

## FACT SHEET

### The Value of Neonicotinoid Insecticides in Turf and Ornamentals

*Estimating the Economic Value of Neonicotinoid Insecticides on Flowers, Shrubs, Home Lawns and Trees in the Homescape*

#### Summary

New research by university economists evaluating insecticide decision-making in flowers, shrubs, lawns and trees finds that homeowners value the attributes provided by neonicotinoids over those of alternative insecticides and are willing to pay significantly more for the benefits these products deliver. The study found that pest control performance is the most important consideration a homeowner makes when selecting a pest management product, but also that safety to humans, pets and wildlife is highly valued.

#### Background

- Flowers, shrubs, home lawns and trees add value to homes through improved aesthetics, recreation, energy conservation and water conservation.
- Trees can save up to 56 percent on annual air-conditioning costs and large trees can add 10 percent to property value (New York Department of Environmental Conservation, 2014).
- Neonicotinoids are effective against a variety of important ornamental and turf pests, including emerald ash borer, azalea lace bug, white grub and Japanese beetle.
- The effectiveness of control and the convenience of neonicotinoid insecticides have resulted in their widespread use in residential settings, as well as in the ornamental and turf industries.
- When homeowners have a choice between different insecticides, they weigh factors such as effectiveness, convenience of application, safety to humans, pets, wildlife and bees.
- The study objective was to estimate the economic value to homeowners of insecticide attributes when selecting a product to protect residential flowers and shrubs, lawns and trees.

#### Methodology

- The study was conducted by independent university economists and AgInfomatics.
- Researchers employed widely used choice-based analytics (Choice Experiments) to study consumer preferences and willingness to pay for goods.
- Of the 19,699 homeowners surveyed, 18,885 (96%) agreed to participate. Of these, 8,556 (45%) participants acknowledged using insecticides and 7,472 completed the choice survey.
- Only those who answered "yes" to using insecticides around their homescape were surveyed.

- Respondents identified their insecticide use as “DIY” (do it yourself), “DIFM” (do it for me, using a professional service), or both.
- A total of nine insecticide attributes were evaluated:
  - Effectiveness
  - Number of applications
  - Safety to humans, pets & wildlife
  - Safety to bees
  - Prevention or curative control
  - Combination with a fertilizer
  - Application (soil or foliar)
  - Speed of control
  - Cost per acre

## Results

- Breakout of initial participants and those who finished the survey:

Survey Category	Agreed to Participate	Using Insecticides	Finished Survey
Flower/Shrub Survey	5,866	2,837	2,698
Lawn Survey	4,664	2,678	2,268
Tree Survey	8,530	3,041	2,506

- On average, participants were between 35 to 55 years old, had completed at least some college, had an annual income of \$50,000 to \$65,000, and had about 3 people per household.
- About 65% of participants were female, about 35% had children under 12 years old at home, 75% had pets, and 10% were members or past members of environmental organizations.
- On average, DIY participants spent about \$55-\$99 annually, DIFM participants spent about \$100-\$299 annually and those doing both spent about \$100-\$199 annually on insect control.
- Performance factors (effectiveness – curative or preventative) were rated as the most important attribute to homeowners, followed by safety to humans, pets and wildlife.
- In each survey, organic alternatives (insecticidal soaps, beneficial nematodes, or horticultural oils) were used as baseline standards to compare with neonicotinoids.
- Homeowners were willing to pay significant annual premiums in all survey categories for the attributes that neonicotinoids provide compared to those of alternative insecticides.

### Homeowners Willingness to Pay Premiums for Different Insecticides\*

	Neonicotinoid		Organophosphate		Pyrethroid	
	DIY	DIFM	DIY	DIFM	DIY	DIFM
Flower/Shrubs	+\$63	+\$268	-\$13	-\$37	-\$13	-\$37
Lawns	+\$75	+\$278	-\$8	+\$39	-\$102	-\$327
Trees	+\$59	+\$128	+\$6	+\$6	+\$6	+\$6

Compared to organic baseline standards: insecticidal soap, horticultural oils and nematodes for flower/shrubs, trees and lawns, respectively.

- Based on the attributes included in this study, homeowners value the attributes of neonicotinoid insecticides more than they do older alternative insecticides (i.e. pyrethroids, organophosphates).
- By comparing the attributes of different insecticides on the market, the study found homeowners are willing to pay on average at least \$105, \$136 and \$85 per year more for neonicotinoids in flowers/shrubs, lawns and trees, respectively.

## Report Reference

### ***The Value of Neonicotinoid Insecticides in Turf and Ornamentals: Estimating the Economic Value of Neonicotinoid Insecticides on Flowers, Shrubs, Home Lawns and Trees in the Homescape***

*This report is one in a series that will be released over the next few months as part of 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, Mitsui Chemicals Agro, Inc., Syngenta and Valent U.S.A. Corporation*

*All reports will be published online at: <http://GrowingMatters.org/case-studies/>.*

## 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.