



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

**Questions and Answers:**

**Health and Environmental Aspects of Imidacloprid (PREMISE®)  
Use in Tree Termite Eradication**

**1. What is imidacloprid?**

Imidacloprid is an insecticide planned for use by licensed and certified pest control operators to control tree-dwelling termites detected in Dania Beach, Florida. Imidacloprid is the active ingredient in the termiticide product PREMISE® which is commonly used by pest control operators for protection of residential and commercial buildings in Florida. Imidacloprid is also found in a variety of insecticide products used for protection of crops (ADMIRE®, PROVADO®); seed treatment, and control of fleas on pets (ADVANTAGE™). Imidacloprid kills insects by disrupting their central nervous system, specifically by blocking the postsynaptic nicotinic acetylcholine receptors. Since such receptors are more abundant in invertebrates than in vertebrates, Imidacloprid is selectively more toxic to insects than to humans and wildlife.

**2. How is imidacloprid applied?**

For tree termite control, imidacloprid (PREMISE®) will be applied by licensed and certified pest control operators in a 0.1% 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 in this area.

**3. What happens to imidacloprid in the environment?**

Imidacloprid is not volatile so there is little likelihood of humans being exposed to this compound in the air. Imidacloprid is stable in the soil for several months, which may provide for long-term control of termites. However, imidacloprid tends to break down faster in soils with ground cover compared to bare soil. Imidacloprid is moderately soluble in water, is moderately adsorbed by soil, and has a moderate to long half-life in soil. These factors may promote some leaching to ground water (particularly in soils containing little organic matter), and movement with runoff to surface water with repetitive use. However, when used as directed on the label, there is generally not a high risk of water contamination with imidacloprid.

#### **4. How toxic is imidacloprid to humans?**

High-dose exposures to humans are not expected given the application methods planned for treating tree-dwelling termites. Imidacloprid is considered moderately toxic when ingested, however, it is considered practically non-toxic when exposure occurs via inhalation or the skin (for example, cats and dogs can be treated by direct dermal application of imidacloprid flea control products), and it is not considered irritating to the skin or eyes. Clinical symptoms following an acute exposure to a high-dose of imidacloprid might include fatigue, twitching, cramps, and muscle weakness including the muscles necessary for breathing. However, given the limited extent of treatment and the unlikelihood of a high dose exposure, the acute risk to humans would likely be minimal.

Exposure to imidacloprid has been associated with mild developmental and reproductive effects in laboratory animals. However, the doses used in these studies are well in excess of any exposure likely to occur under this use scenario. Based on the toxicity information on imidacloprid and limited exposures, use of this compound to control this arboreal termite is not likely to introduce acute health risks. Imidacloprid does not pose a known cancer risk to humans.

#### **5. Does imidacloprid pose a risk to wildlife and the environment?**

Imidacloprid is moderately toxic to mammals and moderately to highly toxic to birds when ingested. Imidacloprid appears to be less toxic to mammals when adsorbed by the skin or when inhaled. In addition, some studies with caged birds suggest that birds learn to avoid imidacloprid treated seed after experiencing transitory gastrointestinal distress and loss of coordination. Overall, care should be taken to avoid exposing wildlife to direct applications of imidacloprid. When used as directed on the label, little impact to wildlife is expected from the use of imidacloprid.

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

While, only slightly toxic to fish, imidacloprid is highly toxic to aquatic invertebrates. As with any pesticide, products containing imidacloprid 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 extreme care be taken to avoid runoff and possible adverse effects to aquatic invertebrates.

#### **6. Who should I contact for further information?**

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

If you have further questions about the health effects of imidacloprid, please contact the Florida Department of Health Bureau of Environmental Epidemiology at **1-800-606-5810**