



BEYOND PESTICIDES

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June 28, 2024

Office of Pesticide Programs
Environmental Protection Agency, (28221T)
1200 Pennsylvania Ave., NW
Washington, DC 20460-0001

Re: Acephate Interim Registration Review [EPA-HQ-OPP-2008-0915-0146]

Dear Madam/Sir,

These comments 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 eliminate a reliance on pesticides. Our membership and network span the 50 states and the world.

The agency is proposing to cancel all uses of acephate other than tree injection to eliminate all risks of concern it has identified that exceed its level of concern for dietary/drinking water risk, residential and occupational risks, and risks to non-target organisms. We generally agree with the broad cancellation of almost all label registrations as appropriate to remove such a dangerous pesticide from use but question the agency's decision to maintain the current uses of acephate for tree injection. We disagree that the tree injection uses do not also pose unacceptable risks. Although the tree injection method does not pose excessive dietary or aggregate health risk and does not pose any untoward occupational or post-application human health risks of concern, there are significant ecological risks posed that the agency has neglected. The agency as stated in its Proposed Interim Registration Review Decision did not directly assess the tree injection uses for ecological risk. Instead, it presumed that due to the fate properties of acephate and its primary degradate methamidophos it is not expected to contribute significantly to runoff and due to the route of exposure is not expected to pose significant risk to non-target organisms. We disagree with this presumption and contend that the tree injection uses pose serious risks to pollinator and certain bird species that cannot be mitigated and should also be included in the acephate cancellations.

Because acephate degrades rapidly to methamidophos, and methamidophos is more toxic than acephate to most taxa, the agency based its terrestrial risk assessment on both acephate and methamidophos toxicity and exposure estimates. The agency identified both acute and chronic risks of concern to birds and mammals from all currently registered conventional uses of acephate. Aquatic risk assessments are based on the assumption that acephate completely converts to methamidophos so for aquatic organisms both exposure and toxicity estimates are derived for methamidophos. Methamidophos exposure from acephate uses are determined by the agency to pose both acute and chronic risks of concern for aquatic invertebrates. There are no chronic data for fish, so chronic risk for these taxa is uncertain. It is also noted that all pesticide uses of methamidophos products were cancelled in 2009, but acephate products as essentially a carrier for methamidophos were sustained at that time. So, it is appropriate that the acephate/methamidophos linked products should also be cancelled now as the agency is proposing.

Acephate is currently registered for tree injection applications to forestry, shelter belts, rangeland trees, tree farms/plantations (including Christmas trees), seed orchards/plantations, southern pine seed orchards, non-bearing fruit and nut trees and vines as seedlings, nursery stock, and non-bearing orchards. Tree injection involves equipment to inject formulations directly into a tree trunk where it is quickly taken up by the vascular system and distributed throughout the tree. Because acephate and its degradate methamidophos are very soluble and systemic insecticides, the distribution of chemical would be rapidly transported to all parts of the tree including pollen, sap, resin, leaves, etc. Honey bees and certain bird species such as woodpeckers, sapsuckers, tree creepers, nuthatches, chickadees, etc. can be exposed to residues within acephate-injected trees. Honey bees are exposed not just by collecting contaminated pollen, but more so from collecting sap and resins used for producing hive-important propolis. Similarly, birds are exposed to toxic acephate/methamidophos residues when feeding on contaminated tree sap, wood boring insects/larvae, and leaf chewing insects/larvae.

Based on the available data, the agency has determined that acephate uses may present risks of concern to honey bees. However, the full suite of pollinator studies has not yet been submitted for acephate or methamidophos; therefore, no adult acute oral, chronic toxicity data or larval toxicity data are available for honey bees. These data gaps represent significant uncertainties for the assessment of the impact of acephate on pollinators as sensitivity may vary according to life-stage and length of exposure (adult vs. larval and acute vs. chronic, respectively). Adverse incidents with probable and highly probable causality, including bee kills, have been associated with acephate and/or methamidophos exposure to honey bees. It is reasonable to presume that tree injection application of acephate does not attenuate the risk to honey bees compared to foliar treatment and given the higher dosage per tree from injection may actually increase exposure and therefore toxic risk. The agency proposed pollinator hazard

statement for the tree injection uses: “This product is highly toxic to bees,” is insufficient to mitigate unacceptable bee kills or provide adequate guidance on the seriousness of the risk.

For insect pests of trees, the agency concluded in its benefits assessment that the tree injection use of acephate generally provides low pest management benefits because several effective alternatives are available for most insect pests. Therefore, from a risk-benefit standpoint the high risk to bees and birds from acephate tree injection treatments is unwarranted.

The risks of acephate use and the tree injection method specifically have not yet been fully evaluated for listed species. The agency states it will complete its listed species assessment and any necessary consultation with the Services (Fish and Wildlife Service and the National Marine Fisheries Service) before completing the acephate registration review. It is recommended the agency pay careful attention to listed avian and insect species that utilize trees subject to the tree injection use for feeding, forage, and nesting.

The agency completed a weight-of-evidence endocrine disruptor analysis for acephate in 2015. The analysis concluded that no further data to assess the potential for impacts on the estrogen, androgen, or thyroid pathways are needed for humans or wildlife. With no convincing evidence from the Endocrine Disruptor Screening Program Tier 1 screening assays of potential interaction of acephate with the estrogen, androgen or thyroid pathways, the agency considers its Federal Food, Drug, and Cosmetic Act section 408(p)(6)-related commitments and obligations “to ensure the protection of public health” complete at that time. However, more recent information suggests the endocrine disrupting potential for acephate and its degradate methamidophos through non-receptor mediated pathways may be of concern.^{i,ii,iii,iv} The agency should update its assessment on the endocrine disruption risks for acephate.

As part of its proposed interim registration review, the agency is soliciting public comment on alternate mitigation (including the feasibility of potential application rate reductions, reductions in the number of yearly applications, prohibitions on higher exposure application methods, and other mitigations) and on data-supported regional and national information (regarding specific uses with high pest management benefits or unusual pest pressures) that may allow for certain registered uses of acephate to fall below the identified concern levels for dietary and aggregate risk. After considering any comments on its proposed interim decision, the agency will issue an interim registration review decision that will include an explanation of any changes to the proposed decision and its response to significant comments. Any proposed mitigation measures likely submitted will be difficult to effectively assess potential ecological risk reduction without the missing pollinator and chronic fish studies. We therefore recommend that the agency sustain its proposed cancellation decision for acephate uses and also include the tree injection uses in its cancellation decision. The serious

ecological risks to honey bees and certain bird species from injection use are unacceptable in lieu of the minimal benefits and the multiple available alternatives.

Respectfully,



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ⁱ Mota, T.F.M., de Lima Oliveira, W., Gonçalves, S., Vasconcelos, M.W., Miglioranza, K.S. and de Castilhos Ghisi, N., 2023. Are the issues involving acephate already resolved? A scientometric review. *Environmental Research*, p.117034.

ⁱⁱ Wang, Y., Dong, Y., Wu, S., Zhu, Q., Li, X., Liu, S., Huang, T., Li, H. and Ge, R.S., 2020. Acephate interferes with androgen synthesis in rat immature Leydig cells. *Chemosphere*, 245, p.125597.

ⁱⁱⁱ Jasuja, N.D., Sharma, P. and Joshi, S.C., 2013. A comprehensive effect of acephate on cauda epididymis and accessory sex organs of male rats. *Afr J Pharm Pharmacol*, 7, pp.1560-1567.

^{iv} Sampaio, C.F., Prates, K.V., Siervo, G.E.M.L., Mathias, P.C.D.F. and Fernandes, G.S.A., 2020. Impairment of testicular development in rats exposed to acephate during maternal gestation and lactation. *Environmental Science and Pollution Research*, 27, pp.5482-5488.