

## NEONICOTINOID INSECTICIDES: KEY FACTS

### Key facts about risk assessments

- Human Health – No issues or concerns identified.
- Environmental – EPA conducted screening-level (highly conservative) assessments that are worst-case and not representative of real-world risks. These assessments require refinement prior to final risk analysis. Risks were identified by EPA for birds, mammals and aquatic invertebrates – some dependent on the use.
  - Bird & mammal assessments
    - No real-world negative impacts observed over many years of widespread use of neonics.
    - Unreasonable assumptions, such as 100% of diet is a single feed item contaminated with highest residues: e.g., a bird/mammal eats treated seed, with maximum neonicotinoid loading, every day over its entire lifetime (or eats treated forage/food in field with soil or foliar treatments).
    - Not all seeds are wildlife feed items (e.g., soybean, potato, canola, sugar beet).
    - High exposure is assumed, despite the fact that modern planter equipment minimizes seeds remaining above ground that could be available for feeding. Need to continue minimizing seed spills in field.
  - Aquatic Assessment
    - No issues for fish/amphibians, and aquatic and terrestrial plants.
    - While the EPA has indicated there are potential risks to aquatic insects, this is based on theoretical water concentrations derived from highly conservative models, which do not reflect real-world water concentrations or the protective effects of current label use restrictions. Moreover, the EPA's use of a toxicity value from a single sensitive species in a laboratory study is not representative of real-world effects on aquatic invertebrates or of the diversity of aquatic populations that exist in nature.
- Risk decisions should not be based on highly conservative risk assessments. Further refinement is necessary to better represent the real-world situations and benefits of these products. Sensible mitigation can then be applied, where needed.
- Stakeholders should play a role in the mitigation process to ensure any proposed mitigations are realistic and sensible, while allowing access to these products.

### Key facts about benefits of neonicotinoids

- Scientific evidence clearly shows that bees and other pollinators can coexist with commercial applications of neonicotinoid insecticides, when used according to label.
- Neonicotinoids are a critical part of many integrated pest management (IPM) programs.
- The loss of neonics would result in higher costs, reduced yields and more frequent sprays – all a serious setback to IPM and resistance-management programs.
- Neonics provide selective control of pests, helping ensure beneficial insects remain available to keep other potential pests in check.

## Key facts about benefits of neonicotinoids (cont'd)

- Neonicotinoids represent one of three significant classes of insecticide chemistry, along with pyrethroids and organophosphates, used in rotation within resistance-management programs.
- Without neonics, crop yields and quality would decrease, and, in some cases, catastrophic damage would result, due to the lack of alternatives to manage invasive insect pests.
- Neonicotinoid insecticide use leads to average yield increases, ranging from 3.6 percent to 71.3 percent in eight major crops in North America.
- The average yield benefit of using neonicotinoids far exceeds the cost of treatment and delivers a substantial economic return on investment to the farmer.
- If neonicotinoids were not available, growers would incur a projected net-cost increase of nearly \$850 million per year due to:
  - Increased spending on insecticides - \$157 million
  - Increased spending on applications - \$383 million
  - Increased spending on foliar scouting - \$210 million
  - Increased seeding rates/replanting costs - \$97 million
- Replacing neonics in commodity crops would cost U.S. farmers nearly \$850 million due to:
  - 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.
  - Taken as a whole, neonics contribute billions of dollars to the U.S. economy

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