

## **WHAT ARE THE KEY ELEMENTS TO IMPLEMENT COEXISTENCE BETWEEN GE AND NON-GE ALFALFA?**

**By Paul Frey<sup>1</sup>**

### **SPEAKER BACKGROUND**

Paul Frey is the President/CEO of Cal/West Seeds a grower owned cooperative that focuses on developing, producing and marketing forage seeds around the world. Cal/West has been conducting biotechnology development on alfalfa since 1996. They are also active marketers of alfalfa seed to GMO sensitive market segments domestically and internationally. Mr. Frey holds a degree in Agronomy and has over 35 years of experience in the global seed industry. He has been an active participant in efforts to develop coexistence efforts relating to Roundup Ready alfalfa including participating in NAFA and USDA coexistence discussions. In addition, he is active in numerous state, national and international seed organizations.

### **HOW WOULD YOU DEFINE COEXISTENCE?**

Coexistence literally means to exist together in a peaceful manner. Coexistence, for the purposes of this paper, refers to the concurrent cultivation of conventional, organic and genetically engineered crops consistent with underlying consumer preferences and choices.

### **IS COEXISTENCE POSSIBLE?**

Coexistence is possible provided that mechanisms are developed and implemented that make it feasible for parties involved to conduct their activities in a reasonable manner. Developing the mechanisms requires communication, compromise, mutual respect, identification and utilization of science based practices, establishment of reasonable/achievable quality standards, patience and hard work.

### **WHAT ARE THE KEY POLICIES AND MECHANISMS NECESSARY TO IMPLEMENT COEXISTENCE BETWEEN GE AND NON-GE ALFALFA CROPS?**

I like to think of this utilizing the suffix –“ation”, meaning an action or process. Here are a few, in random order: Deregulation, Education, Communication, Identification, Classification, Standardization, Mitigation, Isolation, Segregation, Verification, and Validation. If these steps are taken successfully in the right order with input from all parties, coexistence has a chance. I think there are some excellent lessons, both positive and negative, to be learned from the Roundup Ready alfalfa experience that industry should apply as additional traits come to market. Clearly the alfalfa plant is a unique species due to the fact that it is a perennial pollinated by bees. As more traits come to market, the species and the traits will vary but these basic action steps will likely remain constant.

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<sup>1</sup> Paul Frey, Cal/West Seeds ([www.calwestseeds.com](http://www.calwestseeds.com)) Published in Proceedings, 2011 Western Alfalfa & Forage Conference, Las Vegas, NV, 11-13 December, 2011. UC Cooperative Extension, Plant Sciences Department, University of California, Davis, CA 95616 (see <http://alfalfa.ucdavis.edu> for this and previous year alfalfa symposium proceedings).

**WILL THE INTRODUCTION OF ROUNDUP-READY ALFALFA INEVITABLY RESULT IN THE DESTRUCTION OF ORGANIC, EXPORT OR OTHER GE-SENSITIVE ALFALFA PRODUCTION?**

In the absence of adequate control measures I believe this trait could become present at low levels in the vast majority of alfalfa. The industry is working to develop, implement, monitor and refine best management practices to make it possible for the GE sensitive market segment to continue to grow. For that to occur, I believe the GE sensitive market segments need to work with the industry to define and implement acceptable and achievable standards of low level presence of the GE trait. This is a fundamental principle utilized in many industries on a global basis.

**IT IS LIKELY THAT COEXISTENCE WOULD MEAN THAT SOME GROWERS (BOTH GE-ADAPTING AND NON-GE) WILL HAVE TO ADJUST METHODS OR SACRIFICE CHOICES IN ORDER TO ACCOMPLISH THE BROADER GOAL OF COEXISTENCE. HOW SHOULD THAT BE DECIDED?**

In the absence of standards for LLP (low level presence), this potential problem is magnified. With reasonable and deliverable LLP standards, growers have more choices and options. As to “how”, we believe decisions relating to this issue should be science based. In the case of Roundup Ready alfalfa seed production, the seed growers in consultation with the seed companies have the opportunity to create zones based on a protocol adopted by the National Alfalfa and Forage Alliance.

**IS ZERO CONTAMINATION OF ALFALFA HAY OR SEED POSSIBLE?**

At the commercial level zero contamination will become more and more difficult to achieve. At the research level it is possible, but requires additional quality management steps.

**HOW SHOULD THRESHOLDS FOR CONTAMINATION (WHETHER ZERO OR LOW LEVEL PRESENCE) OF GE-SENSITIVE ALFALFA PRODUCTION BE DECIDED?**

The threshold must be achievable and deliverable at a price the market will bear. In the case of alfalfa, the key is in the seed production and conditioning processes. The seed production segment of the industry has the data and experience to recommend threshold levels that can be achieved on a commercial scale. We also have the ability to test and report on the presence or absence of a GE trait. If a GE sensitive market feels the standard is unacceptable they should provide the scientific facts to support an alternative LLP level. The consequence could be limited supplies and/or significantly higher seed costs for GE-sensitive markets.

**SHOULD SUCH POLICIES AND MECHANISMS BE DETERMINED BY GOVERNMENT REGULATION OR BY INDUSTRY STANDARDS?**

The industry has to provide leadership in developing standards and methods to achieve them. While the majority may agree that Government Regulation is not the way to go, some form of Governance is needed in order to verify results and ensure compliance. In the absence of that governance, it is likely that parties could be forced to resort to litigation if and when they incur losses. In the current economy and political climate, the formation of a commission funded by industry with industry governance might be a plausible alternative to Government Regulation.

## **HOW IMPORTANT IS A COEXISTENCE STRATEGY FOR ALFALFA GROWERS AND THE ALFALFA INDUSTRY?**

We believe it is essential. Biotechnology is a very valuable tool available to researchers that can open up possibilities that traditional plant breeding to date has not been able to accomplish. At the same time, growers and consumers should have the freedom to choose what technologies they want to utilize and have the assurance that it is safe. Alfalfa is one the nation's largest crops providing superior livestock nutrition along with benefits for the soil and environment. As the population continues to increase the demand for protein is projected to increase dramatically. As a premier livestock feed alfalfa can play a key role in meeting this increased demand. Developing new traits in alfalfa can make it possible to improve the feed value and produce more alfalfa with fewer inputs. It can also make it possible for alfalfa to be produced successfully in areas with more marginal soils, reserving more productive land to produce row crops.

### **GENERAL COMMENTS & CONCLUSIONS**

I believe that lack of knowledge regarding what biotechnology is and isn't continues to be a root cause of the conflict that underpins this whole coexistence topic. There continues to be a "fear" and or lack of trust in our regulatory system and large corporations that fuels this issue. Throughout history, technology has brought about change and for some, the change is threatening. One way to address this issue is to focus on education so that more people can have the opportunity to learn about the exciting potential biotechnology offers. This education process needs to include regulators and policy makers as well as producers and consumers who are interested in maintaining an adequate healthy food supply. If more resources were allocated to education, coexistence would be easier to achieve.

### **NOTE ON THIS PUBLICATION:**

*This article is published as a part of a panel discussion on Coexistence between Genetically-Engineered (GE) alfalfa and non-GE alfalfa held December 13, 2011 at Las Vegas, NV at the Western Alfalfa & Forage Conference. Each panelist was asked for their views on coexistence, guided by several specific questions. **Background:** As a general background, Roundup Ready alfalfa was first released in 2005, and subsequently the subject of a lawsuit which precluded further planting from 2007 through 2011, while USDA-APHIS conducted an Environmental Impact Study. A key component of both the lawsuit and the EIS was the question as to whether gene flow and contamination would harm non-GE growers. USDA-APHIS decided in 2010 that Roundup Ready alfalfa was safe for the environment and further plantings were authorized early in 2011. However, coexistence between divergent systems remains an important issue, particularly for organic growers, seed growers and companies, and exporters. Subsequent documentation and efforts to encourage coexistence and solve the issues between GE and non-GE production have been ongoing by farmers, companies, hay grower and seed groups, Universities, and government agencies.*