

August 25, 2017

Agricultural Marketing Service  
U.S. Department of Agriculture

Re: The National Bioengineered Food Disclosure Standard Law

Dear Agricultural Marketing Service,

Thank you for preparing these questions and accepting input for The National Bioengineered Food Disclosure Standard Law proposed rule.

The Crop Science Society of America (CSSA) represents over 5,000 scientists in academia, industry, and government. As such, we represent the largest coalition of professionals dedicated to advancing the field of crop science. We are pleased to offer these comments and suggestions to help scientifically inform your efforts in creating a labeling standard.

**2. Which breeding techniques should AMS consider as conventional breeding? (Sec. 291(1)(B))**

Conventional breeding encompasses a broad range of techniques, including but not limited to controlled crosses, marker assisted selection, the production and use in breeding of doubled haploids, protoplast fusion, chemical and biological mutagens, hybridization through embryo rescue, induced polyploidy, and tissue culture.

**3. Which modifications should AMS consider to be found in nature? (Sec. 291(1)(B))**

We encourage AMS to reflect upon the natural and common occurrence of mutations, additions, duplications, deletions, chromosomal rearrangements, and horizontal gene transfer from single to multicellular organisms when considering which modifications to classify as “found in nature.” Natural genetic changes are the historic cause of all variation in life on Earth, and evidence of these changes are written into the DNA of every living thing. With respect to horizontal gene transfer, nature does not often provide a straight line from one unrelated species to another, but it is not unheard of either. Many organisms are known to exchange genetic material through bacterial and viral vectors, and the genetic material of bacteria and viruses are commonly found in plants and animals. Human DNA is at least 8% viral in origin<sup>1</sup>, for example, and animals like flies and nematodes have evidence of bacterial, viral, and possibly plant genes in their genomes as well.<sup>2</sup>

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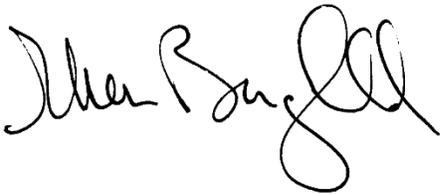
<sup>1</sup> <http://www.pnas.org/content/early/2016/03/16/1602336113.full.pdf>

<sup>2</sup> <https://genomebiology.biomedcentral.com/articles/10.1186/s13059-015-0607-3>

**4. Will AMS require disclosure for food that contains highly refined products, such as oils or sugars derived from bioengineered crops? (Sec. 291(1)(A))**

Consumers enjoy a variety of products made with genetically engineered organisms that contain no genetically modified material themselves, such as antibiotics, artificial insulin, cheese, and alcohol. These products, though made with genetically modified bacteria or yeast, have never been targeted by labeling campaigns and have generally been accepted by consumers to not require special GMO labeling – Vermont’s labeling law had exceptions for cheese, beer, and wine, for example, made by using enzymes from genetically modified bacteria, and for milk from cows that had eaten genetically modified food. It would be consistent, therefore, to not require labeling for highly refined food products similarly derived from bioengineered crops.

Sincerely,

A handwritten signature in black ink, appearing to read "Ellen Bergfled". The signature is fluid and cursive, with a large loop at the end of the last name.

Ellen Bergfled, CEO