



BEYOND PESTICIDES

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September 10, 2012

National Organic Standards Board
Fall 2012 Meeting
Providence, RI

Re. Ferric Phosphate (Crops)

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, 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.

Beyond Pesticides supports the petition to delist ferric phosphate because ferric phosphate alone is not essential —because it is not effective— and ferric phosphate in combination with EDTA poses risks to soil organisms, uses highly toxic materials in manufacture, and is not compatible with organic agriculture.

1. Ferric phosphate is not essential

The patent cited on the product label says that neither ferric phosphate nor EDTA alone is effective in killing snails and slugs, but the combination, when used either as a compound (e.g., sodium ferric hydroxyl EDTA) or together in a bait where they react within the gut of the mollusk), is effective. Therefore, if the listing is for ferric phosphate alone, then it is not essential because it is not effective.

Furthermore, the Technical Review (TR) cites cultural practices that eliminate the need for a snail and slug bait, as well as alternative control measures.

2. Ferric phosphate with EDTA poses hazards for soil organisms and humans.

A big issue here has been whether EDTA is a necessary part of the formulation, or whether it should be considered separately as an “inert.” USDA’s Agricultural Research Service (ARS), in reviewing a supplemental TR (STR), calls EDTA a “synergist.” The patent indicates that neither ferric phosphate nor EDTA alone is effective in killing snails and slugs, but the combination, when used either as a compound (e.g., sodium ferric hydroxyl EDTA) or together in a bait where they react within the gut of the mollusk), is effective.

Ferric phosphate with EDTA has negative impacts on earthworms and other soil organisms, as documented in the TR and supplemental TR (STR). Sodium cyanide and

formaldehyde are used in making EDTA. EDTA can result in the detrimental movement of metals in soils and river sediments and has been detected in the ocean, with unknown effects.

3. Ferric phosphate with EDTA is not compatible with organic agriculture.

EDTA has negative impacts on beneficial soil organisms. It can build up in the soil. It is the most abundant anthropomorphic chemical in some European surface waters. It can enhance the movement of metals in soil and river sediments.

4. Further discussion.

In November 2007, the NOSB denied a petition for sodium hydroxyl EDTA because it “is not consistent with environmental and compatibility with organic farming (OFPA) criteria, primarily due to the behavior of EDTA in the environment and the toxic chemicals used to manufacture.” In the spring, the Crops Subcommittee deferred action on a petition to remove ferric phosphate from §205.601 because of a lack of clarity around the role of EDTA in ferric phosphate products—in particular, whether the NOSB needed to consider the EDTA as an integral part of “ferric phosphate” and its active properties against the target pest, as claimed by the petitioner. In order to clarify the issue, the subcommittee requested a supplemental TR addressing four questions:

1. Is ferric phosphate alone an effective molluscicide? Can it be combined with other ingredients besides EDTA and still work, or are EDTA and related compounds the only ones that contribute to efficacy?
2. Are there reasons for concern about EDTA beyond what information goes into a tolerance exemption, such as effects on soil organisms or contamination in groundwater?
3. Does the EDTA as used with ferric phosphate pose the same concerns as the EDTA that was reviewed as part of the Sodium Ferric Hydroxyl EDTA?
4. Are there any unbiased studies that back up the findings of Edwards et al. (2009) as cited in the TR or with contrasting results? Does the Edwards et al. (2009) study seem biased?

The subcommittee received a supplemental TR addressing the above questions, along with a review of that document by the ARS:

1. As stated by ARS in its review of the supplemental TR, ferric phosphate requires a chelating agent such as EDTA or EDDS synergist in order to make it an effective product. This “synergist” function separates EDTA from so-called “inert” ingredients, such as the wheat flour that makes up most of the actual product.
2. The ARS review confirms the potential for widespread harm from the use of ferric phosphate-EDTA/EDDS baits noted in the original and supplemental TRs.
3. The ARS review finds reasonable the conclusion of the STR that, “EDTA poses the same concerns whether used with ferric phosphate or as sodium hydroxyl EDTA.” As summarized in the supplemental TR, these are:

...EDTA clearly has the potential to be harmful to the environment and can result in the detrimental movement of metals in soils and river sediments.

Furthermore, the Crops Committee was concerned about EDTA's slow rate of biodegradation and its persistence in the environment. The EU Commission risk assessment on EDTA (EC, 2004) was cited as the reference for this conclusion.

The potential harmful effects of EDTA on human health were also a concern to the Crops Committee. In particular, the Committee concluded that "EDTA is a very strong metal chelating agent, especially for calcium. It is poorly absorbed in mammalian GI tract and concerns have been raised that excessive usage in food could deplete the body of Ca and other minerals" (NOSB Crops Committee, 2007).

4. The ARS review finds that the principal study on which the TR relied in presenting hazards that iron phosphate baits containing EDTA and EDDS chelating agents are toxic to earthworms "is not likely to be biased."

These responses support a decision to approve the petition to remove ferric phosphate from the National List for the same reasons given by the board for rejecting the sodium hydroxyl EDTA petition. We support that decision.

Thank you for your consideration of these comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Terry Shistar". The signature is fluid and cursive, with a long horizontal stroke at the end.

Terry Shistar, Ph.D.
Board of Directors