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Factsheet

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USDA Coexistence Fact Sheets
Soybeans

Growing Soybeans in the United States

In 2013, about 76 million acres of soybeans were planted, with more than 3.2 billion bushels of soybeans harvested. Soybean farmers in the United States have the choice of planting biotech, organic or conventional seeds, and make their choice based on production methods or access to direct end-use markets. Of those 76 million acres planted, 94 percent (or more than 70 million acres) of the seeds were biotech. In 2011, organic soybeans were planted on 132,411 acres, comprising 0.17 percent of the total soybean acres planted that year.

The Global Markets for Soybeans

Just over 70 percent of the soybeans grown in the United States are used for animal feed, with poultry being the number one livestock sector consuming soybeans, followed by hogs, dairy, beef and aquaculture. The second largest market for U.S. soybeans is for production of foods for human consumption, like salad oil or frying oil, which uses about 15 percent of U.S. soybeans. A distant third market for soybeans is biodiesel, using only about 5 percent of the U.S. soybean crop. In 2013, soybean exports reached record highs, exporting 43 million metric tons to overseas markets. China remains the largest export market for U.S. soybeans.

A small number of acres in the United States are dedicated to growing organic soybeans. These soybeans are divided into two types: food-grade and feed-grade, and receive premium prices. Organic food-grade soybeans are used in food products like tofu, tempeh or soymilk, and can be produced in the United States or abroad. Organic feed-grade soybeans are used to develop organic livestock feed, which is required to be fed to livestock by producers who raise certified organic meat.

Additionally, conventionally grown crops can be identity-preserved and grown for specific end-use markets, and therefore also receive premium prices. These conventional soybeans often possess certain nutritional or chemical characteristics that are desirable for a buyer. For instance, low-linolenic soybeans are grown specifically for their lower percentage of linolenic acid produced. The oil extracted from low-linolenic soybean does not need to be hydrogenated to keep it from going rancid and therefore is free of trans-fats.

Challenges for Soybean Farmers

Soybean farmers, regardless of whether they plant biotech, organic or conventional seed, manage their crops to protect them from pests, weeds, and disease. Herbicides are used in soybean fields to kill weeds that steal valuable water and nutrients from the soybean plants. Some biotech varieties of

soybeans have herbicide resistance built into the seed so farmers can spray herbicides to kill the weeds in their field without harming their soybeans.

These biotech soybean seeds have been available to farmers for nearly 20 years, and with that comes additional challenges. Some weeds are becoming resistant to herbicides (like glyphosate) used annually in soybean fields, so farmers are looking at the use of other herbicides and other methods for adequate weed control.

Organic soybean farmers must abide by the standards set forth by the National Organic Program (NOP), and therefore cannot use any biotech seeds. However, there are approved fertilizers and pesticides that can be used under the NOP guidelines, such as elemental sulfur (also used by biotech and conventional farmers), copper sulfate, hydrogen peroxide, manures, wood ashes, rock phosphate and others. Organic farmers also rely on other methods of pest control, such as crop rotation to minimize pest infestations, Bt sprays, sticky traps to trap pests, and hand-weeding or flame weeding to control weeds.

Soybeans can be identity-preserved when intended for a specific end-use, which means some additional work is required during production. Identity preserved (IP) soybeans must be closely managed from the time they are planted until they are delivered to the buyer. With the increased management requirements, though, often come premium prices.

Organic and IP conventional soybean farmers must manage the risk of commingling of their crop with biotech seed. Biotech commingling can occur from impure seed, mixing of seed, volunteer plants, equipment, and transport vehicle residue. To manage the risk effectively and ensure coexistence among soybean farmers, all farmers should follow best practices.

Best Practices for Coexistence Among Soybean Farmers

Biotech farmers can support and assist neighboring farmers who are growing organic and/or conventional soybeans by following these guidelines:

- Establish good communication with neighboring farmers, and know where organic or conventional crops are planted in your area
- Spray pesticides, herbicides and fertilizers in correct weather conditions to avoid drift
- Clean equipment regularly – dust and grain can come into contact with organic and conventional fields
- Keep good records to ensure correct best management practices were taken

Organic and conventional farmers can follow the below guidelines to minimize the risk of commingling by biotech seeds:

- Verify that seeds from supplier(s) are non-biotech Establish good communication with neighboring farmers
- Know which neighbors are planting biotech soybeans, and in which fields and consider proactively discussing with neighbors challenges that may arise and ways these could be addressed
- Post fields as organic, conventional or IP
- Set up physical barriers by isolating fields with wind breaks or by distance
- Keep harvesting and hauling vehicles clean, or segregate to keep commingling risk low

- Keep equipment, storage facilities and transportation units clean, or segregate
- Keep good records
- Save samples of seed, harvest crop and delivered crop
- Know biotech tolerances, if any, written into contracts