

Data for structurally similar pheromones indicate there is very low acute toxicity to birds with LD₅₀ values greater than 2,000 mg/kg (Weatherston and Stewart, 2002). Toxicity to aquatic organisms is unknown for these two pheromones specifically; however, data for other pheromones suggests low acute toxicity to fish and moderate toxicity to aquatic invertebrates with fish LC₅₀ values greater than 100 ppm, and aquatic invertebrate toxicity values in the upper ppb to low ppm range (Weatherston and Stewart, 2002; PMRA, 1994; Inscoc and Ridgway, 1992).

In summary, there are no reported adverse effects to humans, domestic or other nontarget animals, or the environment from the use of these pheromones.

2. Exposure and Risk

Lepidopteran pheromones are sensitive to ultraviolet radiation and oxidation where they breakdown rapidly in terrestrial and aquatic environments. The rapid breakdown and volatilization of lepidopteran pheromones and their mammalian toxicological profile have resulted in the Environmental Protection Agency (EPA) waiving the requirement of a food tolerance when applications do not exceed 150 g active ingredient/ac/year (EPA, 2007). In addition to rapid degradation, lepidopteran pheromones have very low solubility, or are insoluble in water suggesting low aquatic residues (OECD, 2002). The pheromone is reported to be insoluble in water (Pacific Biocontrol Corporation, 2007).

Exposure to humans, domestic and other nontarget animals, and the environment is expected to be minimal. In the case of the dispenser application, the pheromone is inside a plastic tube that is suspended in a tree; therefore, no human-related exposure from residues or drinking water is expected. The same would also be true for terrestrial nontarget organisms where exposure would be expected to be minimal. Exposure to aquatic organisms would not be expected when dispensers are used because label language prohibits discarding dispensers in surface water.

Pheromone that would be applied in open and residential areas as a microencapsulated material would not pose a risk to human health due to the known mammalian toxicity profile for lepidopteran pheromones and their environmental fate. Based on the known toxicology data for the pheromone, as well as similar types of compounds, acute and chronic effects do not occur at the highest concentrations tested, and none of the pheromones to date have shown any potential mutagenic or carcinogenic activity (Touhey, 1990; EPA, 1996; OECD, 2002). In addition to the lack of known toxicological effects, the exposure potential for humans is very low. No dietary exposure from food is