**Introduction**

**Fleas are a very common parasite that can significantly affect our pets. Not only do they cause irritation as they move around, and discomfort by biting, they can also transmit disease. Some pets also have a heightened response to flea bites (known as flea allergic dermatitis), which means they have an allergic response to flea saliva. In this situation, rather than just causing the usual**

**irritation and discomfort, even just a few flea bites can trigger extremely itchy and inflamed skin.**

**When a pet becomes infested with fleas, it brings them back into the home. The adult flea lays up to 50 eggs a day and the flea life-cycle takes around 21 days to complete; this means that the number of fleas can very rapidly escalate and eradicating a flea infestation can take quite some time. See the diagram below for more information.**

**Life cycle of Fleas**

**There are four stages in which fleas life cycle is divided-**

1. **Egg**
2. **larva**
3. **Pupa**
4. **Adult**

**Stage 1- Eggs**

Flea eggs are roughly 1/50 of an inch long, smooth, ovular, and pale. After each blood meal, the fertilised adult female flea lays two to fourteen eggs, and over her lifetime, she can lay up to 800 eggs. Usually, the host's skin or hair is where the eggs land. During a pet's routine activity, these eggs fall off onto mats, rugs, carpets and beds. Usually, the areas where the pet spends the most time are those with the highest concentration of eggs.

**Larva**

Depending on the surroundings, flea eggs can hatch into larvae in two to fourteen days. Larvae that hatch are around 1/16 inch long, and they can develop up to ¼ inch long. By moulting, or recurrently losing their skin, they grow. After three moults, they take eight to twenty-four days to reach full development. In unfavourable conditions, larval growth can be extended for up to six months. Flea larvae reside in carpets, rugs, crevices in the floor, and animal bedding. Despite lacking legs, they move by using the bristles on their body. Larvae prefer damp, dark places to feed on a range of organic waste products, including pet waste, dried excrement from adult fleas, and fragments of pet food.

**Pupa**

A fully developed flea larva weaves a silk cocoon prior to reaching the inactive pupal stage. As it plummets, it mixes bits of detritus into the cocoon, helping the cocoon blend in with its environment. Inside the cocoon, the larva pupates and progressively turns brown or rust in colour. It stays in the pupal state for five to seven days, however under adverse circumstances, this stage may extend for a year.

**Adults**

Flea adults are tiny, wingless insects that range in length from 1/8 to 1/12 of an inch. Black to dark reddish-brown is their colour. A flea that is an adult can jump up to 8 inches vertically and 16 inches horizontally because to modifications made to its hind pair of legs. They can move forward through the host's hair or feathers thanks to their slender, laterally compressed bodies and strong, backward-facing spines, which also help them avoid being pulled out during grooming.

Adult fleas stay inside the cocoon until they find a good host. A mature flea may wait for a host in its cocoon for up to five months, depending on the surrounding circumstances. Adult fleas detect body heat, odour, air movement, vibration of flooring, and other stimuli from within the cocoon. When they detect a suitable stimulus, they leave the cocoon and seek out their potential host. Due in part to this behaviour, flea infestations are frequently found by homeowners who are moving into new homes or returning home from vacations, where adult fleas have been waiting patiently inside cocoons without access to hosts.