



## FACT SHEET

### Executive Summary: The Value of Neonicotinoids in North American Agriculture

#### Summary

In the final report of a comprehensive study of the socio-economic benefits of neonicotinoid insecticides in North America, a group of independent economists and scientists provide compelling evidence that these products are vital to agriculture and to our society. The report confirms that neonicotinoids significantly increase crop yield and bring billions of dollars to the economy, benefiting farmers and entire communities. Losing these products is likely to have serious unintended consequences that go well beyond farming.

#### Background

- This report is the culmination of a multiyear research project evaluating more than 1,500 university field trials on eight major crops, extensive data analysis, and more than 1,700 interviews with farmers and agricultural professionals in North America.
- The eight agricultural studies summarized in this Executive Summary are based on two overarching foundational research principles: *data triangulation* and *counterfactual logic*:
  - **Data Triangulation** uses multiple methods to analyze the same issue. This enhances the validity of the results and increases the credibility of the analysis. In assessing the value of neonicotinoids, the researchers used qualitative research, econometric analysis and surveys (web-based, telephone and in-person).
  - **Counterfactual Logic** is commonly used in economic and political disciplines to determine the future impact of a policy decision. In this study, the value of neonicotinoids is revealed by answering the question, "What would happen to agriculture if neonicotinoids were no longer available?"
- The research was conducted by the independent agricultural consulting firm AgInfomatics, LLC, and the University of Wisconsin-Madison, and commissioned by an agricultural coalition committed to sound scientific discourse on neonicotinoid insecticides.

#### Key Summary Findings

##### 1) Growing Food and Fiber Matters

###### Neonicotinoids are critically important to agriculture

- Neonicotinoids help farmers control some of their most difficult pests and are critical components in the proven, scientifically-based method of pest control known as "integrated pest management" (IPM).

- Most farmers fear the loss of neonicotinoids would disrupt successful IPM programs and increase the likelihood of pest resurgence and development of resistance.
- Neonicotinoid seed treatments are the most highly valued insecticide management practice in corn, soybean and canola by farmers, valued at more than \$1.4 billion.
- An analysis of 1,550 field studies conducted over 20 years shows that neonics provide average yield increases between 3.6 and 71.3 percent in eight major North American crops.
- In soybeans, the yield benefit is 3.6 percent, which represents a three-to-one return on investment to the soybean grower based on current market prices.

## 2) Protecting Our Environment Matters

### Neonicotinoids help reduce insecticide use and maintain environmental sustainability

- Without neonicotinoids, farmers would have to rely on older chemicals (mainly pyrethroids and organophosphates) and would dramatically increase their insecticide usage.
- In commodity crops, 1 pound of neonicotinoid lost would be replaced with nearly 5 pounds of older chemicals, resulting in an increase in application rate per acre of 375 percent.
- U.S. cropland would increase between 340,000 and 410,000 acres to offset losses in yield and quality, much of which would come from the Conservation Reserve Program, environmentally sensitive land established to preserve water, soil and wildlife.
- The report highlights the unintended environmental consequences that would emerge if neonicotinoids were no longer available, including:
  - Accelerated losses of pollinators and other beneficial insects due to the increased use of alternative broad-spectrum foliar sprays.
  - Increased acreage devoted to farmland to compensate for crop losses, leading to less available forage for pollinators and refuge for other beneficial insects.
  - Decline in the use of cover crops due to increased tillage to disrupt soil pests now controlled by seed treatments, resulting in increased soil erosion, run-off and loss of habitat for wildlife.
  - Increased dependence on older chemicals, with their known impact on IPM, resistance development and invasive species management programs.

## 3) Supporting Our Farmers Matters

### Neonicotinoids reduce costs to farmers

- Replacing neonics in commodity crops would cost U.S. farmers nearly \$850 million
- Factors contributing to these higher costs include:
  - Higher costs of alternative products.
  - Higher application costs associated with more frequent spraying.
  - Higher scouting costs.
  - Increased seeding rates and/or replanting costs to offset seedling damage.
- Accelerated pest resistance, detrimental effects on IPM programs and negative environmental impacts represent additional costs to farm operations.

#### 4) Sustaining our Communities Matters

##### Neonicotinoids save consumers billions of dollars and protect jobs in our communities

- Using supply and demand models, economists estimate that a loss of neonics would cost North American consumers in excess of \$4 billion annually in higher food prices.
  - Value to the U.S. economy ranges from \$4 to \$4.3 billion.
  - Value to the Canadian economy ranges from \$150 to \$275 million.
- The loss of neonics would cost farmers initially (due to yield and quality losses), but the economy would gradually reach a new equilibrium with higher prices and more acreage.
- The research included two in-depth case studies to exemplify the significance of neonics to individual farmers and to the local communities that depend on agriculture.
- A Florida citrus grower relies on neonics as his primary defense against citrus greening, an incurable disease vectored by an invasive insect. Left unchecked, this disease threatens the state's citrus industry and could result in a loss of 76,000 jobs and nearly \$9 billion economic impact.
- A Mid-South cotton grower uses neonics for early-season pest management to help preserve beneficial insects and reduce the need for foliar sprays. Losing neonics would disrupt his successful IPM program and threaten his and other cotton businesses, creating a ripple effect to the local jobs and businesses that are dependent on cotton.

#### Overarching Messages

Economic Value	Neonicotinoids add billions of dollars of value and jobs in North America; their loss would negatively impact farmers, families, communities and the economy
Importance to IPM	Neonicotinoids are cornerstones of modern integrated pest management (IPM); their loss would undermine the very practices that help keep destructive pests in check
Invasive Pests	There are few alternatives to neonicotinoids to stop invasive pests, which if left unchecked, can have a devastating impact on commerce and entire communities
Yield & Quality	Farmers rely on neonicotinoids to optimize crop yield and quality; they would be forced to use more of less effective and/or harsher alternatives if neonics were no longer available
Unintended Consequences	A loss of neonicotinoids would have a serious impact on soil, water and pest management practices, including the loss of land used for wildlife conservation

#### Report References

***Executive Summary: The Value of Neonicotinoid Insecticides in North American Agriculture***

*This is the final report in a series recently undertaken to provide a comprehensive evaluation of the economic and societal benefits of neonicotinoid insecticides in North America. The research was conducted by AgInfomatics, a consulting firm of independent agricultural economists and scientists, and jointly commissioned and sponsored by Bayer CropScience, Syngenta and Valent U.S.A. For questions or information concerning this research and reports, please contact the Porter Novelli address identified below.*

All reports will be published online at: [www.GrowingMatters.org](http://www.GrowingMatters.org).

#### **About Growing Matters**

Growing Matters is a coalition of organizations and individuals committed to scientific discourse on the stewardship, benefits and alternatives of neonicotinoid insecticides in North America. [Bayer CropScience](#), [Syngenta](#) and [Valent U.S.A. Corporation](#) are leading this coalition with support from Mitsui Chemicals Agro, Inc.

Agriculture and horticulture are key to nourishing families and communities. Feeding a growing population, enhancing the beauty of our surroundings, and sustaining a commitment to environmental protection are fundamental needs that matter. Crop protection products, both natural and synthetic, are important tools that protect plants from tough and invasive pests that can devastate crops and urban landscapes.

Go to [www.GrowingMatters.org](http://www.GrowingMatters.org) for the latest information, reports, videos and infographics on the benefits of neonicotinoid insecticides or to show your support.

#### **Contact:**

Ayanna Robinson  
Executive Vice President, Porter Novelli  
Direct: (404) 995-4546  
Cell: (404) 358-7879  
Email: [ayanna.robinson@porternovelli.com](mailto:ayanna.robinson@porternovelli.com)