Cruiser®: Exploring the Thiamethoxam Vigor™ Effect
Thiamethoxam applied as a seed treatment is active on a broad range of sucking, chewing and soil-dwelling pests.
Going Beyond Insect Control: The Thiamethoxam Vigor™ Effect

• When treating crops with thiamethoxam as a seed treatment, growers and researchers notice:
  – Healthier, more vigorous plants
  – Higher yields even in situations where there is no visible insect attack

• Thousands of field trials prove these effects are statistically sound

• Neonicotinoid insecticides have a positive effect on plant health and it is proven that thiamethoxam is the best in class
Evidence – What you see in the field

The Thiamethoxam Vigor™ effect has been witnessed in multiple countries on a variety of crops resulting in:

- Faster emergence
- Improved plant stands
- Increased root mass
- Thicker stems
- Earlier canopies
- Taller, greener plants
- Improved quality
- Higher yields
Field Observations

- Fewer days to canopy

Soybeans, Brazil
Field Observations

• Earlier flowering – providing more homogeneous ripening

Canola, Canada

Note: The insecticide A.I. in Helix XTra® is thiamethoxam and the A.I. in Prosper® is clothianidin
Field Observations

• Faster emergence

Untreated

Soybeans, United States
Field Observations

• Improved plant stand, faster emergence

Fungicide Standard

Peas, United Kingdom
Field Data Overview

• More than 1,000 paired yield comparisons versus imidacloprid or clothianidin

• Crop yield comparisons in corn, cereals, soybeans, canola, cotton, dry beans and sunflowers
Field Data Overview

Cruiser® vs. Clothianidin
Percent yield response curve from more than 230 trials for all crops

67% Positive Cruiser Yield Response vs. Clothianidin
Field Data Overview

Cruiser® vs. Imidacloprid
Percent yield response curve from more than 820 trials for all crops

68% Positive Cruiser Yield Response vs. Imidacloprid
Laboratory and Greenhouse Observations

Thiamethoxam Vigor™ response in corn seeds – faster germination

No pest influence, clean growth chamber environment
Laboratory and Greenhouse Observations

Vigor response of corn seedlings treated with Cruiser®

Untreated

No pest influence, clean growth chamber environment
Years of Research Prove and Explain the Thiamethoxam Vigor™ Effect

Objective:
- To provide a scientific explanation for enhanced plant growth witnessed with thiamethoxam

Time period:
- 10+ years of field observations and five years of targeted laboratory and field research

Methods:
- Field trials
- Laboratory and greenhouse testing
- University third-party studies
# Joint Venture Research Group

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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

Result: An interaction of specific proteins with various stress defense mechanisms of the plant
Key Scientific Findings – How the Thiamethoxam Vigor™ Effect is Expressed

• Thiamethoxam improves the level and activity of specific functional proteins

• These proteins interact with various stress defense mechanisms of the plant, allowing it to better cope under tough growing conditions, such as:
  – Drought
  – Low pH
  – High soil salinity
  – Free radicals from UV radiation
  – Heat stress leading to protein degradation
  – Toxic levels of aluminum
  – Wounding from pests, wind, hail, etc.
  – Virus attack
Conclusion

Under field conditions plants are normally exposed to various stress factors which can reduce the plant’s ability to reach its genetic yield potential.

Plants treated with thiamethoxam are more tolerant toward these stress factors. Consequently, they can grow more vigorously under suboptimal conditions, giving them a better chance of reaching their full genetic yield potential.
Why Cruiser® is the Right Choice

Insect Control – Thiamethoxam is a superior insecticide that will deliver consistent performance on a wide range of sucking, chewing and soil-dwelling pests.

Plant Vigor – Crops worldwide are responding to thiamethoxam treatments with faster emergence, increased plant stands, enhanced root systems and more vigorous growth.

Higher Yields – Growers selecting Cruiser over competitive products can expect not only the outstanding performance on insects and enhanced plant vigor, but more importantly higher crop yields and greater returns.
CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

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