



# At a Glance

## Why We Did This Review

We conducted this review to determine the U.S. Environmental Protection Agency's (EPA's) ability to manage and delay increased insect resistance to genetically engineered *Bacillus thuringiensis* (Bt) corn. Specifically, we reviewed whether the EPA collects and reviews industry Compliance Assurance Program reports, and what actions are taken by the EPA when registrants report increased insect resistance.

In 2015, the corn crop in the United States was valued at nearly \$50 billion, and 80 percent of the acreage consisted of Bt plantings. Bt crops use less conventional pesticides, which has both environmental and human health benefits. Consequently, the EPA considers the protection of insect susceptibility to Bt to be in the "public good." The EPA oversees its Insect Resistance Management (IRM) program through terms and conditions placed on industry registrants.

### This report addresses the following EPA goal or cross-agency strategy:

- *Ensuring the safety of chemicals and preventing pollution.*

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Listing of [OIG reports](#).

## EPA Needs Better Data, Plans and Tools to Manage Insect Resistance to Genetically Engineered Corn

### What We Found

The EPA's ability to manage and delay increased insect resistance to Bt corn is hindered by existing IRM program challenges. Changes are needed to the IRM program to increase the agency's ability to proactively detect resistance, confirm and address potential resistance, and share program information with stakeholders.

**Bt crops have reduced insecticide applications by 123 million pounds. The EPA can preserve this significant public benefit through enhanced monitoring and preparation to address insect resistance in Bt corn.**

The EPA's IRM program collects and reviews annual Compliance Assurance Program reports. Our review of the reports found that the program's compliance is increasing. However, we found that, beyond compliance, more is needed to detect, report and prepare for insect resistance. For example:

- The EPA has not provided industry with a standard methodology to confirm resistance, resulting in the use of inconsistent and differing methods to determine what constitutes resistance.
- Growers of Bt corn, as well as those conducting scientific research on Bt corn, lack a direct means to report resistance information to the EPA. Currently, growers and researchers must report resistance information through an industry highly invested in the economic success of Bt corn.
- The EPA needs to ensure the development of remedial action plans for registrants and growers to address resistance before it occurs. Current practice is to develop remedial action plans after resistance is detected, which can be too late to successfully prevent or mitigate resistance.

The EPA does not currently release compliance reports or resistance monitoring data developed by registrants to the public. Through website postings, the agency has the ability to publicly share information on its IRM program for the benefit of researchers, stakeholders and the public.

### Recommendations and Planned Agency Corrective Actions

We recommend that the Assistant Administrator for Chemical Safety and Pollution Prevention: (1) standardize a testing method for confirming resistance, (2) develop a method to allow researchers and growers to directly report resistance concerns, (3) prepare remedial action plans before resistance occurs, (4) increase the requirement for resistance monitoring data, (5) make Compliance Assurance Program reports and resistance monitoring data publically available, and (6) improve the EPA's website. The EPA generally agreed with our recommendations and provided acceptable corrective actions. All report recommendations are resolved. Many actions were completed in February 2016, and the agency plans to complete all actions by July 2017.