



Chartered
Institute of
Environmental
Health



Pest control procedures manual

Social insects – ants, wasps & bees

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1 Introduction

Ants

Ants are among the most prevalent pests in households, but can also invade restaurants, hospitals, offices, warehouses, and other buildings where they can find food and water – being particularly attracted to sweet substances such as sugar or honey. However, ants also perform many useful functions in the environment, such as feeding on other pests (e.g., fleas, caterpillars, and termites), dead insects, and decomposing tissue from dead animals.

Although ants are not inherently of public health concern, they may walk across unclean or contaminated areas during their foraging. When one foraging worker ant successfully locates a food source, it is able to communicate this information to its co-workers which can lead to vast numbers of worker ants invading and contaminating surfaces and foods.

Whilst there are 41 different species of ant living in the UK, this guide will focus on the most prevalent in the UK:

- Garden or black ant (*Lasius niger*) - native of the UK and readily enters buildings in search of food;
- Pharaoh's ant (*Monomorium pharaonis*) - of tropical origin and has taken advantage of heated premises, notably hospitals and high rise flats;
- Argentine ant (*Iridomyrmex humilis*) - also requires high temperatures but can thrive on a variety of foods;
- Roger's ant (*Hypoponera punctatissima*) - prefers damp locations, particularly in crevices around drains, and is not confined to heated premises.
- Ghost Ant (*Tapinoma melanocephalum*) - nesting habits are similar to the Pharaoh's Ant. Exhibits a high need for moisture and can nest in small spaces such as cracks or wall voids.

Wasps and bees

Wasps and bees are both beneficial and problematic. Wasps, being predators and scavengers, play an important role in the control of other pest insects and recycle organic materials. Bees are essential pollinators of plants and producers of products such as honey and wax.

Whilst not of direct public health concern, both can vigorously defend their nests and utilize stinging as their primary defence mechanism. However, wasps frequently become an increased nuisance toward the end of the summer months, when the queen wasp stops laying eggs and the workers no longer need to collect food. Although the sting of a bee or wasp is painful, it is usually not life threatening. However, some individuals are extremely sensitive to the sting and may experience serious or even fatal allergic reactions.

Whilst there are numerous species of wasp and bee, this guide will focus on the most prevalent in the UK:

- Wasp (*Vespula vulgaris*);
- Nesting bees – i.e. Bumble bee (*Bombus*), Honey bee (*Apis mellifera*);
- Solitary bees – i.e. mason bee (*Osmia rufa*), Mining bee (e.g. *Andrena fulva*) and Leafcutter bee (*Megachile* sp.)

This manual is intentionally prescriptive, but it does not intend to dictate the methods by which Pest Control Technicians organise their work, if the same level of service and safety is achieved - for example, the use of computerised records or ISO accredited quality systems.

It is hoped that by clearly stating the minimum requirements that a Pest Control Technician should take into account when conducting any social insect treatment, that consistent standards can be achieved throughout the industry, allowing it to develop and improve for the future.

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Identification and biology: Ants



General

To ensure effective and efficient control, it is essential that the target insect is suitably identified. The initial risk assessment, conducted as part of any pest control treatment, must properly identify the insect pest species (using an appropriately qualified entomologist if necessary) before a pesticide treatment can take place

The Technician should aim to obtain physical evidence of insect activity, rather than rely solely on information provided by the customer. If evidence of the relevant insect is not found, but problems persist, other causes should be investigated.

Identification

Ants belong to the insect order Hymenoptera and are close relatives of bees and wasps. Ants are familiar insects that are easily recognized, especially in their common wingless adult forms, known as workers. However, ants undergo complete metamorphosis, passing through four different life stages: egg, larva, pupa, and adult. Winged forms of ants, which leave the nest in large numbers in warm weather to mate and establish new colonies, can be mistaken for winged termites, which also leave their nests to mate.

All ants possess:

- Elbowed antennae;
- Biting mouthparts;
- A narrow waist between the abdomen and thorax.

Larvae are immobile, wormlike, and don't resemble adults. Ants, like many other hymenopterans, are social insects with duties divided among different types, or castes, of adults. Queens conduct the reproductive functions of a colony and are larger than other ants; they lay eggs and sometimes participate in feeding and grooming larvae. The sterile female workers gather food, feed and care for larvae, build tunnels, and defend the colony; these workers make up the bulk of the colony. Males don't participate in colony activities; their sole purpose is to mate with the queens. Workers feed and care for males, which are few in number.

Biology

Ants live in colonies founded by a single, fertile female or queen. In some tropical species, several new queens remain in the parent nest. All spend most of their time laying eggs. There is generally only one queen in colonies of the garden ant. In contrast with most other insects, ant larvae are fed until they become adult.

A particular feature of mating in the garden ant is the swarming which usually occurs in summer, when winged males and females leave the nest. The swarming period of flying ants is of short duration and signifies the beginning of the breakdown of the nest. Swarming also occurs in the Roger's ant. At such times the winged females (the few males are wingless) may be found in considerable numbers on window-sills or in electronic flying insect killer catch trays.

In contrast, Pharaoh's ant queens have wings, but rarely fly. They form new colonies by "budding", taking a few workers from the parent nest and moving to a new site a short distance away. Both garden ants and Pharaoh's ants lay pheromone trails which are then followed by other worker ants to food sources. Proteins (meat, nuts, cheese, and blood) are the preferred foods of Pharaoh's ants. Garden ants also feed on these foods, together with sweet foods. Like some other insects they also collect seeds and nectar and feed on "honeydew" from aphids.

Roger's ant does not follow scent trails and seems to feed exclusively on protein such as dead insects, also small insect pupae and springtails, which they sting, then drag back to the nest.

Evidence

Indications of an ant infestation include:

- Live ants in a single location or following defined trails away from a nest;
- Hatched or un-hatched eggs;
- Large numbers of winged ants in, or emerging from, a nest;
- Accumulations of small amounts of earth adjacent to nest holes in ground or structure;
- Customer complaints.

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Identification and biology: Wasps and bees



General

To ensure effective and efficient control, it is essential that the target insect is suitably identified. The initial risk assessment, conducted as part of any pest control treatment, must properly identify the insect pest species (using an appropriately qualified entomologist if necessary) before a pesticide treatment can take place.

The Technician should aim to obtain physical evidence of insect activity, rather than rely solely on information provided by the customer. If evidence of the relevant insect is not found, but problems persist, other causes should be investigated.

Identification

Bees and wasps belong to the insect order Hymenoptera. All bee species and most wasp species are winged. Bees can be distinguished from wasps by their stout, hairy bodies, whereas wasps have relatively smooth, slender bodies. Another important difference between bees and wasps is their stinger. Bees have barbed stingers. Therefore, bees can only sting once, leaving the stinger within the victim. Wasp stingers lack the barb so wasps can sting multiple times in defence of their nest.

Bees and wasps experience complete metamorphosis, passing through four different life stages: egg, larva, pupa, and adult. Larvae are blind and legless, whereas the pupal stage is a non-feeding, immobile stage wherein the larvae transform into adults.

Biology

Wasps and bees can be classified as solitary or social depending on whether they live alone or in colonies. The social species of wasps and bees live together in highly organized communities where they share food resources and cooperate in raising the young. These nests can contain thousands of individuals, all with the ability to sting.

Wasps differ from bees in that the wasp nest structure is not reused, as the new queen will begin the construction of a new nest each year. The queen wasp lays eggs in the nest which hatch into larvae within a few days. 4-6 weeks after the eggs are laid the first generation of workers emerge. These are female wasps and are smaller than the queens and take over responsibility for maintaining the nest and finding food, in particular high protein foodstuffs for the larvae such as flies, caterpillars, or spiders. The queen then devotes all her time to laying eggs and by the end of the summer the nest may contain 20,000 or more wasps. In the autumn the new queens and males are produced which mate and the fertilised queens search for hibernation sites.

Bees and wasps become increasingly abundant and active from spring as the temperature rises and food sources become more available. Bees feed on nectar and pollen from flowering plants, whereas wasps feed primarily on protein sources, such as spiders and insects, but will also readily feed on sugar sources.

Wasps, because of their food preferences often scavenge around humans, whereas bees will usually avoid humans if possible. However, if the colony is threatened both insects will vigorously defend their nest. A colony can be easily and inadvertently disturbed - for example: stepping on an underground nest opening, agitating a tree or bush containing an aerial nest, or even walking past a previously agitated nest.

If bees or wasps or their nests have become a nuisance, remember that control can be a hazardous undertaking and should only be done after considering appropriate safety precautions detailed later in this guidance.

By contrast, solitary species construct galleries of mud wherein they keep paralysed spiders and other prey. Upon laying an egg within the gallery, the female seals it shut, thus leaving a plentiful food supply for the next generation. These insects are normally quite docile and rarely attack people, but may still sting if provoked. If significant numbers of galleries are located closely together, this can result in customers incorrectly believing the emerging insects to be wasps or the activity associated with a nest.

Evidence

Indications of wasp or bee nest or activity include:

- Presence of large numbers of wasps or bees – this may include swarming or aggregating (of solitary bees).
- Foraging wasps flying either towards or away from a nest – the body of the nest may not be visible due to location;
- Presence of solitary bee galleries in loose mortar brickwork or areas of soft earth / mud;
- Wasp or bee activity observable from the entrance of the nest.

Inspection and assessment



Ants

An inspection to ascertain the presence and dispersion of an ant infestation is important. The Technician will need unobstructed access to all areas of the affected premises. Monitor for ants near attractive food sources or moist areas. Ants may invade kitchens, bathrooms, offices, or bedrooms. Inspect under sinks, in cupboards, and along pipes and electrical wires. Look for large trails of ants or solitary insects – which may be searching for food or nesting sites. If ant trails are spotted, ideally follow the ants to where they are entering the building and to the nest if possible. Look indoors and outdoors for holes or cracks in foundations or walls that provide entry points to buildings.

The Technician may also require suitable Personal Protective Equipment (PPE), the type and nature of which will depend upon whether the Technician is assessing ant potential activity or conducting an insecticide treatment. Any PPE must therefore be provided in accordance with the insecticide manufacturer's instructions and following a suitable and sufficient risk assessment.

The aim of the inspection is to provide sufficient information for the Technician to assess the dispersion and severity of ant activity so the treatment can be planned accordingly. Sufficient details must be taken to ensure accurate records can be made, noting the areas where evidence of activity has been found. A room site plan may be needed to assess the location and degree of any activity. Adjoining rooms and spaces (either side, above and below), should also be similarly inspected.

Based on the evidence from the inspection, confirm the existence of any ant activity and record the details.

Wasps and bees

Control can only be achieved by removing or destroying the entire nest. Wasp and bee nests can be found by looking for signs of insect activity, which will be most active on warm sunny days. Nests can be found in numerous locations including underground, under eaves, in wall voids and in trees. The Technician should also inspect bushes, logs, rock piles, and other protected sites for the presence of nests. Entrance holes sometimes have bare earth around them. The Technician should watch the flight of the insects to locate nest openings.

Sites that have regular wasp or bee activity should be regularly inspected during the spring and early summer. This will allow the detection of younger, less developed nests, which will be easier to remove or destroy than mature nests.

In assessing the activity of a nest or deciding to conduct a treatment, the Technician should consider:

- Whether people been stung or are at risk because of the location of insect activity;
- The location of nest and whether the treatment be carried out safely and legally (see later section on chemical treatments);
- If the nest is not causing any risk to public health, then consideration should be given to not conducting any insecticide treatment or use of a non-chemical alternative;
- With regard to honey bees, if the swarm has only recently formed and is easily accessible, it is likely that it could be collected and re-housed in a suitable hive. If the Technician does not have the expertise to do this, the local branch of the British Beekeeper's Association should be contacted.

The Technician will also require suitable PPE whether assessing a potential nest, physically removing wasps/ bees or conducting an insecticide treatment. Any PPE must therefore be provided in accordance with the insecticide manufacturer's instructions and/or following a suitable and sufficient risk assessment.

5 Treatment methods



Non-chemical methods: Ants

Ant control requires diligent efforts and the combined use of physical and chemical control methods. It is unrealistic and impractical to attempt to totally eliminate ants from an outdoor area. Efforts should be focussed on excluding ants from buildings and eliminating their food and water sources. Reducing outdoor sources of ants near buildings will reduce the likelihood of ants coming indoors.

Accordingly, non-chemical options should be considered as management tools and only utilised to reduce the overall ant population as part of an Integrated Pest Management program.

Habitat Modification

To keep ants out of buildings, cracks and crevices around foundations and other sites that provide entry from outside should be caulked or blocked. Ants prefer to make trails along structural elements, such as wires and pipes, and frequently use them to enter and travel within a structure to their destination, so the Technician should look for entry points in these locations.

Within buildings, the following should also be considered:

- Elimination of cracks and crevices wherever possible - especially in kitchens and other food-preparation and storage areas;
- Attractive food items such as sugar, syrup, honey, and pet food should be stored in closed containers that have been washed to remove residues from outer surfaces;
- Rinse out empty soft drink containers or remove them from the building;
- Thoroughly clean up grease and spills;
- Remove rubbish from buildings daily and change bin liners frequently;
- Look for indoor nesting sites, such as potted plants. If ants are found in potted plants, remove the containers from the building;
- Outdoor ant nests may be associated with plants that support large populations of honeydew-producing insects. Avoid planting such trees and shrubs next to buildings;
- Keep plants, grass, and mulch several inches away from the foundation of buildings, because these items provide nesting sites for ants.
- Fix leaking water taps / valves / sprinkler heads.

Non-chemical methods: Wasps and bees

Complete elimination of a wasp or bee is unlikely unless insecticides are used. Due to their stinging nature, the physical removal of bees and wasps is

difficult. Yet, if careful action is taken, physical removal is possible. If the Technician is considering physical removal, suitable PPE should be worn.

Physical removal

Nest removal is possible if suitable precautions are taken. This course of action may be appropriate if an acute problem persists and chemical controls would not provide an immediate resolution. This approach is best suited to nests that are in an accessible area. A strong polythene bag can be used to enclose the nest and the base of the nest can then be severed and the nest removed and treated with insecticide at a more suitable location.

Habitat Modification

For sites that routinely experience wasp and bee activity, such areas can be made less habitable, including:

- Rubbish bins can be fitted with close fitting or spring-loaded lids;
- Rubbish should be regularly emptied frequently enough to prevent the contents from impeding the closure of the lid;
- Rubbish bins should be periodically cleaned of food wastes;
- Repair windows, door frames, broken / missing brickwork, rendering or mortar;
- Caulk holes in structure siding. Routine inspections for wasp and bee activity – possibly at the same time as inspections for other pests such as rats, mice, etc.

Chemical methods: Ants

Choice of formulation

The type of formulation selected for the treatment will be dependent on its usage patterns. For example, dusts can be used in areas occupied by electrical equipment and/or wall voids, whereas liquid or gel formulations can be utilised in more obvious locations. Aerosol insecticides can also be used for a 'quick kill' – particularly of flying ants.

Application and use of insecticide

Only approved products must be used.

The insecticide must be directed to all areas identified in the inspection, in accordance with manufacturer's instructions.

Suitable application methods and PPE should be used in accordance with the manufacturer's instructions and a suitable and sufficient risk assessment. However, the use of extension nozzles allows the insecticide to be accurately applied.

Chemical methods: Wasps and bees

General

Because of the beneficial role of wasps and bees in the environment, the Technician should consider whether the use of insecticide is necessary. Where such treatments are conducted, the Technician should ensure the product is used in accordance with the manufacturer's instructions and following a suitable and sufficient risk assessment. The Technician should be particularly aware of the risk to non-target species.

The treatment of feral bee colonies with insecticide should be considered only if other methods of control are not feasible or found to be ineffective. Products approved under the Control of Pesticides Regulations, 1986 (as amended) for use against feral bee colonies include the requirement that "Action should be taken to prevent foraging bees gaining access to treated nests, preferably by removing the combs or blocking the nest entrance". This is because foraging non-target honey bees may find a nest which has been treated and carry away contaminated honey, which can lead to contamination of honey destined for food use or lead to the destruction of hives.

It is therefore of paramount importance that the entrance to treated honey bee nests are suitably blocked to prevent non-target bee access. The Technician should take particular note of this requirement when requested to treat a nest located at height or in chimney pots / stacks / flues or similar. Where access to the nest cannot be blocked following treatment, it is strongly recommended that no treatment be carried out until arrangements have

been put in place to remove the treated honeycomb, which may involve the partial demolition and rebuilding of the premises.

Technicians should also note that treated honeycomb is considered as hazardous waste and should be disposed in accordance with the guidance provided at the end of this document.

Choice of formulation

The type of formulation selected for the treatment will be dependent on its usage patterns. For example, dusts can be used in areas occupied by electrical equipment and/or wall voids, whereas liquid formulations can be utilised in more obvious locations. Aerosol insecticides are available that are specifically designed to break down the structure of the nest and can offer a 'quick kill'.

Application and use of insecticide

Only products approved under the Control of Pesticides Regulations, 1986 (as amended), or authorised under the EU Biocides Regulations (528/2012) must be used, and the product should be used in accordance with its approval/authorisation conditions.

The insecticide must be directed to all areas identified in the inspection. Suitable application methods, and PPE should be used in accordance with the product's instructions and a suitable and sufficient risk assessment. However, the use of extension nozzles allows the insecticide to be accurately applied.



6

Treatment processes – Domestic properties: Ants



Successful ant control using insecticide takes a great deal of time and effort as nests are frequently inaccessible and difficult to destroy. As previously indicated, sufficient prior planning is essential to a successful treatment. In deciding the approach the Technician will take to control ant activity, it may be helpful to provide a plan detailing how the treatment will be undertaken. The treatment methods contained in the previous section in addition to the information contained in the following sections will be of assistance in this process.

In combination with removing potential food sources, the use of insecticidal baits will allow the ants to take an adequate quantity of the bait back to the brood and queens in the nest. Therefore the customer should be directed to:

- Keep all food in sealed containers;
- Do not leave food scraps lying around;
- Keep all refuse in sealed containers;
- Do not leave refuse in the house overnight – it should be removed to an outside dustbin;
- Regularly clean all kitchen work surfaces, equipment and utensils;
- Vacuum all floors regularly especially paying attention to food spills and waste;
- Pull out and clean behind and around all cookers, refrigerators, washing machines and other moveable equipment.

Pharaoh's Ant

Pharaoh's ants build several small nests throughout a building unlike the common black ant which builds one large nest. Due to the Pharaoh's ant small size, they often form nests within the fabric of a building - for example inside walls or insulation. Because of the way they infest a building, the use of a spray insecticide will be problematical because:

- The nest, brood and queen ants are often inaccessible;
- A spray insecticide will not make contact with all of the ants, often causing them to spread into inaccessible areas of a building, and also to breed faster.

In combination with removing potential food sources, the use of insecticidal baits will allow the ants to take an adequate quantity of the bait back to the brood and queens in the nest. Therefore the customer should be directed to:

- Keep all food in sealed containers;
- Do not leave food scraps lying around;
- Keep all refuse in sealed containers;
- Do not leave refuse in the house overnight – it should be removed to an outside dustbin;
- Regularly clean all kitchen work surfaces, equipment and utensils;
- Vacuum all floors regularly especially paying attention to food spills and waste;
- Pull out and clean behind and around all cookers, refrigerators, washing machines and other moveable equipment.

Ant activity not present

Explain to the occupier that there is no evidence of ant activity and reassure the occupier that a revisit can be arranged if any activity reoccurs.

As a minimum, the following details must be recorded:

- Details of the premises (including any specific job reference);
- Name of Technician who attended;
- The date of visit;
- The areas surveyed;
- The result of the survey confirming that ant activity was not identified;
- Any other information that may be of relevance (for example, any previous history of activity at the premises).

Close down the complaint making comments on the job sheet or electronic record.

Uncertain conclusion

If there is no evidence of any insect activity and either the occupier will not accept the situation, or there are reasons that may give the Technician concern that insect activity may be present, then consideration must be given to either using monitoring devices and/or revisiting with Supervisor/Manager.

Provide information and advice to the occupier on improving standards of hygiene, housekeeping if necessary.

Inform the occupier that a revisit can be made within 2 to 3 weeks.

As a minimum, the following information must be recorded:

- Details of the premises (including any specific job reference);
- Name of Technician who attended;
- The date of visit;
- The areas surveyed;
- The evidence of potential ant activity;
- The location, amount and type of monitoring devices;
- Any other information that may be of relevance (for example, any previous history of activity at the premises).

Report circumstances to relevant Supervisor/Manager.

Ant activity confirmed

The aim of the treatment is to achieve complete eradication of the ant activity within the building and therefore the following should be recorded:

- The findings of the inspection (including where ants were evident, the degree of the infestation etc.);
- The treatment process itself including any integration of non-chemical means of control and the insecticides to be used;
- Any instructions to be provided to the occupier for the treatment;



- Any requirement to inspect adjoining rooms / buildings (both vertically and horizontally);
- Any recommendations to the occupier, including housekeeping/hygiene improvements.

Method of treatment

Before any treatment is applied, a full written on-site risk assessment must be carried out. As a minimum, the risk assessment should take into account the nature of the treatment as well as the presence of young children, pets and elderly infirmed people.

It is important to note that not all surfaces can be treated by all chemical and non-chemical means. The instructions on product labels should be carefully followed. Care should also be taken around electrical equipment, where the use of water based insecticides and/or should be avoided.

If using an insecticide:

- Apply a continuous band of insecticide around all points of entry such as doors, windows, ventilators, ducts and drains to form a barrier both internally and externally;
- Treat all wall and floor junctions, ant runs and harbourages;
- Give particular attention to small, insignificant cracks, which may be major points of entry for ants;
- Any flying ants inside can be treated with a suitable aerosol insecticide.

Some 'delayed action' insecticide baits can be very effective in destroying ants' nests. The worker ants transport the insecticide back to the nest, which is then destroyed.

The Technician should explain the nature of the treatment and any specific safety requirements to the occupier and provide an appropriately annotated (safety data sheet) advice sheet - highlighting the premises address, the date, what product has been used and what action to take in cases of an emergency.

Manufacturer's instructions must be followed with regard to any advice provided post treatment.

As a minimum, the following information must be recorded:

- Details of the premises (including any specific job reference);
- Name of Technician who attended;
- The date of visit;
- The areas surveyed;
- The evidence of ant activity, including any contributory factors;
- Relevant site information including the presence of young children, pets and elderly infirmed people;
- The location, amount and type of insecticide used (including suitable diagram);
- Any other information that may be of relevance (for example, any previous history of activity at the premises);
- Proposed date of follow up visit (if any).

Second or subsequent visits

Carry out inspection of the affected area for evidence of ant activity. Inspection procedures should follow those stipulated earlier in this manual.

Confirm continued activity by visual verification of evidence of ants as previously indicated.

Re-evaluate hygiene and housekeeping standards within the premises.

If substantial changes have occurred that could affect the safety or success of the treatment, a new on site risk assessment should be completed. Similarly, if a different Technician attends the premises, than from the previous treatment, a record must be kept as to whether the Technician agrees with the on site risk assessment. Where the Technician disagrees with the assessment, a new on site risk assessment must be completed.

If ant activity remains

Extend inspection to other areas of the premises to verify that infestation is contained and extend treatment regime as required.

Retreat affected areas as appropriate following manufacturer's instructions. A record must be kept of all insecticide used when retreating any area.

As a minimum, the following information must be recorded:

- Details of the premises (including any specific job reference);
- Name of Technician who attended;
- The date of visit;
- Any changes in the premises that could affect the safety or success of the treatment (completing a new on site risk assessment if necessary);
- The evidence that ant activity still exists;
- The degree of activity observed and the amount of new insecticide used;
- The location, amount and type of insecticide used (including amendments to the site plan);
- The nature of any hygiene housekeeping carried out or still outstanding;
- Any other information that may be of relevance (for example, any previous history of activity at the premises);
- Proposed date of follow up visit (if any).

Explain nature of treatment, hygiene/housekeeping requirements and any safety requirements to occupier.

Estimate timing of next visit and inform occupier, this will generally be within 7 days.

If control has not been achieved after 3 visits, a revisit with Supervisor/Manager should be arranged and the control strategy examined and reassessed. Further discussions should also take place with the occupier to ensure that ant activity is not being inadvertently prolonged.

Completion

When no further signs of activity are observed or reported by the occupier explain the situation to the occupier and restate any outstanding preventative works or hygiene/housekeeping issues that require attention.

Close down the complaint and maintain suitable permanent record of all notes, on site risk assessments, insecticide treatment records, copy letters and other relevant documents.

7

Treatment processes – Domestic properties: Wasps and bees

The approach to a wasp or bee treatment should take into account of the size and nature of a property and therefore can be applied to both domestic and commercial property. The Technician will need to consider:

- Whether suitable access can be made to conduct the treatment safely and legally;
- The numbers of people that may be put at risk by the presence of the insect activity / nest or whilst conducting the treatment;
- The method of treatment, given any physical constraints.
- The size of the nest/swarm and the level of insect activity

Treatments using insecticides must be undertaken carefully. The nest will become very active during the treatment and the Technician must be provided with suitable PPE (as directed by the insecticide product label and a suitable and sufficient risk assessment) to undertake the treatment. Similarly, the customer must be warned of the increased activity and take appropriate precautions. Any risks arising from the treatment must be recorded on the on-site risk assessment.

As previously indicated, sufficient prior planning is essential to a successful treatment. The treatment methods contained in the previous section in addition to the information contained in the following sections will be of assistance in this process.

Wasp/bee activity not present

This may be because the occupier has mistaken the wasp / bee activity for solitary bees. Explain to the occupier that there is no evidence of activity and reassure the occupier that a revisit can be arranged if any activity recurs.

As a minimum, the following details must be recorded:

- Details of the premises (including any specific job reference);
- Name of Technician who attended;
- The date of visit;
- The areas surveyed;
- The result of the survey confirming that an infestation was not identified;
- Any other information that may be of relevance (for example, any previous history of activity at the premises).

Close down the complaint making comments on the job sheet or electronic record.

Uncertain conclusion

If there is no evidence of any activity and either the occupier will not accept the situation, or there are reasons that may give the Technician concern that wasp/bee activity may be present, then consideration must be given to either using monitoring devices and/or revisiting with Supervisor/Manager.

Provide information and advice to the occupier on improving standards of hygiene, housekeeping if necessary.

Inform the occupier that a revisit can be made within 2 to 3 weeks.

As a minimum, the following information must be recorded:

- Details of the premises (including any specific job reference);
- Name of Technician who attended;
- The date of visit;
- The areas surveyed;
- The evidence of potential activity;
- The location, amount and type of monitoring devices;
- Any other information that may be of relevance.

Report circumstances to relevant Supervisor/Manager.

Wasp/bee activity confirmed

The aim of the treatment is to achieve complete eradication of the insects and therefore the following should be recorded:

- The findings of the inspection (including where wasps/bees were evident, the degree of the activity etc.);
- The treatment process itself including any integration of non-chemical means of control and the insecticides to be used;
- Any instructions to be provided to the occupier for the treatment;
- Any requirement to inspect adjoining rooms / buildings (both vertically and horizontally);
- Any recommendations to the occupier, including housekeeping/hygiene improvements.

Method of treatment

Before any treatment is applied, a full written on-site risk assessment must be carried out. As a minimum, the risk assessment should take into account the nature of the treatment as well as the presence of young children, pets and elderly infirmed people.

It is important to note that not all situations can be treated by all chemical and non-chemical means. The instructions on product labels should be carefully followed. Care should also be taken around electrical equipment, where the use of water based insecticides and/or should be avoided.

The Technician should explain the nature of the treatment and any specific safety requirements to the occupier and provide an appropriately annotated (safety data sheet) advice sheet - highlighting the premises address, the date, what product has been used and what action to take in cases of an emergency.

Manufacturer's instructions must be followed with regard to any advice provided post treatment.

As a minimum, the following information must be recorded:

- Details of the premises (including any specific job reference);



- Name of Technician who attended;
- The date of visit;
- The areas surveyed;
- The evidence of activity, including any contributory factors;
- Relevant site information including the presence of young children, pets and elderly infirmed people;
- The location, amount and type of insecticide used (including suitable diagram);
- Any other information that may be of relevance;
- Proposed date of follow up visit (if any).

Second or subsequent visits

Carry out inspection of the affected area for evidence of wasp/bee activity. Inspection procedures should follow those stipulated earlier in this manual.

Confirm continued activity by visual verification of evidence of wasp/bee as previously indicated.

Re-evaluate hygiene and housekeeping standards within the premises.

If substantial changes have occurred that could affect the safety or success of the treatment, a new on site risk assessment should be completed. Similarly, if a different Technician attends the premises, than from the previous treatment, a record must be kept as to whether the Technician agrees with the on-site risk assessment. Where the Technician disagrees with the assessment, a new on site risk assessment must be completed.

If wasp/bee activity remains

Extend inspection to other areas of the premises to verify that activity is contained and extend treatment regime as required.

Retreat affected areas as appropriate following manufacturer's instructions. A record must be kept of all insecticide used when retreating any area.

As a minimum, the following information must be recorded:

- Details of the premises (including any specific job reference);
- Name of Technician who attended;
- The date of visit;
- Any changes in the premises that could affect the safety or success of the treatment (completing a new on site risk assessment if necessary);
- The evidence that wasp/bee activity still exists;
- The degree of activity observed and the amount of new insecticide used;
- The location, amount and type of insecticide used (including amendments to the site plan);
- The nature of any hygiene housekeeping carried out or still outstanding;
- Any other information that may be of relevance (for example, any previous history of activity at the premises);
- Proposed date of follow up visit (if any)

Explain nature of treatment, hygiene/housekeeping requirements and any safety requirements to occupier.

Estimate timing of next visit and inform occupier, this will generally be within 7 days.

If control has not been achieved after 3 visits, a revisit with Supervisor/Manager should be arranged and the control strategy examined and reassessed. Further discussions should also take place with the occupier to ensure that wasp/bee activity is not being inadvertently prolonged.

Completion

When no further signs of activity are observed or reported by the occupier, explain the situation to the occupier and restate any outstanding preventative works or housekeeping issues that require attention.

Close down the complaint and maintain suitable permanent record of all notes, on site risk assessments, insecticide treatment records, copy letters and other relevant documents.







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Treatment processes – Block or larger commercial properties: ants

Whilst the methods detailed in the previous sections can be applied to block or larger commercial properties, the nature of such buildings can present difficulties that will inhibit a successful treatment, including:

- Ant nests (particularly Pharaoh's ant nests) could be widespread throughout the whole of the structure;
- More complex structures, including pipework, ducting and corresponding potential for damage and/or disrepair;
- Differing habitat throughout the structure, including temperature, moisture and standards of cleanliness;
- Multiple owners, landlords and occupiers, resulting in increased difficulty in gaining access to individual dwellings within the property to conduct coordinated treatments;
- Legal action may need to be considered where occupiers are unable or unwilling to have a suitable treatment carried out or to ensure remedial works are completed.

The above factors can allow ants to pass freely throughout the structure of the building and also prevent them from being exposed to any insecticide treatment. To ensure that the impact of such factors is minimised, a treatment plan should be formulated to coordinate the number, nature and frequency of treatments. The treatment plan should include:

- Details of each individual dwelling and/or common parts and owners/occupiers;
- Details of a thorough survey of all areas, including structural plans;
- Liaison arrangements with occupiers, landlords, enforcement agencies etc.;
- The extent of ant activity, including the above mentioned factors that could inhibit the success of the treatment and how these are to be overcome;
- Relevant site information including the presence of young children, pets and elderly infirmed people;
- Full suitable and sufficient risk assessment of the proposed treatments and the safeguards to be put in place – including decontamination procedures for Technicians;
- The method of the treatments including the location, amount and type insecticide to be used;
- The frequency of treatments, including revisits and review of the treatment plan;
- How the success of the treatment will be judged - i.e. is complete eradication practical and over what timescale?
- Any other information that may be of relevance (for example, any previous history of activity at the premises);

Accordingly, this section highlights the processes to be applied when conducting treatments in such larger properties.

Ant activity not present

Explain to the occupier(s) that there is no evidence of ant activity and reassure the occupier(s) and/or owner that a revisit can be arranged if any activity reoccurs.

As a minimum, the following details must be recorded:

- Details of each individual dwelling and/or common parts (including any specific job reference);
- Name of Technician(s) who attended;
- The date of visit;
- The areas surveyed;
- The result of the survey confirming that ant activity was not identified;
- Any other information that may be of relevance.

Close down the complaint making such comments on the job sheet or electronic record.

Uncertain conclusion

If there is no evidence of ant activity and either the occupier(s) will not accept the situation, or there are reasons that may give the Technician concern that ant activity may be present, then consideration must be given to either using monitoring devices and/or revisiting with Supervisor/Manager.

Provide information and advice to the occupier(s) on improving standards of hygiene, housekeeping if necessary.

Inform the occupier(s) that a revisit will be made within 2 to 3 weeks.

As a minimum, the following information must be recorded as part of the treatment plan:

- Details of each individual dwelling and/or common parts (including any specific job reference);
- Name of Technician(s) who attended;
- The date of visit;
- The areas surveyed;
- The evidence of potential activity;
- The location, amount and type of monitoring devices;
- Any other information that may be of relevance (for example, any previous history of activity at the premises).

Report circumstances to relevant Supervisor/Manager.



Ant activity confirmed

Where practical, the aim of the treatment is to achieve complete control of the ant activity within the building/structure as a whole and therefore the following should be recorded as part of the treatment plan:

- Details of each individual dwelling and/or common parts (including any specific job reference);
- Name of Technician(s) who attended;
- The date of visit;
- Details of all areas surveyed;
- The evidence of potential ant activity, including the species concerned and any contributory factors;
- Relevant site information including the presence of young children, pets and elderly infirmed people;
- The location, amount and type insecticide used (including suitable diagram);
- Any other information that may be of relevance (for example, any previous history of activity at the premises).

Report circumstances to relevant Supervisor/Manager.

Method of treatment

The treatments should be carried out in accordance with the treatment plan. If using an insecticide, similar procedures to domestic treatments can be adopted including:

- Apply a continuous band of insecticide around all points of entry such as doors, windows, ventilators, ducts and drains to form a barrier both internally and externally;
- Treat all wall and floor junctions, ant runs and harbourages;
- Give particular attention to small, insignificant cracks, which may be major points of entry for ants;
- Any flying ants inside can be treated with a suitable aerosol insecticide.
- For Pharaoh's Ant and other tropical ant species, the treatment will vary and may include the use of baits

The Technician should explain the nature of the treatment and any specific safety requirements to the occupier(s) and provide an appropriately annotated (safety data sheet) advice sheet - highlighting the premises address, the date, what product has been used and what action to take in cases of an emergency.

The insecticide manufacturer's instructions must be followed with regard to any advice provided post treatment.

As a minimum, the following information must be recorded:

- Details of each individual dwelling and/or common parts (including any specific job reference);
- Name of Technician(s) who attended;
- The date of visit;
- The areas surveyed;
- The evidence of ant activity, including any contributory factors;
- Relevant site information including the presence of young children, pets and elderly infirmed people;
- The location, amount and type of insecticide used (including suitable diagram);

- Any other information that may be of relevance (for example, any previous history of activity at the premises);
- Proposed date of follow up visit (if any).

Identify and survey any adjacent premises either immediately above or below or immediately to either side as dictated by the treatment plan.

Second or subsequent visits

The treatment plan should be kept under constant review to ensure it remains effective. Previous treatments should be reviewed prior to carrying out a further inspection of the affected areas for evidence of ant activity. Hygiene and housekeeping standards within the premises should also be re-evaluated.

If ant activity remains

The treatment plan must be thoroughly reviewed, including a further site inspection. This may include inspecting other areas of the structure to verify that ant activity is contained. Further discussions should also take place with the occupier(s), landlords etc. to ensure that ant activity is not being inadvertently prolonged.

As a minimum, the following information must be recorded as part of the treatment plan:

- Details of each individual dwelling and/or common parts (including any specific job reference);
- Name of Technician(s) who attended;
- The date of visit;
- Any changes in the premises that could affect the safety or success of the treatment (completing a new on site risk assessment if necessary);
- The evidence that any activity still exists;
- Confirmation that ant species has been correctly identified (including use of entomologist as needed);
- The degree of activity observed and the amount of new insecticide used;
- The location, amount and type of insecticide used (including amendments to the site plan);
- The nature of any hygiene housekeeping carried out or still outstanding;
- Any other information that may be of relevance (for example, any previous history of activity at the premises);
- Proposed date of follow up visit (if any).

Explain nature of treatment, hygiene/housekeeping requirements and any safety requirements to occupier(s).

Estimate timing of next visit and inform occupier(s), this will generally be within 7 days.

Completion

Completion should be declared in accordance with the treatment plan. When no further signs of activity are observed or reported by the occupier(s), explain the situation to the occupier(s) and restate any outstanding preventative works or hygiene/housekeeping issues that require attention.

Close down the complaint and maintain suitable permanent record of all notes, on site risk assessments, insecticide treatment records, copy letters and other relevant documents.

Disposal of insecticides

Legal background

The safe disposal of insecticides and their containers is an important aspect of any Pest Control operation. The legislation covering this area is complex and all pest control operations are recommended to obtain suitable advice to ensure that their disposal routes are satisfactory.

Such disposal routes may exist within the resources of the Pest Control Technician or by the use of a third party. Whichever option is chosen, pest control operators are advised to satisfy themselves that all the necessary permissions, as required by the legislation, are in existence. For example, the disposal routes for spent insecticides are different from unused or obsolete products.

Under the Environmental Protection Act 1990 and the Pollution Prevention & Control Act 1999 local authorities must dispose of controlled and special waste in accordance with the Pollution prevention and Control (England and Wales) Regulations, the Controlled Waste (Registration of Carriers and Seizure of Vehicles) Regulations 1991, the Environmental Protection (Duty of Care) Regulations 1991 and the Waste Framework Directive 75/442/EEC as enacted under the Waste Management Licensing Regulations 1994.

The Landfill (England and Wales) Regulations 2002 amended the Duty of Care Regulations to require transfer notes to identify waste by reference to the Consolidated European Waste Catalogue (EWC) 6 digit code, and also to restrict the types of waste accepted at certain sites.

Specific hazard classification and disposal advice is contained on each individual product safety data sheet. Pest Control Technicians must comply with this information when disposing any product. However, the following guidance provides an outline of the disposal method.

Methodology: spent insecticide, waste packaging and contaminated PPE

All interim waste should be stored in a suitable storage facility designed to the standard outlined in HSE Advice Sheet CS19 and handled in accordance with appropriate risk COSHH assessments.

All such waste arising from pest control activities should be consolidated in a systematic way, for example unused insecticide should be stored

separately from other container wastes, and accumulated in such quantities as to allow economic and efficient disposal.

Such waste should be bagged for interim storage and transport in bags having the necessary strength to withhold the weight of the waste and provide resistance to puncture. 300 gauge clear polythene bags with plastic pull tags are recommended for this purpose.

The disposal of products which have been approved under the Control of Pesticides Regulations 1986 (as amended), or authorised under the EU Biocides Regulations (528/2012), must be carried out in accordance with the product's approval/authorisation conditions and national waste legislation. Where containers have held hazardous classified formulations, and have not been completely emptied, then the container must also be treated as hazardous waste. It may be possible for the disposal operator to seek reuse, re-cycle or recovery options for products that are contained within a plastic bag within a bucket. These buckets should be emptied completely and stacked inside each other. The contaminated polythene bags should be packed into a separate sack.

Disposal operators cannot accept waste unless it is in accordance with the Regulations, and therefore consideration should be given whether a licensed carrier is required to transport the waste products; however such materials may be transported to the disposal operator in the pest control vehicle. Where Pest Control Technicians consider the use of a waste carrier, these must hold a valid waste carrier's licence.

The 'duty of care' obligation under Environmental Protection Act 1990 requires that all parties involved in any waste transfer must keep records (for example, transfer notes and waste descriptions) for at least 2 years.

Methodology: excess, out of date, obsolete unusable stock

The responsibilities and principles to be applied when disposing these products are the same as those described in the previous section, however the type and quantity of the waste product may require specific disposal. Pest Control Technicians are advised to seek suitable professional opinion from their nominated disposal operator as to the most viable disposal option for all such products.

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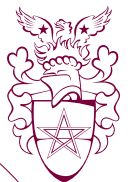
Storage of insecticides

All pest control storage facilities should be designed to the standard outlined in HSE Advice Sheet CS19 and maintained in a clean and orderly condition.

All bulk pest control materials shall be stored in the pest control store immediately from the time they are delivered to the site, until they are needed by the operatives concerned. Materials may only be used by the operatives from original containers, or are in containers which are suitable and appropriately labelled. Waste materials may only be disposed of in the approved manner from the pest control store.

A detailed inventory must be maintained of all products and quantities, and the amount provided to each Technician. All insecticide received into the storage facility, and the quantities distributed to Technicians, must be recorded.

All bulk pest control materials shall be stored in the pest control store immediately from the time they are delivered to the site, until they are needed by the operatives concerned



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