

Pheromones

Summary

Support Crops Committee recommendation as amended below: List pheromones for insect management on §205.601, provided that they ***are identical to or substantially similar to natural pheromones as defined in 40 CFR 152.25(b)***, in passive dispensers, without added toxicants, and with only approved inert ingredients.

There may be other pheromone products that should be listed on §205.601, but that the petition process should be used in order to determine whether they meet OFPA criteria.

More Details

Pheromones are chemical messengers used by animals to convey information. For example, honeybees emit an alarm pheromone when the hive is attacked, in order to attract others in the hive to sting the intruder. Growers have found mating attractants to be especially useful for attracting insects to traps or confusing them. There are many different chemicals that serve as mating attractants for the many different kinds of insects, since it would do a female no good to attract a male of a different species.

Pheromones are valuable to organic producers, especially fruit producers. In general, they are low in toxicity and eliminate the use of much more toxic products. However, we have a problem with making a generic recommendation covering all uses of all pheromones. The class of chemicals used as pheromones to control insects encompasses a wide range of synthetic volatile organic chemicals, some of which may not be exactly the same as the actual chemical used by the insect. In addition, pheromone products contain a wide range of so-called "inert" ingredients. It is impossible to make a decision about the safety or appropriateness for organic agriculture of "pheromones" as a class.

Furthermore, pheromones in passive dispensers are the only products permitted in organic production to use so-called "inert" ingredients that were listed by EPA as "inerts of unknown toxicity" (List 3). These ingredients are more properly known as "secret ingredients" since they are not listed on the product label and are neither chemically nor biologically inert.

The use patterns of pheromones vary from attractants used to attract insects to traps, to devices impregnated with pheromones designed release pheromones by volatilization, to puffers producing periodic mists, to sprays of microencapsulated pheromones. Pheromones used to attract insects to traps necessarily emit small quantities, since the insect must be able to follow a trail to the trap. Other methods are frequently used to fill the tree canopies or entire orchard with pheromone in order to confuse the target insect.

The law requires that the NOSB consider a wide range of factors before approving a synthetic input into organic agriculture. These factors include impacts of manufacture, use, misuse, and disposal; biological and chemical interactions with other materials, the agroecosystem, and the soil; possible toxic effects of the material or breakdown products in humans or others; and alternative materials and practices. These factors cannot be considered in weighing pheromones as a class. They require that the board address individual pheromone formulations.

Although EPA standards are not the same as the standards of OFPA, the EPA conditions for pheromone products that are exempt from regulation under FIFRA come close to describing products that could be allowed in organic production without further examination:

§ 152.25 (b) Pheromones and pheromone traps. Pheromones and identical or substantially similar compounds labeled for use only in pheromone traps (or labeled for use in a manner which the Administrator determines poses no greater risk of adverse effects on the environment than use in pheromone traps), and pheromone traps in which those compounds are the sole active ingredient(s).

- (1) For the purposes of this paragraph, a pheromone is a compound produced by an arthropod which, alone or in combination with other such compounds, modifies the behavior of other individuals of the same species.
- (2) For the purposes of this paragraph, a synthetically produced compound is identical to a pheromone only when their molecular structures are identical, or when the only differences between the molecular structures are between the stereochemical isomer ratios of the two compounds, except that a synthetic compound found to have toxicological properties significantly different from a pheromone is not identical.
- (3) When a compound possesses many characteristics of a pheromone but does not meet the criteria in paragraph (a)(2) of this section, it may, after review by the Agency, be deemed a substantially similar compound.
- (4) For the purposes of this paragraph, a pheromone trap is a device containing a pheromone or an identical or substantially similar compound used for the sole purpose of attracting, and trapping or killing, target arthropods. Pheromone traps are intended to achieve pest control by removal of target organisms from their natural environment and do not result in increased levels of pheromones or identical or substantially similar compounds over a significant fraction of the treated area.

With the explanation of “passive dispensers” given in the summary section, and with the exception of the allowance of inerts formerly listed on List 3, we believe that the committee recommendation is close to the EPA exempt pheromone products. However, the question of List 3 inerts must be addressed, and the particular pheromone chemical should also be substantially identical to the naturally occurring pheromone, as described in the EPA regulation

above. We understand that the inerts question will be addressed at a later meeting, and believe that the committee language allows the effects of this listing to change as the inerts language changes. We suggest that the annotation be changed to come in line with the criterion of “identical to substantially similar to” natural pheromones in the EPA regulation.

In conclusion, we cannot support blanket approval of pheromone products that fill orchards with clouds of synthetic volatile organic chemicals, many unknown, and all untested against the criteria that the NOSB is required to apply to synthetic chemicals used in organic production. We support Crops Committee recommendation as amended below:

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For More Information and To Submit Comments

More information about pheromones can be found in the Crops Committee section of the [NOSB meeting packet](#), and under the listing for pheromones in the [NOP Petitioned Substances Database](#).

You may submit comments at the [Regulations.gov website](#). Please identify your comments with “CC: pheromones”. You will have 20 minutes to type comments of 2000 *characters* or less, or you may upload a file. You may see a list of all comments that have been submitted on all proposals [here](#).