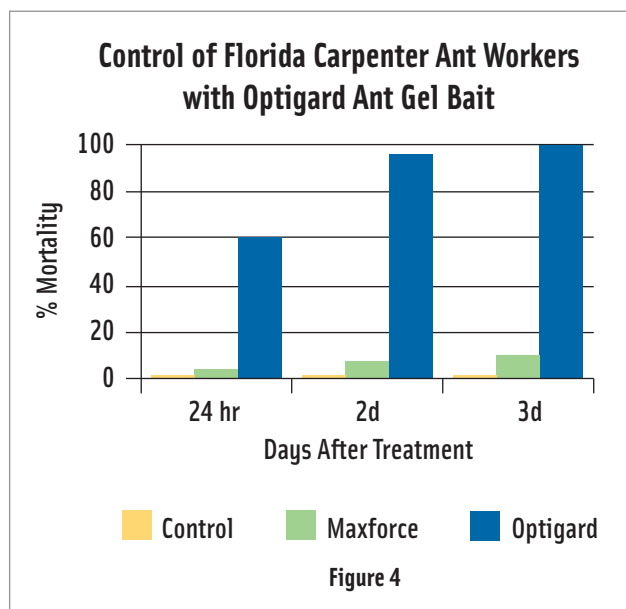
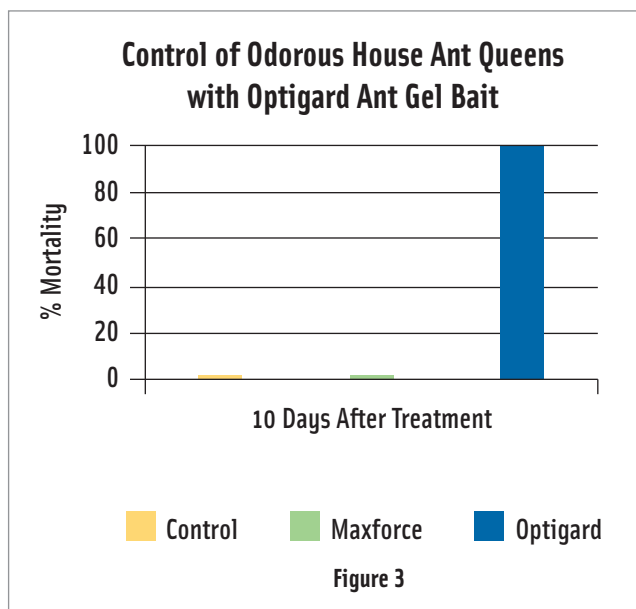


Laboratory Tests Conducted by North Carolina State University (Silverman 2006)

Bioassays were conducted with odorous house ants. Workers were allowed to feed on the bait within test arenas. Queen mortality was assessed at ten days after treatment. In the Optigard Ant Gel Bait arenas, 100% mortality of queens was observed. However, in the control and Maxforce treatments, all queens remained alive at the end of the experiment (Figure 3).

Laboratory Tests Conducted by Syngenta Research Labs, Vero Beach (2006)

Bioassays were conducted with Florida carpenter ant workers. Workers were allowed to feed on the bait within test arenas. Worker mortality was assessed at various time periods after treatment. In the Optigard Ant Gel Bait arenas, 95% and 100% mortality of workers was observed at two and three days, respectively. Efficacy of Maxforce remained low, only reaching 11% at three days (Figure 4).



CONCLUSIONS

Optigard Ant Gel Bait is a highly palatable ant bait that effectively controls a wide range of ant pests. It is non-repellent and transfers within ant colonies, resulting in control of workers, brood and queens.



TECHNICAL BULLETIN

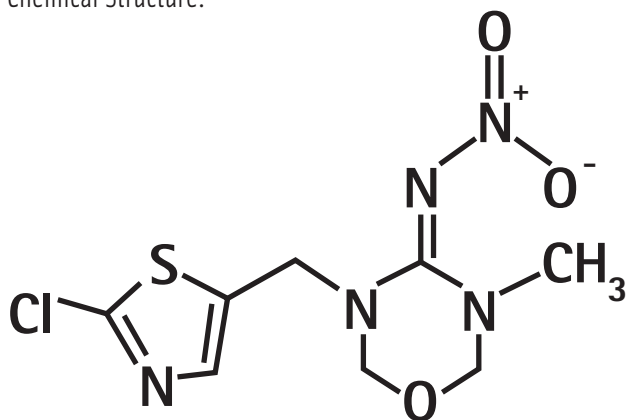
INTRODUCTION

Optigard® Ant Gel Bait is a ready-to-use bait formulation that controls a wide range of pest ant species. Its active ingredient, thiamethoxam, is a second-generation neonicotinoid insecticide that belongs to the thianicotinyl subclass. Thiamethoxam has demonstrated excellent ingestion activity against a broad range of economically important pests. Products containing thiamethoxam are used to control insect pests of crops, turf and ornamentals, as well as a broad spectrum of urban pests, including ants, termites, cockroaches, beetles and other nuisance pests.

Because of the unique mode of action of thiamethoxam, test data show that Optigard Ant Gel Bait is readily disseminated throughout ant colonies, resulting in quick control of workers and complete colony elimination.

CHEMICAL AND PHYSICAL PROPERTIES OF THE ACTIVE INGREDIENT

Common Name:	Thiamethoxam
Chemical Name:	4 <i>H</i> -1,3,5-Oxadiazin-4-imine,3-[(2-chloro-5-thiazolyl)methyl]tetrahydro-5-methyl- <i>N</i> -nitro
CAS Registry No.:	153719-23-4
Chemical Structure:	



Chemical Class:	Neonicotinoid
Subclass:	Thianicotinyl
Water Solubility (25°C):	4,100 mg/l

TOXICOLOGICAL PROFILE

Hazard Indicator	Species	Optigard 0.01% Ant Gel Bait
Oral LD50	Female Rat	>5,000 mg/kg body weight (Practically Non-Toxic)
Dermal LD50	Rat	>5,050 mg/kg body weight (Practically Non-Toxic)
Inhalation	Rat	>2.61 mg/1 air – 4 hours (Practically Non-Toxic)
Eye Contact	Rabbit	Minimally Irritating
Skin Contact	Guinea Pig	Not a Sensitizer

The active ingredient, thiamethoxam, and the bait formulation have low acute toxicity to mammals by the oral, dermal and inhalation routes of exposure. Skin and eye irritation studies indicate that thiamethoxam is not mutagenic, teratogenic, neurotoxic or a developmental toxicant.

Mode of Action:

Thiamethoxam is readily transferred among individuals within ant colonies and controls workers, brood and queens. Thiamethoxam targets the nicotinic acetylcholine receptors in the insect's nervous system, resulting in the death of the ant. This mode of action is significantly different compared with other classes of insecticides [e.g., boric acid formulations, pyrethroids, phenylpyrazoles (fipronil), pyrroles (chlorfenapyr), etc.] commonly used for ant control.

Product Description and Packaging:

- Optigard Ant Gel Bait is an easy-to-use, 0.01%, gel formulation
- Optigard Ant Gel Bait is packaged in a 30g syringe

PRODUCT PROFILE FOR OPTIGARD ANT GEL BAIT

- Broad-spectrum control of ants, including Argentine, carpenter, odorous house, ghost and other pest ant species
- Non-repellent insecticide
- Kills ants by ingestion
- Non-repellent chemistry results in transfer of the bait to the colony and secondary kill of nest-mates
- Reduction of workers occurs within two to three days for most species
- Queen mortality often occurs within days of worker mortality
- Test data shows that complete colony control occurs within days to weeks of baiting
- For use in cracks and crevices indoors and outdoors
- Packaged in a ready-to-use syringe complete with plunger for ease of application
- Colorless formulation with little to no odor
- Non-staining
- Non-volatile
- Remains palatable to ants after aging for at least 14 days
- Gel is readily consumed compared with other ant baits
- Resists degradation at high temperatures

APPLICATION OF OPTIGARD ANT GEL BAIT

- Use spot placements where ants nest or forage and/or in areas of entry into structures.
- Apply up to one gram of gel bait per spot.
- Can be applied using the included syringe applicator or bait injector tools.

Use of Optigard Ant Gel Bait for Control of Pest Ants:

Indoor Application:

- Use bait in areas where ants are found foraging or nesting. Bait must be placed out of the reach of children and pets. Typical application locations include: cracks, crevices, corners, behind kitchen appliances and baseboards, under sinks, around window and door frames, pipes and water heaters, as well as in attics, crawl spaces and garages.

Outdoor Application:

- Place Optigard Ant Gel Bait in areas where ants trail, forage or nest; on structures where ants are observed; and points of entry into the structure. Placements may also include areas that are potential moisture sources, such as soffits, eaves, weep holes and where pipes or wires enter the structure.

RESULTS OF TESTS FOR OPTIGARD ANT GEL BAIT

Extensive laboratory and field tests were conducted to determine the efficacy of Optigard Ant Gel Bait against a variety of pest ant species. Following are the results of these tests.

Tests Conducted by Apex Bait Technologies (Liang 2006)

In 2006, tests were conducted to determine the activity of Optigard Ant Gel Bait against Argentine ant workers and queens. Optigard Ant Gel Bait killed 97% of workers by three days and 100% by seven days (Figure 1). Mortality of queens exposed to Optigard Ant Gel Bait was 73% at 24 hours and 100% by three days (Figure 2). Conversely, no queen mortality was observed in either the control or Maxforce® treatments at three days.

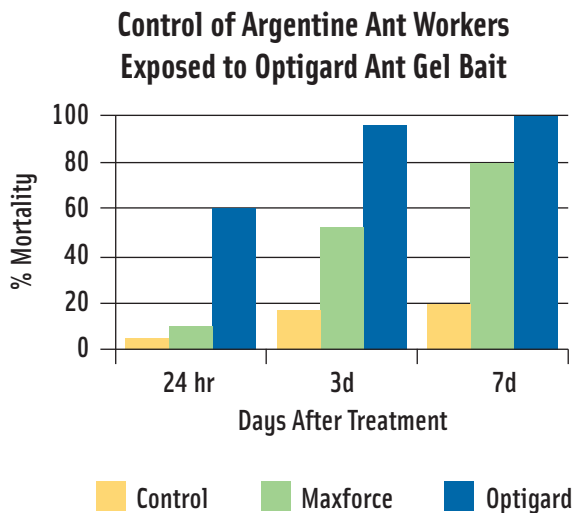


Figure 1

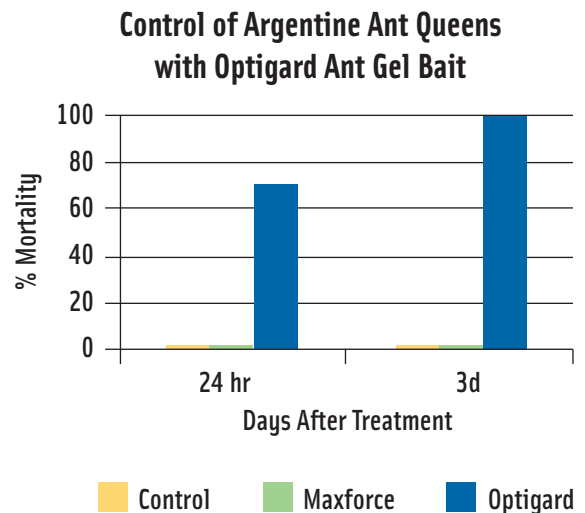


Figure 2