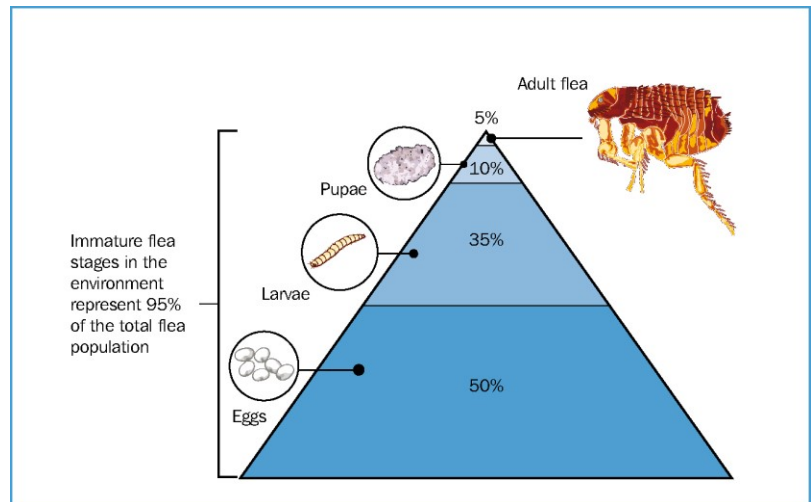


# Working With Nature to Avoid Environmental and Health Hazards of Common Flea Pesticides

By Katja Forsyth

Why are fleas a recurring problem for vets, pet parents, and our furry friends who love to be outside? When people think of fleas, they think of ugly, jumping insect parasites that live on animals and suck their blood. However, what people often fail to realize is that only 5% of the flea population at any given time is mature enough to jump on our pets. The other [95% of the population](#) exists at different levels of maturity, including eggs, larvae, and pupae.



The majority of the flea life cycle doesn't happen on the animal, in fact, it happens after the eggs dry and fall off of the animals' body. The common flea, referred to as the "cat flea", does not limit itself to pets. Cat fleas have been found on over [130 wild animal species](#) around the world. So even if you remove fleas from your pets' hair or fur, a squirrel, possum, or fox could very likely bring more fleas into your yard the very next day. This makes the soil an essential arena for combatting recurring flea problems.

So what do you do about the soil? Conventional veterinarians (and gardeners) will tell you to [apply a pesticide to kill the fleas](#): once a week to kill the infestation, and then once a month indefinitely after that. These pesticides come with a simple promise - kill the pests - and a complicated warning label and list of side effects. This is an acute, mechanical solution to a chronic problem of disbalance, which in turn, creates new, more persistent issues.

Most popular flea pesticides include a dangerous chemical called bifenthrin. In addition to killing insects, it is [highly toxic](#) for aquatic animals, including fish and invertebrates. Bifenthrin enters waterways through water runoff; in one study, bifenthrin was found in [23 of 24 urban creeks](#) in the Sacramento, California area. Sewage treatment plants (or Publicly Owned Treatment Works - POTW) can't filter out pesticides, so the bifenthrin bioaccumulates in fish bodies, before they are eaten by either sea birds or humans. In addition to all of these downstream impacts, bifenthrin can pose a fatal threat to pets. In 2019, the Journal of Analytical Toxicology published a paper the [first reported case of a canine fatality resulting from bifenthrin](#).

Common pesticides promise to kill the fleas that are causing your problem, but don't advertise that [they'll also kill everything else](#). Pesticides get rid of the fleas, but they also kill all of the beneficial insects that live in the soil, including earthworms, ladybugs, and the billions of fungi and microorganisms that help maintain a balanced soil ecosystem. When you kill the entire biological community under our feet, you also kill the beneficial insects that were working to keep the parasites under control. And when everything else has died, only the most aggressive parasites can survive.

It doesn't matter to fleas if the soil is dead, because once the eggs hatch, the larvae feed on [flea dirt](#) that the adult fleas leave behind. This is why fleas are able to hatch in your home as well. Without the threat of their natural predators, fleas replicate out of control, causing cumbersome and dangerous infestations.

Pesticides, whether applied to the yard, topically, or ingested orally, all work against nature's logic. Killing indiscriminately is a short sighted, compartmentalized, and disharmonious approach, which draws an imaginary and completely arbitrary line between "pests" and the rest of earth's living creatures. Rebalancing a living system, so that no individual creature has disproportionate impact, requires adding life. One of nature's most elegant solutions is evolving predators for every kind of creature, to weave a delicate and elaborate web of life.

Fleas' natural predator is the beneficial nematode. [Steinernema feltiae](#) and [Steinernema Carpocapsae](#) are insect-parasitic nematodes and kill all flea stages except for eggs. Topical flea medications usually require the adult flea to bite the pet in order to be effective - targeting only 5% of the flea population. Applying beneficial nematodes to the soil expands that range to 50% of the flea population.

Beneficial nematodes are invisible to the naked eye, but they have a huge impact. They kill fleas biologically within 48 hours of application by entering their bodies, depositing a lethal bacteria, and then *feeding and breeding inside of the flea for 20-30 days*. The body of a flea larva is spacious enough that the nematode population can grow from just 1 or 2 nematodes to 1,000 nematodes in only one month. They can then patrol the soil for up to two years, waiting for their next meal. Even if new fleas are introduced to the environment, they will quickly become food for your nematode guardians.

Unlike pesticides, beneficial nematodes are self-replicating, meaning you can be free from the pesticide treadmill. One annual application is enough to support the nematode population despite seasonal weather events. Frost and extreme heat both cause nematodes to burrow deeper into the soil to more amenable conditions. When conditions improve, some will resurface, but many will stay in the lower levels of the soil. (Re)Applying nematodes is simple: just dilute the nematode mixture in water, wait until dusk, and apply with a watering can or hose-end sprayer to shady and/or damp areas of your lawn and around your house. Target places that your pet likes to hang out - or places that feral animals might pass through or nest in, like underneath the deck.

Better yet, beneficial nematodes are completely safe for pets, people, and the planet. *S. Feltiae* and *S. Carpocapsae* specifically target insects with a larval stage in the soil - this exempts earthworms, ladybugs, butterflies, and many other beneficial insects, while targeting 230 other garden pests including fungus gnats, white grubs, weevils, root maggots, fire ants, and more. They cannot survive in the stomach of a mammal, are harmless to aquatic life, and their presence in the soil [increases soil health](#). By digesting fleas and other grubs, they build organic matter, increase plant-available nitrogen, therefore positively impacting the soils' water retention ability and promoting carbon sequestration.

Following nature's wisdom is one way to integrate solutions and multiply benefits, and beneficial nematodes are an essential link for long term flea control. Other holistic approaches like essential oils and coconut oil can help avoid picking up fleas in dog parks and public spaces, where fleas run rampant, but you can keep your home and your pets safe from fleas with 10 million tiny but mighty soil-dwelling guardians.

If you're interested in trying or providing beneficial nematodes, [Flea Destroyer](#) is available in wholesale quantities for veterinarians or pet stores. Individuals can purchase Flea Destroyer at online retailers such as [Dr. Judy Morgan's Naturally Healthy Pets](#).

*\*Note: CIVT is providing this information to create awareness of a natural product that may be of interest to our audience. CIVT does not have any association or financial interest in this product or associated businesses.*