



Bringing New Technologies to Wheat

Information on the Development of Roundup Ready® Wheat

Biotechnology is providing new, highly effective ways to treat human disease, to manufacture chemical products, to eliminate waste, and to ensure abundant, healthful and affordable food for our world's growing population.

Several public and private breeding programs have entered collaborative agreements with Monsanto to develop Roundup Ready wheat varieties. The purpose of this brochure is to provide answers to common questions regarding the technology and the approach to market.

When will Roundup Ready wheat varieties be available to farmers?

Roundup Ready wheat will be introduced when the following milestones have been achieved:



The food, feed and environmental safety of Roundup Ready wheat is demonstrated, resulting in regulatory approvals in the United States, Canada and Japan. The intent is to commercialize in the United States and Canada simultaneously. Regulatory approvals alone will not determine when Roundup Ready wheat will be commercialized. The following milestones also will be met.



Appropriate regulatory trade approvals, thresholds or marketing agreements are in place in major export markets. This allows wheat to be traded based on buyer preferences and specifications.



Appropriate grain handling protocols and standardized sampling and detection methods are developed and implemented. This approach will provide meaningful choice for customers who prefer conventional or biotech grain. Grain handling protocols also will facilitate variety-specific marketing opportunities – creating potential added value for buyers.



Comprehensive agronomic stewardship programs and best management practices are developed. This includes science-based production protocols and an effective solution for managing wheat volunteers that contain the Roundup Ready trait.



Varieties meet or exceed industry standards for grain end-use quality. Varieties will be screened for unique quality attributes prior to introduction.



Buyers are identified who will procure and use wheat ingredients with biotech traits. Consumer acceptance for the technology is demonstrated by buyer and processor acceptance.


Aren't hundreds of acres planted to Roundup Ready wheat trials today?

In Spring 2003, there were fewer than 50 acres of Roundup Ready wheat breeding and research trials planted in the United States – representing less than 0.00008 percent of the total U.S. wheat plantings.

Does this research place non-biotech wheat fields and seed stocks at risk?

USDA-APHIS has established strict research guidelines on regulated biotech products to prevent the unintended introduction of grain into commerce. We conduct all Roundup Ready wheat laboratory, greenhouse and field research with extreme care, adhering to or exceeding strict federal and state guidelines.





Will Roundup Ready wheat become a weed that can't be controlled?

Growers will be able to use a broad range of herbicides and cultural practices currently available to control volunteer wheat. Monsanto and land-grant universities are conducting research to find the most effective method for control of volunteer Roundup Ready wheat. Identifying an effective solution to manage Roundup Ready wheat volunteers and to minimize risk is a primary objective for Monsanto.

Will adoption of Roundup Ready wheat cause us to lose markets?

We acknowledge and respect the complexities of today's trade and export environment, which represents approximately 45 percent of the market for U.S. spring wheat growers. As expected, some export markets have expressed a preference for conventional sources of wheat.

Monsanto is consulting the wheat industry – including export customers – to develop a commercial approach for Roundup Ready wheat that facilitates choice for wheat buyers. Monsanto will play an appropriate role within the wheat industry to consistently and confidently meet those market preferences.

The wheat industry has an opportunity to inform customers about the safety and benefits of biotechnology prior to the time varieties will be ready for sale to growers.

Why are private and public breeding programs working with Monsanto?

The Roundup Ready system in other crops is a proven, highly effective weed control tool that saves growers time and money. Incorporating the technology into wheat could increase the competitiveness of wheat growers in the Northern Plains and provide a much-needed additional tool in weed-control options and improved profitability for growers. This collaboration provides opportunities for thorough and careful evaluations of the technology as it moves toward commercialization.

Will Roundup Ready wheat bring value to wheat growers?

The concept behind Roundup Ready wheat is to meet growers' weed control needs by providing complete, dependable, cost-effective control. Applications of labeled Roundup® herbicides may be made up to the five-leaf stage at rates designed to provide control of nearly all broadleaf and grassy weeds.

Years of field-trial data suggests the Roundup Ready system can offer North American wheat growers a compelling set of technical benefits including:

- Broad-spectrum weed control
- Increased crop safety
- Increased yield
- Cleaner grain
- A different in-crop mode of action
- Simplified weed management
- Conservation-tillage enhancement

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