



Q&A: TREATED SEEDS

As an industry, we are fully committed to following all laws, regulations, and guidelines for the safe use of seed and management of surplus seed, and we work closely with industry and grower partners to communicate the importance of following proper guidelines at every step of the process.

What are seed treatments?

- Seed treatments are used to help protect the developing seed during its most vulnerable time—at planting germination—from early-season insect and disease damage that can severely impact crop yields.
- Seed treatments help crops grow, by enabling:
 - earlier and faster planting and increased crop yields.
 - more uniform seed germination and seedling emergence, healthier plants, and significantly reduced insect and disease damage.
- They also provide a sustainable solution to farmers. Their highly targeted, precise approach means less impact on the surrounding environment.
 - Treated seeds are one of the many valuable and innovative tools that enable America's farmers to be more productive, while using less— that's a win for farmer's bottom line and a win for the environment.

Why do farmers use treated seeds?

- Treated seeds are an important part of Integrated Pest Management (IPM) and have been widely adopted by growers for good reason – not only are they highly effective but their targeted, extremely precise approach reduces the need for farmers to apply products over the entire field.
 - For the environment, this means less impact on natural resources and non-target organisms.
 - For farmers, it means higher, more consistent yields, and use of sustainable ag practices like cover crops and no-till farming, resulting in a better return on their investment.
 - For consumers, it means access to high-quality, affordable food we all count on for our families.
- Without seed treatments, farmers would be forced to rely on crop protection solutions that are less selective and must be applied over the top of the field with more passes, and a higher usage rate.

Are treated seeds necessary?

- Yes. Some pests can damage the seed or seedling to the extent that there are no rescue treatment options available and the plants may either die or simply don't produce any harvestable yield. For untreated seed there frequently are no rescue options and crop replants occur with a cost, especially under adverse conditions. Seed treatments give farmers confidence that they are proactively managing season-long risk and minimizing the expense and environmental impact of replanting. Seed treatments can also provide crops with the protection needed to give growers a wider window of opportunity to scout for pests and apply targeted treatments for those specific pests.
- Seed treatments can provide a wider window for growers to scout and apply preventative field treatments based on pest thresholds (more for above-ground insects, i.e. cotton thrips, canola flea beetle, armyworm, soybean aphid).

What would happen if farmers didn't have access to treated seeds?

- Treated seeds are a crucial tool for growers.
- For example, according to AgInformatics research, if neonicotinoids, often applied as a seed treatment, were not available:
 - One pound of neonicotinoids would be replaced with nearly five pounds of other insecticides, resulting in an increase in application rate per acre of 375 percent and hundreds of millions of dollars in additional costs to farming operations.
 - U.S. cropped land 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 (CRP), environmentally sensitive land established to preserve water, soil, and wildlife.
 - There would be significant impacts to climate from increased carbon releases from additional tractor passes to apply foliar pesticides. There would also be degradation and compaction of soil from additional pesticide applications.

Are treated seeds safe?

- Pesticides applied as seed treatments undergo rigorous testing and review by federal and state regulators to ensure their safety to applicators, wildlife, consumers and the environment.
- Seed treatments are on the seed – where the pests attack. This targeted, local protection helps reduce the potential for off-field environmental exposure.
- Additional actions have been taken to protect pollinators, including enhanced coating polymers and application processes to increase pesticide adherence to seeds, as well as new flowability agents and enhancements to planting equipment that help ensure the treatment remains with the seed, including during planting.

Are treated seeds regulated?

- Yes! Seed treatment pesticide products are highly regulated, just as foliar and soil-applied pesticides are. And it is absolutely essential that anyone who treats, handles, transports, plants, recycles, re-uses or disposes of treated seeds manage them properly and in accordance with label instructions to minimize the risk of pesticide exposure to humans and the environment.
- Here are the facts:
 1. Seed treatment products are highly regulated, similar to sprayed and soil-applied pesticides, and undergo a thorough evaluation by the US EPA, and applicable state agencies, prior to commercialization and periodically thereafter. Only after a product is approved by the relevant federal and state agencies, can the seed treatment product be used in accordance with the EPA-approved label.
 2. Application of seed treatment products to seed must be performed strictly according to instructions on the pesticide label, approved by EPA.
 3. Labels for commercial seed treatment products carry language that must be placed on the seed tags accompanying treated seed packages regarding permitted and prohibited practices.
 4. When reviewing a pesticide, including those used as seed treatments, EPA undertakes an extensive risk assessment regarding use of the product, including but not limited to an evaluation of applying the product and planting the seed (i.e., environmental fate, ecotoxicology, and operator exposures) and the consumption of the harvested commodity by the consumer. The associated science-based evaluation also considers the application rates, analysis of the quantity “planted per day,” typical seeding/planting rates per acre, etc.
 5. All pesticides are subject to periodic review to ensure that, as the science advances and/or policies and pesticide use practices change over time, all registered products continue to meet the statutory standard of “no unreasonable adverse effects” on humans or the environment.
 6. Under 40 CFR §152.25(a), the seeds treated with pesticides are considered “treated articles” if, and only if:
 - a. the article (i.e., the seed) contains or is treated with a pesticide; and
 - b. the pesticide is intended to protect the article itself; and
 - c. the pesticide itself is registered for this use, meaning the agency has already assessed whether a particular use, e.g., use as a seed treatment, meets FIFRA’s registration standard.

Without this ‘Treated Article Exemption’ designation by EPA for seed, EPA would be required to duplicate the effort and resources it used in registering the seed treatment to also register the treated seed. And given EPA’s comprehensive assessment of the seed treatment product, the duplicated review would have no additional benefit to health, safety, or the environment, given EPA’s thorough review of the product and its uses.

7. Federal seed laws (specifically the Federal Seed Act) regulate the sale and movement of seed in the U.S., and seed companies must abide by those regulations. The Federal

Seed Act imposes requirements for labeling of treated seed. The tags on a package of treated seed must include identification of what the seed has been treated with, guidance for safe handling, and other applicable labeling requirements.

8. Before companies can make any pesticides available to farmers, they must undergo comprehensive evaluations by applicable regulatory authorities. In the U.S., the Environmental Protection Agency (EPA) requires all pesticides to undergo ~100 safety studies before they are registered for use.

How does EPA's Treated Article Exemption apply to treated seeds?

- The Treated Article Exemption ensures that EPA is efficiently using its regulatory resources in a way that is most protective of human health and the environment.
- The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the federal pesticide statute, provides EPA with the authority to exempt certain products from FIFRA. EPA has implemented that authority to exempt from FIFRA's registration requirements products that are treated with registered and approved pesticides, which themselves may meet the definition of a pesticide. This exemption is known as the "treated article exemption."
- The exemption applies to a product treated with a pesticide only if all three of the following conditions are met:
 - the article contains or is treated with a pesticide;
 - the pesticide is intended to protect the article itself; and
 - the pesticide is registered for this use, meaning the agency has already assessed whether a particular use, e.g., use as a seed treatment, meets FIFRA's registration standard.
- It has been EPA's longstanding approach that treated seed may qualify for this exemption, to ensure that EPA is carefully stewarding its resources by preventing duplicative regulations.
- This is not an exemption from FIFRA regulations.

Why does the Treated Article Exemption Exist?

- The Treated Article Exemption represents an acknowledgement by EPA that the risks and benefits of the use of products meeting the terms of exemption have been adequately assessed by the agency – it is not an acknowledgement that the products are exempt from any review. It also ensures that EPA is implementing its regulatory resources most efficiently, without unnecessary duplication.
- Without the Treated Article Exemption for seed, there would be a tremendous duplication in unnecessary paperwork and increased bureaucratic burdens—and ultimately, costs—not only for the agency, but for taxpayers and farmers.
- It's important to note that in addition to FIFRA and state level approval, seeds are regulated by the Federal Seed Act, so there are multiple layers of regulation.

- Efficient and effective regulatory processes help ensure that farmers have access to these critical technologies.

Do treated seeds impact the surrounding environment?

- Even after regulatory authorities approve a pesticide for use, they continue to consider new information to assess the safety of registered products. And no pesticide's regulatory approval is permanent. In the U.S., the EPA routinely reviews registered products to determine if they should be renewed.
- As consumers ourselves, we fully support the comprehensive and science-based processes used by the EPA and other regulatory authorities around the world to ensure these crop protection tools can be used safely.
- The EPA carefully considers effects on many non-target organisms when they approve new pesticide products for use. Following the directions for use on the registered pesticide product labels, as well as the precautionary and instructional information provided on treated seed labels, mitigates exposure of the pesticide to non-target organisms, including honeybees.

Do treated seeds harm honeybees?

- Neonicotinoid insecticides do not impact colony health when used according to the label.
- Hundreds of studies on neonicotinoids and bees indicate that when used according to label instructions, they are not harmful to bee colonies. Large-scale studies in Europe and North America show that poor bee health correlates well with parasites and diseases, but not with pesticides when used according to the label, including neonicotinoids.
- When used in typical field applications and according to label instructions, neonicotinoids do not pose a significant hazard to bees, even though some neonicotinoids, like many insecticides, are toxic to bees. This is because at normal field doses, the potential exposure to bees is far below levels that would cause concern.
- Most experts agree that many factors such as parasites, diseases, inadequate nutrition or lack of available forage, adverse weather, pesticides and hive management practices play a role in bee colony decline. The Varroa mite is the "single most detrimental pest of honeybees," according to the USDA.
 - This parasite weakens bees and helps transmit diseases that can wipe out entire colonies. Beekeepers try to control the mite with insecticides, but effective control is difficult to achieve. Researchers are exploring many ways to help protect bee health, but there is much work yet to be done
- Most people are surprised to learn that honeybee colonies actually increased by 45 percent worldwide over the past 50 years. And in the past five years, as awareness of honeybee health has grown, the number of colonies in the U.S. and Canada has increased by 13 percent and 18 percent, respectively. Annual surveys conducted by the USDA show that the number of honeybee colonies has risen over the past 10 years.

****References available at:**

https://seed-treatment-guide.com/wp-content/uploads/2021/04/Pollinator_FAQ_Updated.pdf

Why may treated seeds require disposal?

Treated seeds that are damaged, do not meet quality specifications or have become nonviable may require disposal.

How is surplus treated seed managed?

- Alternative Fuel Source for Power Plants or Cement Kilns
 - There are a number of power plants and cement companies that utilize alternative fuels. The EPA National Electric Energy Data System includes a list of power plants utilizing biomass, municipal solid waste, or non-fossil waste as an alternative fuel.
- Alternative Fuel Source for Ethanol Plants
 - A very limited number of ethanol plants have the permits necessary to dispose of treated seed through the ethanol fermentation process. In all situations, byproducts from the ethanol production process cannot enter the food or feed channels and no measurable pesticide residues are allowed. The same situation applies for wastewater and air emissions, as well.
- High-temperature incineration by a waste management facility
 - These facilities run a disposal business and confirmation of the proper permits is required.
- Disposal in Approved Municipal Landfills
 - This is allowed in some states, depending on the specific products used to treat the seed. State rules vary in approach. In addition, treated seed, and the resultant seed dust, are subject to solid waste regulations at the state and local levels.

What is the seeds industry's role in treated seed safety?

- The seed industry is fully committed to following all laws, regulations, and guidelines for the safe use and management of surplus seed.
- Seed companies also work closely with industry and grower partners to communicate the importance of following proper guidelines at every step of the process – whether they're involved in treating, handling, transporting or planting treated seed, or managing surplus seed.
- Information on these practices can be found at: seed-treatment-guide.com.