-sized 'castes' (types determined by their function) of worker ants, that is:

– smaller 'minors' - 2 to 3 mm long and

– a larger 'major' caste - 3.5 to 4.5 mm long, which has a very obvious, much larger head and which makes up about 1 per cent of the population. The 'major' caste of worker ants are not primarily soldiers for defence. Instead, their powerful jaws are used for cutting up large pieces of food into small pieces which can more easily be transported back to the nest by the more numerous minors.

- ants with no obvious odour when crushed.

Biology

There are multiple queens in the nests and nests are interconnected. New colonies are formed by budding whereby one or more queens with attendant workers leave an existing nest and walk to a nearby location. Rarely are new nests established by flying, mated queen ants.

While these ants can sting, the sting does not cause discomfort to humans. Big-headed ants

Big-headed ant workers (one major and many minor caste workers) under the microscope.

are particularly active in late summer, autumn and early winter. They nest outside in the ground and only occasionally invade dwellings when populations outside are very high. However, invasions of dwellings can be severe. These ants prefer meat or fat/oil-based foods.

Big-headed ants can form 'super-colonies' when their interconnected nests act as a single colony. The worker ants of such an infestation can occupy many hectares and they cooperate in ways similar to a single colony. In these situations they can displace native ant species and be the only ant species present in a heavily infested area. Big-headed ants are specialists in invading disturbed areas and are therefore ideally suited to urban developments. There are native species belonging to the genus *Pheidole* but these are rarely ever pests, and tend to be found in undisturbed habitats where they are predominantly seed-harvesters.

Symptoms

Infestations of big-headed ants are characterised by lines of inter-connected holes and small mounds of excavated soil. Excavations can be so extensive that brick paving is destabilised and the roots of plants and the lawn can become so aerated that the plants subsequently die by drying out. Often the small worker ants are hard to see, but foods put out for pets can become covered in ants.

Look for two distinctly different-sized ants on a food source, with the larger worker ants having a disproportionately larger head.

Paving undermined by big-headed ants

Treatment

Correct identification of the ants is crucial before commencing any control procedures. The Department of Agriculture and Food provides a free identification and advisory service.

Stick about a dozen specimens, with clear sticky-tape, to a piece of paper containing your contact details. Ensure the surface the ants are collected from is clean to prevent picking up sand and other debris which can allow the ants to escape from under the sticky tape.

Control treatments

The most effective treatment is to use oil-based baits containing the active ingredient hydramethylnon, and available under various trade names which are available at your local chemical retailer or hardware store. The ants collect the small particles and take them back to their numerous nests where complete control of the colony can be achieved.

These baits must be broadcast over the infested areas as per instructions on the product label. The baits should never be heaped around ant mounds as this not only increases the risk to non-target organisms but is far less effective in the control of big-headed ants. While expensive, a small 170 g container is sufficient to treat a normal-sized urban block. The entire area should be treated as infestations exist in lawns and garden beds and can quickly re-invade treated areas if only a small area of obvious infestation has been treated. If the entire property is treated it may take two to three months or longer before it is re-colonised from untreated neighbouring properties.

Mechanical hand-held rotary or spinning-disc spreaders, designed to distribute small granules, are ideal for evenly applying the baits. It may be necessary to dilute the bait evenly with clean, dry sand to ensure that the application rate is sufficiently low to allow coverage of the entire area. If using a fertiliser spreader, ensure it is clean so that the bait is not tainted with fertiliser residue which might stop the ants collecting the bait and taking it back to the nest.

Keep the bait in a cool, dry location when not in use. Since the bait attractant is oil, the bait can become rancid and unattractive to the ants if it is not stored correctly.

Bait application

Bait should be broadcast when the ants are most active – this varies with the season:

Hot weather in summer – apply the baits before 9.00 am or after 4.00 pm

Cold weather in winter – apply baits between 10.00 am and 3.00 pm

Baits should remain dry for 12 hours after being applied. Therefore, do not apply if rain is expected and ensure irrigation does not come on within 12 hours of application.

Correct application of bait outside the building will also cure ant infestations where they are infesting indoors. Do not apply the bait indoors.

Protection of pets and wildlife

When applied correctly (broadcast) the baits should not present a risk to pets and birds. Bait should not be applied directly inside bird cages. The baits can be toxic to fish and aquatic invertebrates, so take care not to contaminate ponds and waterways.

Don't spread big-headed ants

Apart from the natural radial expansion of existing colonies, big-headed ants are spread unintentionally through transport by humans via a wide range of commodities, including soil, pot plants, foodstuff and garbage. Several plant nurseries in metropolitan and country areas are infested with big-headed ants and present a risk of spread. Be sure to check that pot plants or any other plant material you may receive – even from friends, are free of ants.

If you are moving house and taking pot plants with you, or giving pot plants to friends, check that the pots are free of ants or treat the pots by immersing the pot for 30 seconds in a solution of an insecticide registered for control of ants.

Specimen identification requirements

When sending or delivering samples, the following information is required:

Collector's name, location (where the specimen was found), full address, telephone number and e-mail address, description of the damage and date collected.

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1793-08/06-ID6531

ISSN 0726-934X

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