Mimic™ 2LV (Tebufenozide) Insect Growth Regulator

Mimic is an Insect Growth Regulator (IGR) that acts upon the larvae (caterpillar stage) of lepidopteran pests and is used throughout North America to combat important forest defoliator pests such as the gypsy moth, tent caterpillars, budworms, tussock moths, and others. It selectively controls the insect pest with minimal or no impact upon their natural enemies or upon the environment.

Mimic™ 2LV is considered a low risk 'biorational' insecticide that controls specific insects by affecting their growth cycle. Mimic acts in a unique way whereby the active ingredient, *tebufenozide,* triggers the molting hormone of the target insect. When foliage sprayed with Mimic is eaten by the gypsy moth caterpillar, the active ingredient 'mimics' the insect hormone that triggers molting as the caterpillar goes through its growth stages. As the gypsy moth larvae feed, they molt and shed their outer cuticle several times as they grow larger; the larvae that consume the Mimic deposited upon the leaves undergo a premature molt and quickly cease eating and die shortly thereafter. The caterpillar stops feeding almost immediately resulting in less defoliation, which in turn helps to maintain a healthier forest.

In agriculture, tebufenozide is also used to protect many crops from caterpillar pests; this product is known as Confirm®, and is used to protect fruits, vegetables, and many field crops from harmful caterpillar pests.

Mimic does <u>not</u> affect any other orders of insects, including honey bees, native bee pollinators, ants, wasps, beetles, dragonflies, grasshoppers, or flies. Spring defoliating forest insects occur earlier, or are in different locations than many of the attractive butterflies (such as the monarch butterfly) that are associated with pastures, parkland, and roadside areas. Mimic also does not affect beneficial insect parasites, parasitoids, and predators that help to naturally control the populations of the forest defoliator pests.

Mimic has no direct effect on birds as they do not have the insect ecdysone hormone which is triggered by Mimic; and exposure to the spray or consumption of affected larvae by birds has no direct impact upon them either. In addition, spray programs only treat a small percentage of the forest in any single year minimizing any non-target impacts.

Additionally, Mimic has no impact upon wild or domesticated animals, or upon fish or amphibians. In research studies, it was noted that Mimic can affect water fleas, but only if a sufficient quantity is introduced into their environment (the bottom of shallow water bodies). Subsequent field studies have shown that this species has tremendous reproductive capacity and if impacted, populations rebound quickly.

Mimic has no effect upon vegetation or soil organisms. Mimic quickly binds to soils and potentially may run off into streams, but only if sufficient rainfall occurs to dislodge significant amounts of soil. This is not considered as an issue in forest protection programs as there is very little bare soil in most forest landscapes that are proposed for treatment.

Mimic has no impact upon humans, but as with any pesticide, applicators should wear the required Personal Protection Equipment (PPE) identified on the insecticide label when handling the concentrate and minimize unnecessary exposure to the concentrate.

Due to its unique mode of action, and its minimal impact upon the environment, Mimic is considered a good candidate for inclusion in an Integrated Pest Management Program (IPM) for the management of forest defoliators.