



BEYOND PESTICIDES

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April 3, 2015

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. CS: Ethylene gas, sodium silicate, and microcrystalline cheesewax.

These comments to the National Organic Standards Board (NOSB) on its Spring 2015 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 groups around the world.

These comments cover three 2017 crops sunset materials that were not covered in other categories.

Current listings

§205.601

(k) As plant growth regulators. Ethylene gas—for regulation of pineapple flowering.

(l) As floating agents in postharvest handling.

(2) Sodium silicate—for tree fruit and fiber processing.

(o) As production aids. Microcrystalline cheesewax (CAS #'s 64742-42-3, 8009-03-08, and 8002-74-2)-for use in log grown mushroom production. Must be made without either ethylene-propylene co-polymer or synthetic colors.

Ethylene gas

Ethylene gas is used to promote uniform flowering –and hence uniform fruit production—of pineapples. It is used more often by large pineapple producers than small producers because of the cost. It is mostly made from hydrocarbon feedstocks, is toxic to plants and animals, and poses dangers as an explosive gas.

Past decisions have considered the differential impact on different scales of production.

Ethylene gas is hazardous to humans and the environment.

Almost all the ethylene used will eventually end up in air; a small proportion will end up in water.¹ Ethylene is made from hydrocarbon feedstocks, such as natural gas liquids or crude oil. It is explosive. It requires boiler feed water preparation, treatment of noxious effluents, and steam and electric generation.²

Direct exposure may result in acute toxicity leading to death of animals, birds, or fish and death or low growth rate in plants. It is slightly acutely toxic to aquatic life. Although insufficient data are available to evaluate or predict the short-term or long-term effects of ethylene to birds or land animals, "Chronic toxic effects may include shortened lifespan, reproductive problems, lower fertility, and others."³ Worker safety is a concern.⁴

Ethylene is not essential for organic production.

The need to produce uniform flowering of pineapples is only essential for a particular style and scale of pineapple culture. The NOSB is not obliged to approve synthetic materials that make every style and scale of agriculture possible. Rather, it is the responsibility of organic growers to use methods consistent with organic practices.

The use of ethylene gas is incompatible with organic production.

There is no category in OFPA §6517(c)(1)(B)(i) for synthetic growth regulators. As pointed out by Reviewer 3 in the TAP review, the use of such synthetic materials is contrary to consumer expectations. This reviewer also said, "It appears the ethylene use in pineapples is more a question of economics and farm size rather than agronomic need."

Conclusion

Ethylene gas should be delisted because it fails to meet the OFPA criteria of freedom from health and environmental harm, essentiality, and compatibility with organic production.

Sodium silicate

Sodium silicate, also known as waterglass, is a soluble form of glass. It is used to adjust the specific gravity in flotation tanks for pears. Historically, it was used as a preservative for eggs, filling pores and preventing eggs from degrading. It is not clear whether sodium silicate might have a preservative effect on pears. Sodium silicate has few health and environmental impacts, which are mainly due to the effects of the alkalinity of the solution in the case of a spill or misuse. There are alternatives, some of which are nonsynthetic, as well as floatless systems, as discussed in the Organic Trade Association petition to remove lignin sulfonate from the National List for the flotation use.

¹ 1999 TAP, p. 2.

² 1999 TAP, pp. 1-2.

³ 1999 TAP, p. 2.

⁴ Supplemental TR 2000, p. 3.

The use for fiber processing did not receive much attention in the technical review. Its health impacts on workers and essentiality for that use are not clear. The summary by the Crops Subcommittee did not mention this use or ask questions about it.

Spills of sodium silicate can pose environmental hazards. Its use in fiber production may cause health effects to workers.

Spills or release into water sources can result in imbalance of silicate to nitrogen and phosphorus and increased pH.⁵ Worker exposure during mixing, disposal, and handling of fiber may result in injury.⁶

Sodium silicate is not necessary.

As stated in the technical review and the petition to remove lignin sulfonate submitted by the Organic Trade Association, there are several alternative materials available, including some natural materials. Floatless systems are also in use.⁷

Sodium silicate is incompatible with organic production.

Sodium silicate does not fit into any category in OFPA §6517(c)(1)(B)(i). It is not clear whether it is a synthetic preservative. It is a synthetic material that is not needed in organic production.

Conclusion

Sodium silicate should be delisted for its use in floating pears because it does not meet the OFPA criteria of absence of harm to human health and the environment, essentiality, and compatibility with organic production. The Crops Subcommittee must collect and evaluate information concerning the use of sodium silicate in fiber processing.

Microcrystalline cheesewax

Microcrystalline cheesewax is used to seal the plug or sawdust spawn that is used to inoculate logs for growing mushrooms. It is a petroleum product and, though used in small quantities, does not biodegrade. There are many data gaps in the information concerning the allowed components of microcrystalline cheesewax. “Natural” soy wax from domestically-produced non-GMO soybeans –made by hydrogenating soy oil— is now available and was not considered when microcrystalline cheesewax was listed.

There are health and environmental impacts associated with the production and use of microcrystalline cheesewax.

The cheesewax is a petroleum product and therefore has environmental impact associated with petroleum production and refining. In addition, the checklist prepared by the Crops Subcommittee lists a number of health and environmental impacts of the specific components of the cheesewax.

⁵ TR lines 320-325; 348-355; 357-360.

⁶ TR lines 369-387.

⁷ TR lines 397-413. OTA petition to remove lignin sulfonate.

There is a non-petroleum-based alternative to microcrystalline cheesewax.

Soy wax from domestically-produced, non-GMO soybeans is available, and is used by mushroom producers. Soy wax is produced by the hydrogenation of soy oil, and is not listed as a nonsynthetic allowed substance by OMRI.⁸ We believe that hydrogenation is a chemical change that would result in the classification of soy wax as synthetic, so we are petitioning to have soy wax from domestically-produced, non-GMO soybeans added to the National List, with the hope that it would eventually be found to be a substitute for microcrystalline cheesewax. Meanwhile, the listing of soy wax would allow organic producers of mushrooms on logs to use a more environmentally-friendly alternative. Microcrystalline cheesewax should remain on the National List until soy wax is listed and determined to be sufficiently available.

Thank you for your consideration of these comments.

Sincerely,



Terry Shistar, Ph.D.
Board of Directors

⁸ <http://www.fungi.com/product-detail/product/sealing-wax-for-plug-spawn-10-pounds.html>;
<http://www.sporetradingpost.com/plugs.htm>; <http://www.soya.be/soy-wax-production.php>;
<http://www.omri.org/simple-gml-search/results/wax>