The Use of Pyrethrin for Flea Control in Dogs & Cats

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Pyrethrins are one of the most widely used insecticides in today's flea and tick products and have been used as insecticides for over 100 years. Pyrethrins are natural extracts made from flowers of chrysanthemum plants. These plants grow naturally in the Middle East, Europe, Japan, and most importantly, Kenya. There are six different pyrethrins: pyrethrin I and II, cinevin I and II, and jasmolin I and II. All six are found in flea and tick products, but generally the label only reads "Pyrethrin," regardless of which of the six types is actually present.

Pyrethrins affect the nervous system of insects and result in repeated and extended firings of the nerves. Pyrethrins do this by affecting the flow of sodium out of nerve cells.

Pyrethrins are used to control ticks, fleas, lice, *Cheyletiella* mites and mosquitoes. They are mainly found in products applied directly on the pet. Household products generally contain either pyrethrins, a combination of pyrethrin and permethrin (see below), or pyrethrins plus a synergist. Synergists are chemicals that enhance the performance of other drugs. The synergist most widely used with pyrethrins is 'piperonyl butoxide.'

All pyrethrins are easily hydrolyzed and degraded by stomach acids so toxicity following ingestion by pets is very low. Toxicities, although rare, do occur. A cat or dog with pyrethrin toxicosis generally will salivate, tremor, vomit, and may seizure. Generally, signs of toxicosis will be gone after 24 hours. Pyrethrins are some of the safest ingredients available, especially when one expects ingestion may occur, as is the case of cats and kittens. If lactating, breeding or pregnant animals must be treated for external parasites, pyrethrins are often recommended. Pyrethrins are generally safe for kittens as young as 4-6 weeks of age.

Pyrethrin is NOT the same as permethrin. Permethrin is a synthetic pyrethrin, and is less easily broken down than pyrethrin. Although its toxicity is relatively low, it is higher than that of pyrethrin. Pyrethrins can be used on cats; permethrins should NOT be used on cats.

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