



The Thiamethoxam Vigor Effect: Flagship Insecticide Goes Beyond Effective Insect Protection

Flagship® 25WG insecticide and Flagship G insecticide are foundation products for ornamental growers. Thiamethoxam, the active ingredient in Flagship, effectively controls pests including aphids, whiteflies, leafminers and thrips on a wide range of ornamental plant species. The ability of thiamethoxam to further contribute to the growth of better quality plants has also impressed growers and researchers around the world.

Key Scientific Findings

Drawing on more than 10 years of research, Syngenta has uncovered the scientific reasons behind the Thiamethoxam Vigor Effect and the role played by thiamethoxam to help produce more vigorous plants. Upon absorption into plant tissue, thiamethoxam moves into cells where it activates genes responsible for the production of specific functional proteins.

These proteins play an important role in many physiological processes within the plant such as nutrient assimilation, protein storage, plant growth and defense mechanisms.

During development, plants may be exposed to various stress factors, which can reduce the plant's ability to reach its full genetic potential. The increased production and activity of proteins that interact with stress-defense mechanisms allow plants to better cope under challenging growing conditions, such as:

- Drought
- Improper pH levels
- Extreme temperatures

- High pest pressure
- Nutrient deficiencies

Plants treated with products containing thiamethoxam, like Flagship, are more tolerant toward these stress factors. Consequently, they can grow more vigorously under suboptimal conditions, giving them a better chance of realizing the highest levels of quality.

Going Beyond Insect Control

Flagship insecticides have a positive effect on plant health, and thiamethoxam is best in its class. When treating crops with an application of thiamethoxam, growers and researchers have observed:

- Healthier, more vigorous plants
- Improved plant quality
- Improved plant stands
- Increased root mass
- Stronger stems
- Greener plants

Control of Diaprepes Root Weevil with Flagship 25WG



Untreated

Flagship 25WG
8.5 oz/100 gal

Non-infested
Check

2011, Ferguson

Thiamethoxam Vigor Effect on Acer Flame Seedlings



120 lbs/A
Flagship G

60 lbs/A
Flagship G

Untreated

After being treated with **Flagship**, these Acer Flame Seedlings showed:

- Increased height
- Increased stem caliper
- Increased root development

2008, Bailey Nursery, Minnesota

How the Thiamethoxam Vigor Effect is Expressed

1. Thiamethoxam is systemic and penetrates into the plant.
2. Then, it moves into the plant cells.
3. In the plant cells, it triggers various physiological reactions, which are measurable as an expression of functional proteins.

Why Flagship is the Right Choice

- **Insect Control** – Flagship delivers consistent performance on a wide range of sucking, chewing and soil-dwelling pests.
- **Plant Vigor** – A broad range of plant species respond to the Thiamethoxam Vigor Effect, resulting in enhanced root growth and increased plant quality.
- **Top Quality Plants** – Growers using Flagship over competitive neonicotinoids can expect enhanced insect control. The benefits from the Vigor Effect can lead to healthier plants with improved quality.



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