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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: Soap-based herbicides, insecticidal soaps, sucrose octanoate esters, ammonium soaps
LS: Sucrose octanoate esters

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 address soap-based materials due to sunset in 2017.

Soap-based Algicides/Demossers

(Also with sanitizers.)
Current listing:
§205.601(a) As algicide, disinfectants, and sanitizer, including irrigation system cleaning systems.
(7) Soap-based algicide/demossers.

The materials on this substance leave questions unanswered. The original TAP review appears to have considered only potassium-based soaps, but the more recent TR considers both potassium- and ammonium-based soaps. Yet, ammonium-based soaps seem to be limited to another use altogether by §205.601(d), "As animal repellents—Soaps, ammonium—for use as a large animal repellant only, no contact with soil or edible portion of crop."

Secondly, the use pattern is not defined. Although the materials included with the original TAP review and much of the discussion in the recent TR address a use in which the substance is sprayed on surfaces covered with algae or moss, the TR also discusses alternatives to use in ponds. This is important because while the use on surfaces like walkways and benches in greenhouses pose little environmental hazard, the use in a waterbody is quite different. As the TR says, "The acute and chronic toxicity of soap salts is markedly different for land- and water-dwelling organisms."

Conclusion

The listing of soap-based algicides and demossers must be clarified. They should not be allowed for application to water. We believe that this action is necessary to ensure that OFPA criteria are met. The NOP's sunset policy does not allow this change to be made as part of the sunset process. Therefore, the NOSB must make the change through a two-stage process of removing the listing and creating a new listing. The USDA Office of General Counsel has previously ruled that a petition is not necessary for this process. In fact, the first National List did not arise based on petitions.[1]

Soap-based Herbicides

Current listing:
§205.601 (b) As herbicides, weed barriers, as applicable.
(1) Herbicides, soap-based—for use in farmstead maintenance (roadways, ditches, right of ways, building perimeters) and ornamental crops.

The materials on this substance leave questions unanswered. The original TAP review appears to have considered only potassium-based soaps, but the more recent TR considers both potassium- and ammonium-based soaps. Yet ammonium-based soaps seem to be limited to another use altogether by §205.601(d) "As animal repellents—Soaps, ammonium—for use as a large animal repellant only, no contact with soil or edible portion of crop."

Herbicidal soaps do not meet any of the three OFPA criteria of absence of harm to humans and the environment, essentiality, and compatibility with organic practices.

Herbicidal soaps are inconsistent with organic practices.

Herbicidal soaps are non-selective synthetic herbicides. The NOSB has generally found synthetic herbicides to be incompatible with organic practices. Indeed, their use is inconsistent with the first "principle of organic production and handling" adopted by the NOSB:

> Organic agriculture is an ecological production management system that promotes and enhances biodiversity, biological cycles, and soil biological activity. It emphasizes the use of management practices in preference to the use of off-farm inputs, taking into account that regional conditions require locally adapted systems. These goals are met, where possible, through the use of cultural, biological, and mechanical methods, as opposed to using synthetic materials to fulfill specific functions within the system.[2]

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[1] The November 2009 NOSB recommendation on chlorhexidine said, "In terms of the board recommending a substance to be added to the national list without a petition, (An OGC person sees) nothing in the OFPA or NOP regulations that would prohibit such action. (Another OGC person) agrees as well, and indicated that he believes the original NL was created by the board without any petitions. In either event, it would seem like the board's primary function is to make recommendations concerning the NL (to add, remove, renew, etc.) and that petitions are just one mechanism through which the board can make such recommendations."
http://www.ams.usda.gov/AMSv1.0/getfile?dDocName=STELPRDC5081492&acct=nosb

[2] NOSB Principles of Organic Production and Handling, adopted October 17, 2001.

Herbicidal soaps harm the ecosystem.
The Technical Review (TR) finds a possibility of damage to, and bioconcentration by, aquatic organisms if the soaps are applied to water. They may harm many soil-dwelling organisms including insects, earthworms, and nematodes that are supportive of organic production. The annotation restricts its use to non-crop areas, but these areas should be sources of biodiversity that support the farm.

Herbicidal soaps are not essential.
The TR and earlier TAP review list several natural materials that can be used instead of herbicidal soaps, including vinegar, citric acid, essential oils, corn gluten meal, mulches, and hot water. Alternative practices include mulching, mowing, grazing, hand/mechanical cultivation, and use of flame or other sources of heat.

Conclusion
Herbicidal soaps should be allowed to sunset because they do not meet the criteria for listing on the National List.

Insecticidal Soaps
Current listing:
§205.601 (e) As insecticides (including acaricides or mite control).
(8) Soaps, insecticidal.

Insecticidal soaps are potassium salts of fatty acids that act by penetrating insect cuticle and disrupting cell membranes. They have low toxicity to humans and are broken down quickly in the environment. However, they may affect non-target insects, including predators and parasitoids, as well as some plants. Alternatives are oils, botanicals, and cultural and biological controls. The information about impacts on non-target insects has not been considered in the past. Insecticidal soaps do not meet any of the three OFPA criteria of absence of harm to humans and the environment, essentiality, and compatibility with organic practices.

Insecticidal soaps are inconsistent with organic practices.
Insecticidal soaps are broad-spectrum synthetic insecticides. Their use is inconsistent with organic practices unless they can be used in a way that ensures they will not disrupt the balance of the agroecosystem. Since they are nonselective, they kill predatory arthropods – especially the more vulnerable larval stage.[3]

[3] Jean P Jansen, Thibaut Defrance and Anne M Warnier, 2010. Effects of organic-farming-compatible insecticides on four aphid natural enemy species. Pest Management Science, Volume 66, Issue 6, pages 650–656. (Insecticidal soaps had significant effects on mortality of larval lady beetles and adult parasitoid wasps, but not on ground-dwelling beetles, exposed to dried residues of the soap.) David J. Schuster and Philip A. Stansly, 2000. Response of two lacewing species to biorational and broad-spectrum insecticides. Phytoparasitica Volume 28, Issue 4 , pp 297-304. (Insecticidal soap was toxic to lacewing adults and larvae by topical, but not by residual exposure.) S. F. Smith and V. A. Krischik, 2000. Effects of Biorational Pesticides on Four Coccinellid Species (Coleoptera: Coccinellidae) having Potential as Biological Control Agents in Interiorscapes. J. Econ. Entomol. 93(3): 732-736. (Insecticidal soap sprayed onto adults significantly increased mortality of ladybird beetles).

Insecticidal soaps harm the ecosystem.

The Technical Review (TR) for herbicidal soaps finds a possibility of damage to, and bioaccumulation in, aquatic organisms if the soap containing lauric acid is applied to water. They may harm many soil-dwelling organisms including predatory insects, earthworms, and nematodes that are supportive of organic production.

Insecticidal soaps are not essential.

Natural alternative materials include botanicals like neem oil, smothering vegetable-based oils, pheromones, and biological insecticides. Other methods include site selection, rotation, companion planting, and encouraging predators and parasites.

Conclusion

Insecticidal soaps should be allowed to sunset because they do not meet the criteria for listing on the National List.

Sucrose Octanoate Esters

Current Listing:
§205.601 (e) As insecticides (including acaricides or mite control).
(10) Sucrose octanoate esters (CAS #s—42922-74-7; 58064-47-4) —in accordance with approved labeling.

Sucrose Octanoate Esters (SOEs) are surfactants –closely related to soaps– that have a mode of action similar to insecticidal soaps. However, a limited number of experiments have shown SOEs not to affect a range of predators and parasitoids that are killed by insecticidal soaps. Impacts on soil fauna have not been established. They have low toxicity to humans and are produced in a closed system.

Conclusion

The TRs provide insufficient information to evaluate SOEs relative to OFPA criteria.

The CS should seek further information about the toxicity of SOE to non-target organisms including predators, parasitoids, soil fauna, and aquatic organisms, when exposed by spray.

The LS should seek further information concerning the relative efficacy and hazard of SOEs in control of varroa mites.

Ammonium Soaps

Current listing:
§205.601(d) As animal repellents—Soaps, ammonium—for use as a large animal repellant only, no contact with soil or edible portion of crop.

The technical review for ammonium nonanoate says, “In several assessments, EPA has considered all ammonium and potassium salts of fatty acids to be similar in chemistry, toxicology, and environmental fate and effects,” so we rely on that TR for some information lacking in the original TAP review of ammonium soaps. Ammonium soaps do not meet any of

the three OFPA criteria of absence of harm to humans and the environment, essentiality, and compatibility with organic practices.

Ammonium soaps pose ecological hazards.

Ammonium soaps are typically sprayed, which allows drift.[4] Drift may damage plants and kill aquatic insects. Investigations into impacts on soil organisms have not been reported.

Ammonium soaps are not necessary

Alternative materials include area repellents, including tankage (putrified meat scraps), ammonium soaps, bone tar oil, blood meal, human hair, and bar soap –which should be applied close to or on the plants needing protection– and contact repellents that work by taste and are applied directly to plants, including putrescent egg solids and hot pepper sauce. Other methods include habitat modification, hunting, shooting, fencing/exclusion, encouraging predators.[5]

Ammonium soaps are not compatible with organic production.

There are many alternatives that are not synthetic chemicals.

Conclusion

Ammonium soaps should be allowed to sunset because they do not meet the criteria for listing on the National List.

Thank you for your consideration of these comments.

Sincerely,

Terry Shistar, Ph.D.
Board of Directors

[4] Label: http://www.pestproducts.com/ropel.htm.
[5] North Carolina State University, Vertebrate Management. http://ipm.ncsu.edu/apple/orchardguide/Vertebrate.pdf.