



BEYOND PESTICIDES

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September 23, 2017

Ms. Michelle Arsenault
National Organic Standards Board
USDA-AMS-NOP
1400 Independence Ave. SW.,
Room 2648-S, Mail Stop 0268
Washington, DC 20250-0268

Re. MS: Excluded Methods Terminology

These comments to the National Organic Standards Board (NOSB) on its Fall 2017 agenda are submitted on behalf of Beyond Pesticides. Founded in 1981 as a national, grassroots, membership organization that represents community-based organizations and a range of people seeking to bridge the interests of consumers, farmers and farmworkers, Beyond Pesticides advances improved protections from pesticides and alternative pest management strategies that reduce or eliminate a reliance on pesticides. Our membership and network span the 50 states and the world.

We support the proposal of the Materials Subcommittee (MS) to add cisgenesis, intragenesis and agro-infiltration to the list of excluded methods. We urge the same for transposons, which are still listed as TBD in the terminology chart. Whether genes are moved or manipulated between species or within species, all four techniques (cisgenesis, intragenesis, agroinfiltration, and use of transposons) fit the definition of genetic engineering under Definitions and Principles and Criteria.

Cisgenesis refers to “the genetic modification of a recipient plant with a natural gene from a sexually compatible plant. Such a gene includes its introns and is flanked by its native promoter and terminator in the normal-sense orientation.”¹ Intragenesis also involves the genetic engineering (or genetic modification) of a recipient plant with hybrid genes from a crossable species. Unlike cisgenesis, with intragenesis, the regulatory components of the gene (e.g., the promoter and the terminator region) do not need to come from the same species, but can originate from a crossable species.²

In agro-infiltration, as the MS chart states, “in vitro nucleic acids are introduced to plant leaves to be infiltrated into them.” Thus, agroinfiltration is clearly an in vitro nucleic acid

¹ Schouten HJ, Krens FA and E Jacobsen. 2006. Cisgenic plants are similar to traditionally bred plants.

EMBO Reports, 7(8): 750-753. At: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1525145/pdf/7400769.pdf>.

² Camacho, A., Van Deynze, A., Chi-Ham, C. and Bennett, A.B., 2014. Genetically engineered crops that fly under the US regulatory radar. *Nature biotechnology*, 32(11), pp.1087-1091.

technique and thus falls under the definition of “modern biotechnology,” and should be an excluded technique since modern biotechnology is an excluded method.³

Transposons are mobile genetic elements that have been used to genetically engineer plants and animals. They are “discrete pieces of DNA with the ability to change their positions within the genome *via* a 'cut and paste' mechanism called transposition,”⁴ and thus clearly meet criteria 1 and 3 for excluded methods. Transposons can also be used to create animals' vaccines. Genetically engineered vaccines are not currently prohibited in the organic program.

A comment on the MS presentation: The six-page document provided much background, but did not provide support for the actual proposal in terms of reasons and citations. Our research and that previously submitted by other organizations does support the classification of cisgenesis, intragenesis and agro-infiltration (as well transposons) as excluded methods, but we urge the MS to be more explicit in giving reasons for the proposal.

Thank you for your consideration of these comments.

Sincerely,

A handwritten signature in cursive script, appearing to read "Terry Shistar".

Terry Shistar, Ph.D.
Board of Directors

³ Santos-Rosa, M., Poutaraud, A., Merdinoglu, D. and Mestre, P., 2008. Development of a transient expression system in grapevine via agro-infiltration. *Plant cell reports*, 27(6), pp.1053-1063.

⁴ Ivics, Z. and Izsvák, Z., 2010. The expanding universe of transposon technologies for gene and cell engineering. *Mobile DNA*, 1(1), p.25.