



Peaceful Coexistence: Creating a Strategy for Harmony Among GM, Organic and Conventional Alfalfa Producers

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CONVENTIONAL/ROUNDUP READY ALFALFA SEED PRODUCTION

1. Other than the intended trait of glyphosate tolerance between Roundup Ready alfalfa and conventional alfalfa, are there any other trait differences that may have environmental (and economic/social) benefits and/or consequences?

Consider growth traits, disease/insect susceptibility, mineral composition, nutritional composition, level of resistance to glyphosate, nutrient/water uptake and susceptibility to other herbicides.

Consensus: No, it's not likely.

Dissent: We don't know.

2. Is it likely that Roundup Ready alfalfa will lead to an increase in the development of glyphosate resistant weeds in Roundup Ready alfalfa seed fields, conventional alfalfa seed fields and/or other crop seed fields?

If yes, how will cultivation/tillage practices, and the use of glyphosate and other herbicides change?

Consider potential regional differences, resulting primary and secondary impacts and how the impacts can be mitigated (i.e. no-till, other tillage practices, rotation length/rotated crops).

Consensus: Not likely as long as you follow best management practices.

3. Will the use of Roundup Ready alfalfa lead to an increase in feral glyphosate tolerant alfalfa in non-crop ecosystems?

If yes, where is this likely to occur, what are the potential impacts and how could any potential impacts be mitigated?

Consensus: Yes. It can be mitigated with the use of best management practices.

4. How much will gene flow from Roundup Ready alfalfa seed fields affect non-GE alfalfa seed systems, feral alfalfa or wild relatives of alfalfa over time?

Identify the sources of gene flow.

How can industry and individual growers work together to mitigate gene flow?

Consider pollen, seed mixtures and influence of transportation, humans, wind, water, insect and soil movement.

Consensus: Very little on alfalfa markets, but has improved communications in industry. The impact depends on isolation distances, bee flight, and best management practices. Industry must focus on continuing to improve communications and education to mitigate gene flow.

5. Will the use of the Roundup Ready alfalfa seed production system lead to a negative or positive change in soil, water and air quality?

Consider use of fertilizers, nutrient loss/retention, soil erosion, rotational/cropping changes, glyphosate residue and surfactants in soil, mineral availability, soil microbial population including rhizobia, residuals in groundwater, drinking water concerns, impacts to fish, etc.

Negative:

- None.

Positive:

- Reduced chemical application
- Less soil erosion
- Improved water quality
- Reduced cultivation costs and less air pollution

6. Will animal feed or human food safety, quality or markets be improved/threatened (if so, how) by the Roundup Ready trait?

Consensus: There is improved feed value. The market is threatened due to lack of acceptance.

Education: Glyphosate is proven to be a safe product. Reduction of weeds.

7. Will Roundup Ready alfalfa seed production affect threatened and endangered species?

Consider increased glyphosate use, toxicity of Roundup Ready alfalfa indirect effects to soil microorganisms and soil biology, potential regional differences. Compare any concerns with conventional and organic production.

Consensus: It will lessen the impact of traditional farming practices. Glyphosate is a proven safe product.

Education: One application of glyphosate is better than multiple applications of other more harmful chemicals.

8. How will the deregulation of Roundup Ready alfalfa positively/negatively alter the economics of alfalfa seed production?

Consider cost of seed, change in herbicide use, weed problems, cultivation/tillage practices, disease/insect susceptibility, yield, quality, public perception, change in demand.

Positive

- Reduced overall production costs
- Improved seed quality
- Reduced cleaning costs
- More competitive with other crops

Negative

- Increased identity preservation costs
- Increased seed costs
- Impacts on markets

9. How can growers of conventional alfalfa seed and GE alfalfa seed “peacefully coexist” in our ever-evolving global market and specifically, what tools are needed to ensure the long-term viability of all market opportunities?

Consider cost of responsible stewardship, segregation, education/training, contracts, isolation distances, parent seed sourcing, testing, quality management systems, timing isolation, equipment cleaning, zoning, technical assistance, etc.

Consensus: Industry needs to focus on communication, cooperation, consideration, education, compliance and best management practices in production.