

**Biofortified.org Comments on the
Glyphosate-Tolerant Alfalfa Events:
Final Environmental Impact Statement
(December 2010) (Document ID APHIS-
2007-0044-12532)**



Biofortified.org is an independent group website devoted to providing factual information and fostering discussion about agriculture, especially plant genetics and genetic engineering. Karl Haro von Mogel and Anastasia Bodnar are the two Executive Editors, and this represents their opinions with regard to the proposed deregulation of Glyphosate-Tolerant Alfalfa.

We feel that although we do not have strong opinions about these transgenic events in particular, that this Environmental Impact Statement merits comment due to its focus on the important issue of coexistence between Genetically Engineered (GE) and non-GE forms of agriculture.

Pollen as an aggressor?

In debates over unintended admixture of GE and non-GE crops through cross-pollination, it is often suggested that the source of the pollen bears responsibility when this occurs. Opponents of GE crops vociferously argue that the farmer growing (or the organization that created) a GE crop should be held responsible when unwanted cross-pollination occurs. The argument is that if a non-GE farmer loses an economic premium via the presence of transgenes above a certain threshold, that this presents an undue economic harm. But we can easily envision potential future situations where this would result in the opposite of what might be intended by such a perspective.

Genetic engineering has the potential to make crops such as wheat and peanuts that are no longer allergenic, which can benefit people who are sensitive to these foods. But in these cases, cross-pollination from non-GE peanuts and wheat would not only cause economic harm to the growers of hypoallergenic specialty varieties, it could also be dangerous for consumers allergic to the proteins in the non-GE varieties. If you take the perspective that the source of the pollen is to blame, then you must conclude that non-GE wheat or peanuts must be responsible for any harm caused to such hypoallergenic varieties.

Issues of cross-pollination are not exclusive to debates over genetic engineering. In California, there are currently seedless mandarin orange farmers that are complaining about cross-pollination from nearby citrus groves. These particular mandarins produce seedless fruit without pollination, which fetches a price premium several times higher than mandarins with seeds in them. However, if a different variety of citrus trees is grown nearby, and bees bring pollen from these other varieties while visiting the mandarin flowers, the mandarins will develop seeds and lose their value. As a result, the mandarin growers are trying to prevent beekeepers from being able to operate nearby to protect their price premiums. Who is responsible in this case? Although it is more complicated as

there are three parties instead of two, it does illustrate that we clearly need a wider discussion of the issue of cross-pollination within and without genetic engineering. *Unless we can answer the question of how different citrus growers and beekeepers can coexist in California, we cannot answer the question of how to have long-term meaningful coexistence of GE and non-GE crops.* What ethical principles we derive must apply broadly in many different situations.

Geographical Restrictions

The USDA has proposed as one of its deregulation options the possibility of restricting the growing and seed production areas of GE alfalfa to reduce the possibility of unwanted cross-pollination from GE to non-GE alfalfa seed supplies. Geographic restrictions *may* help maintain the ability of both seed systems to coexist. For those concerned about exporting non-GE alfalfa to nations that have not approved the GE varieties, it could also help maintain confidence in its non-GE status by those export markets. However, we foresee a problem with how the rules are being proposed that needs to be addressed.

According to the EIS, farmers growing GE alfalfa for hay or for seed cannot grow within certain distances of non-GE alfalfa fields:

“In Tier III states GT alfalfa for forage cannot be planted in counties where seed is grown (based on the 2007 Census of Agriculture).”

And

“GT alfalfa seed production will be limited to the geographic areas in Tiers II and III where the grower can maintain isolation distances of 5 miles between GT alfalfa and conventional alfalfa.”

The problem with this as it is worded is that it puts the responsibility for isolation entirely on one party. While this may at first make intuitive sense, let's suppose that in a Tier II or III state, a particular region has an abundance of GE alfalfa being grown for forage or for seed, and no non-GE alfalfa is being grown nearby. Let's say that all non-GE alfalfa fields are greater than 5 miles away, or are in another county. There would be no conflicts in this situation, which we believe is what is intended. However, should just one non-GE alfalfa seed producer or forage grower decide to start planting amongst the GE alfalfa growers or seed producers, a problem arises. However, if such a conflict arose it would be the established GE alfalfa operations (and not the encroaching non-GE alfalfa) that would be considered in violation of the rules and would need to shut down. This means that as the proposed regulations are worded, GE alfalfa growers and seed producers are afforded a second-class citizen status next to non-GE growers. Perhaps the USDA intends by the first quoted passage above to define the non-GE seed-production counties by the 2007 census alone, or change it with future censuses – which would have different implications for coexistence in either case. But it would take just one non-GE alfalfa forage field to shut down or cause a GE alfalfa seed production operation to move, and that sets a troublesome precedent.

Responsibility on both sides

It takes two gametes to make a seed. Likewise there are things that both GE and non-GE farmers can do to foster coexistence, as well as the USDA.

Both GE and non-GE farmers must share responsibility for unwanted cross-pollination. There are sensible strategies that the farmers can employ such as buffer strips and alternative flowers for bees to visit that they will prefer over alfalfa should unwanted flowering occur, for example. Genetic barriers to reproduction between GE and non-GE varieties can also be employed by breeders on both sides to limit successful pollinations. Unilateral freedom to operate and expect only your neighbor to change their operation must be resisted in either case. Communication between neighboring farmers is paramount.

The USDA can play a large role in this. While some question the USDA's authority to regulate GE crops in anything other than an all-or-nothing approach, the USDA's role in extension is clear and unambiguous. Improvements in extension and outreach education can help make coexistence work. We would go so far as to say that coexistence cannot work without adequate extension to prepare farmers for such conflicts as they may arise.

Conclusion

We appreciate being able to have the opportunity to comment on the deregulation of Glyphosate-tolerant alfalfa and can be contacted at contact@biofortified.org if you would like to discuss our comments with us further.

Sincerely,
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