Pest control technical note - Fleas

Number 19 Updated May 2017

Fleas

Fleas are small wingless external parasites from the Order Siphonaptera. Adult fleas range from 2 to 4mm in length, are brown in colour, and oval in shape. Their six legs are strong and spiny, with powerful hind legs for jumping. Relative to body size, fleas are one of the best jumpers of all animals and are able to jump over 200 times their body length.

Fleas have small antennae and have mouth parts developed for piercing and sucking. They feed on the blood of humans and animals. Some fleas feed from one host species only, while others can survive on a number of hosts.

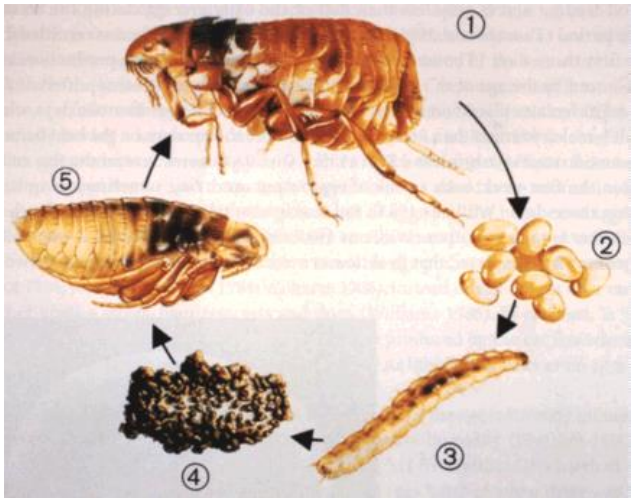
Fleas are thought to be a growing problem due to the increasing number of household pets. They have been known to spread the disease typhus. Typhus is caused when bites become infected as a result of flea-faecal contamination, however this is uncommon. Fleas are also known to transmit tapeworm larvae. They are most notorious for transmitting bubonic plague from rodents to humans in certain parts of the world although this is not known to occur in Australia.

The main flea species found in Australia are:

- **The Cat Flea -** The most common flea in Australia. It attacks dogs, cats, rats, humans and other mammals.
- **The Dog Flea -** Less common than the cat flea but similar in appearance. Known to attack a wide variety of mammals.
- **The Human Flea -** Not commonly encountered due to the increase in hygiene standards. Also attacks dogs, pigs, rats and mice.

Life cycle

Fleas undergo a complete metamorphosis by changing form a number of times during their life cycle. Completion of the life cycle from egg to adult varies from two weeks to eight months depending on temperature, humidity, food, and the type of flea species.



Egg

The adult female lays four to eight eggs in a cluster, usually on the host animal itself after a blood feeding. The eggs are light coloured and oval shaped; taking from two days to a couple of weeks to hatch.

Larva

When the larva hatch from the eggs they can take up to several months to develop. Their food consists of digested blood from adult flea faeces, dead skin, feathers, hair and other particles of organic matter. Once they fully develop, they commence the weaving of a cocoon.

Pupae

Pupae mature to adulthood within a cocoon woven by the larva to which pet hair, carpet fiber, dust, grass cuttings and other matter adheres to.

Flea survival and growth is best during warm, moist winters and spring. After the pupa develops, it does not automatically emerge from its cocoon. Instead, it is able to remain in the cocoon until it detects a nearby host.

Adult

Once the metamorphosis is complete, in about five to fourteen days, adult fleas start to emerge. They may remain resting in the cocoon until they sense vibration (caused by the movement of animals and people), pressure (a cat lying down on them), heat, noise, or carbon dioxide (indicating a nearby food source). The ability to sense vibration explains why fleas bites can occur after entering a house that has been unoccupied for some time.

When an adult flea hatches from the cocoon, it is ready for its first blood feed. Adults are quite active, crawling amongst hair or fur and often move by jumping.

Adult fleas can survive for many months without feeding. When a food source is available, the flea uses its saw-like mandibles (jaws) to cut through skin, usually on accessible parts of the body such as the legs or feet. Flea saliva contains anticoagulants to encourage the blood to keep flowing so they can feed easily.

Symptoms of bites

The bite of a flea has certain features:

- It is extremely itchy.
- A red, swollen wheal (lump) develops within half an hour of the bite.
- After a day or so, the wheal may develop into a blister or small wound.
- The legs and feet are often targeted.
- Secondary infections caused by scratching are common. Some people may become hypersensitive to bites.

Household pets

Dogs and cats are common ‘reservoirs’ for fleas. Your pet may be irritated by flea bites and scratch often. Check for fleas by parting the fur, particularly around the ears and rump of the pet. Look for the fleas themselves or for flea faeces. Flea faeces look like miniscule dark specks. For a positive identification of flea faeces, place a few of the specks on a piece of lightly moistened white tissue. Flea faeces will stain the tissue with a ring of blood.

Flea Control

Non-chemical control

Maintaining a high standard of hygiene is very important in controlling fleas without the use of pesticides. All floors and soft furnishings should be thoroughly swept and washed. All carpet and furnishings should be vacuumed taking particular attention along seams and joins.

It is common for fleas to be found in areas where household pets rest. These areas should be targeted first. Pet bedding should be thoroughly vacuumed or steam cleaned. Care must be taken to dispose of the vacuum cleaner bag contents thoughtfully as these may contain eggs or pupae and cause reinfestation.

Larvae have been known to frequent shaded areas within the garden. Loose debris and weeds should be removed and the lawns mowed. This helps expose the flea’s environment and is a good integrated pest management practice.

Ensuring pets and animals cannot access areas beneath the house can also help in minimising the chance of fleas spreading indoors.

Chemical control

Effective flea control often relies on the well-directed application of pesticides. This should be undertaken at the same time as management procedures such as vacuuming and garden maintenance to ensure the

environment is less suitable for the development of fleas.

It is important that pest control operators communicate with clients, ensuring that they understand that pesticides will only kill larvae and adults. When the eggs hatch the larvae will come in contact with the residual pesticide and perish. When the adult emerges from the pupae it will jump around, potentially biting the host until it comes in contact with residual pesticide and dies. This will usually take between five and fourteen days.

Treat the pet

Pest control operators should direct their clients to treat pets for fleas. This will ensure that the fleas do not continue to reinfest treated areas while harbouring on the animal. Clients should contact a local veterinary clinic for advice on appropriate pet flea control measures.

Care must be taken to ensure untreated stray or feral animals do not also inhabit the property; and at the same time treat the pets bedding.

Treat the home

There are many types of pesticides registered for flea control in Australia. As part of your risk assessment, assess the home for potential risk associated with the use of pesticides. Before you start a flea control treatment have you:

- chosen a pesticide with the least toxicity?
- enquired if any members of the household are sensitive to pesticides?
- communicated to the client areas where pesticides will be applied?
- informed the client to vacate the premises for a minimum of four to six hours?
- ensured all children's toys and pet water and food bowls are stored away?
- read the product label directions carefully?

Ensure that you have asked these questions before beginning the treatment.

Surface sprays can be used to treat areas that may harbour eggs, larvae, pupae or adult fleas. Typically these areas may include flooring, skirting boards under rugs and floor to wall joints. Particular care must be taken in the accuracy of the application, especially when using products that are not suitable for carpets and upholstery.

Space spraying with pesticides can be a useful control method. The pest control operator must ensure that entry to treated areas is barred during the time of application. Treated rooms should be adequately ventilated before persons and pets are allowed to re-enter.

Dusting while not common, can be an effective application method when treating areas where spraying is difficult, such as cracks and crevices or wall voids. Care must be taken with the use of dusts as they do not adhere to the surface on which they are applied and can be disturbed by air flow or vibrations; potentially increasing the treatment area and prolonging the risk of exposure.

Treat the garden

Sometimes outdoor areas and sub floors may need to be treated with surface sprays. Sheds and dog houses may also need to be treated. Rodents can sometimes be the source of a flea infestation; therefore, pest control operators should look for signs of rodent activity when deciding what chemical treatment to recommend. Rodent and flea control measures may have to be undertaken simultaneously.

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