



**Florida Department of Agriculture & Consumer Services
CHARLES H. BRONSON, Commissioner**

Questions and Answers:

**Health and Environmental Aspects of Fipronil (TERMIDOR®) Use
in Tree Termite Eradication**

1. What is fipronil?

Fipronil is an insecticide planned for use by licensed and certified pest control operators to control tree-dwelling termites detected in Dania Beach, Florida. Fipronil is the active ingredient in the termiticide product TERMIDOR®, which is commonly used by pest control operators for protection of residential and commercial buildings in Florida. Fipronil is also found in a variety of insecticide products used for protection of crops (REGENT®); seed treatments (ICON®); control of ants (OVER n' OUT®) and roaches (MAXFORCE®) around the home and lawn; and control of fleas and ticks on pets (FRONTLINE®). Fipronil kills insects through both contact and ingestion. Fipronil works by blocking the gamma-aminobutyric acid (GABA) receptor system that is responsible for preventing excessive stimulation of nerves. By blocking this system, fipronil results in uncontrolled central nervous system activity and subsequent death of the insect. The GABA channel is found in both vertebrates (e.g., humans, fish, and wildlife) and invertebrates (e.g., insects), however, fipronil's effects are markedly more pronounced in invertebrates because it binds more much tightly to their GABA receptors.

2. How will fipronil be applied?

For tree termite control, fipronil (TERMIDOR®) will be applied by licensed and certified pest control operators in a 0.125% solution by either direct injection into a termite nests and/or as a perimeter application to soil around the infested area. To control the termites and prevent reinfestation, 1 gallon per 10 square feet is applied to the soil around the nest.

3. What happens to fipronil in the environment?

Fipronil is not volatile so there is little likelihood of humans being exposed to this compound in the air. Fipronil tends to break down relatively quickly in sunlight; however, it is stable in water and has a half-life in soil of up to a year, favoring long-term control of termites in the soil. Fipronil is not highly water soluble and it tightly adsorbs to soil, characteristics which reduce the opportunity for leaching to ground water and runoff to surface waters.

4. How toxic is fipronil to humans?

High-dose exposures to humans are not expected given the application methods planned for treating tree-dwelling termites. Fipronil is considered moderately toxic when administered orally or by inhalation, but is practically non-toxic when exposure occurs via the skin (for example, cats and dogs can be treated by direct dermal application of fipronil flea control products). Symptoms of high-dose exposure may include excitability, lack of coordination and tremors. Fipronil is considered slightly irritating to the skin, while moderately irritating to the eyes. There is no evidence suggesting that fipronil may cause birth defects. Following high dose exposures, fipronil was associated with delayed development and mild reproductive toxicity in laboratory animals.

Based on the mammalian toxicity information on fipronil and limited exposures, use of this compound to control this arboreal termite is not likely to introduce acute health risks to human populations. Fipronil does not pose a known cancer risk to humans.

5. Does fipronil pose a risk to wildlife and the environment?

When ingested, fipronil is moderately toxic to mammals and slightly to highly toxic to birds. Gallinaceous birds (i.e., pheasants, turkeys, and quail) appear to be much more sensitive to fipronil than passerines (i.e., sparrows, warblers, wrens, crows, and other small birds) and waterfowl (i.e., ducks and geese), which show very little sensitivity. Overall, care should be taken to avoid directly exposing wildlife to fipronil. By using the product as directed on the label, potential impacts to wildlife can be minimized.

Fipronil is considered highly toxic to bees and should not be applied to vegetation when bees are foraging.

Fipronil is considered to be highly toxic to very highly toxic to fish and aquatic invertebrates. However, since fipronil is known to adsorb to soil particles and has a low solubility in water, once incorporated in the soil, the potential for runoff and subsequent toxicity to aquatic organisms is minimal. As with any pesticide, products containing fipronil should be used according to label directions and should be kept out of streams, lakes, and other aquatic habitats of concern. In addition, the label requires that care be taken to avoid runoff which may be hazardous to aquatic organisms.

6. Who should I contact for further information?

For further information on fipronil and the tree termite eradication effort, please call the following Department of Agriculture and Consumer Services toll-free number: **1-888-397-1517**.

For further questions concerning health effects of fipronil, please contact the Department of Health Bureau of Epidemiology at **1-800-282-3171**.