AMCA
THE AMERICAN MOSQUITO CONTROL ASSOCIATION

Individuals enhancing the health and quality of life through the suppression of mosquitoes, other vectors and pests of public health importance.

A Partner in the EPA's Pesticide Environmental Stewardship Program

February 12, 2020

Mary Reaves,
Acting Director, Pesticide Re-Evaluation Division, Office of Pesticide Programs.

c/o OPP Docket, Environmental Protection Agency Docket Center
1200 Pennsylvania Ave. NW.
Washington, DC 20460-0001

Re: Docket ID No. EPA-HQ-OPP-2008-0331
Comments Concerning *Pyrethroids and Pyrethrins Ecological Risk Mitigation Proposal For 23 Chemicals*, September 2019

The American Mosquito Control Association (AMCA) is pleased to provide comments on the *Pyrethroids and Pyrethrins Ecological Risk Mitigation Proposal For 23 Chemicals* (84 Fed. Reg. 61055-57. The AMCA commends the Agency for a fair and comprehensive review of the area-wide use of these chemicals in mosquito control programs. The AMCA is keenly aware of the potential for collateral impacts on non-target species in the use of pyrethroids if misused or overused. This drives our members' reliance on Integrated Mosquito Management protocols, which emphasize use of various control options to exploit the mosquito's vulnerabilities at various life stages. This approach generally reduces the need for adulticiding, lessens the environmental pesticide load applied and reduces the potential for resistance development. The AMCA was also pleased to note that the demonstrable benefits of judicious use of Ultra Low Volume (ULV) pyrethroids to control potential vector adult mosquitoes was fully recognized in the proposal. In addition, mention was made of the paucity of suitable substitute adulticides, underscoring the need for keeping pyrethroid ULV mosquitocides in the public health mosquito control inventory.

With some exceptions, the AMCA finds the proposed label language revisions to be within an acceptable framework fully protective for public health and the environment. There are, however, several terms and matters of concern that require clarification in order to reduce potential confusion by applicators:

Specific comments with regard to the document *Pyrethroids and Pyrethrins Ecological Risk Mitigation Proposal For 23 Chemicals, September 2019* are provided below citing page and paragraph numbers in question:

p. 8. Bifenthrin is the pyrethroid most commonly used in suburban/rural mosquito barrier spray treatments. The Table 2 of the proposal's only category for adult mosquito control is "Wide-Area Mosquito Adulticide." The AMCA interprets this to mean Ultra Low Volume (ULV) applications to eliminate mosquitoes in flight. However, the term does not appear to recognize the use of pyrethroids in barrier sprays used in mosquito control, particularly in the control of peridomestic vectors of Zika, dengue and other arboviruses. Bifenthrin has been recently used in barrier sprays to areas surrounding cases of Zika and dengue. Categorizing bifenthrin as an "Outdoor Urban" treatment overlooks its use as a treatment of foliage as mosquito harborage. AMCA believes it should be added to the list under wide-area mosquito control.

p. 9. Second paragraph, 2nd sentence "Pyrethrins and pyrethroids do not volatize…" is not entirely correct. There are volatile pyrethroids, such as metofluthrin, that are used as spatial repellents against mosquitoes. A more accurate statement would be that they are not particularly volatile compared to water. For instance, metofluthrin has a vapor pressure of 0.7 mmHg at 25c while water has a vapor pressure of 23.8 mmHg. The same sentence, declaring, "…are not soluble in water…" is also misleading. Pyrethroids are, indeed, nonpolar, but they are slightly soluble in water due to their halogen moieties. Furthermore, in animals, pyrethrins are rapidly metabolized into water-soluble inactive molecules.

p. 18. final paragraph,3rd sentence. The proposal states, "Bees and other pollinators may be exposed to pyrethroids while foraging for pollen and nectar on treated fields or as a result of spray drift when foraging…." Tau-fluvalinate is used principally to control *Varroa* mites in honeybee colonies. In fact, tau-fluvalinate is applied directly to beehives as an acaricide. It is highly nonpolar and is taken up readily by beeswax. If pollinator health is a concern, then the chronic effect of tau-fluvalinate on honeybees needs to be assessed critically.

p. 24. Third paragraph. These assessments, for the most part, are reasonable e.g. "In contrast to aquatic invertebrates, risk to fish was not consistently identified across the different chemicals and scenarios assessed in the pyrethroid risk assessment." Also, "No risks to aquatic plants were identified for the wide-area mosquito adulticide uses."

The acute (but not chronic) RQ for deltamethrin exceeded the LOC. The AMCA is concerned with how this might affect districts' ability to deploy this product. However, the application rates for these pyrethroids are in the ounce-per-acre range, so the actual exposure is low, as stated on page 25 in the second to last paragraph. In addition, the half-life of pyrethrins is in the 12 to 24hour range. Data show that pyrethrins are completely degraded in less than 5 days. The half-life of permethrin in water is 19-27 h. The short half-life for pyrethroid AIs, coupled with their low application rate, indicates that actual exposure is less than calculated from lab exposure studies. The calculations for acute RQs are more likely to reflect true environmental conditions (i.e., intact product that contacts water within hours of deployment). The calculations for acute RQs yield values less than the LOC for both pyrethrins and permethrin. Additionally, chronic persistence in water bodies exposed to sunlight (UV and temperature) likely overestimates exposure risk and, therefore, the RQ. The reduced risks attendant to these realities should be explicitly highlighted in the document.

p. 61. "This proposed language applies to products used by mosquito control districts for wide-area applications." The AMCA finds portions of the proposed label change language will be vague and difficult for applicators to interpret. As noted below, these specific (proposed) changes will provide *less* clarity when conducting ULV treatments, potentially compromising efforts by Districts responding to disease outbreaks.

For example, “For Aerial Applications: Do not apply by fixed winged aircraft at a nozzle height less than 100 feet (30.5 m) above ground or canopy, or by helicopter at a height less than 75 feet (22.9 m) above the ground or canopy …” This proposed label change is incompatible with district protocols in the southeastern U.S., many of which routinely spray at or below 100 feet above ground by rotary-winged aircraft due to canopy features, vegetation density and target species resting/flying behaviors. The rationale for this proposed change seems to be the reduced risk of spray drift and deposition. However, this change ignores the role of canopy in capturing product drift, especially mangrove and similar canopy that is ubiquitous in the southeast U.S. in habitats of *Aedes taeniorhynchus*. This proposed change would hinder the ability of Mosquito Control Districts (MCDs) to respond to certain disease outbreaks, such as eastern equine encephalitis (EEE), which is transmitted to humans and equines by *Culex salinarius*, *Aedes canadensis*, and *Coquillettidia perturbans*. The vernal pools and cattail marshes where certain bridge vectors breed and rest would be inaccessible to spray operations if this label change were to be adopted. This label change would also hinder the effective control of *Culex salinarius*, *Culex quinquefasciatus,* and *Culex nigripalpus* - important vectors of West Nile virus and St. Louis Encephalitis. Furthermore, application equipment can be calibrated to a smaller droplet spectrum within label specifications at a lower release height reducing deposition, yet still impinging on mosquito targets. This becomes critical in drone ULV applications, which are routinely made at release heights less than 75 feet AGL.

This language also conflicts with rotary-winged applications of Bayer’s DeltaGard /Imperium product, whose current label allows application at a minimum of 50 feet above ground or canopy. To retain the current DeltaGard /Imperium label AGL release height minimum and obviate a label change, the AMCA proposes the following release height statement:

For Aerial Applications: Do not apply by fixed wing aircraft at a nozzle height less than 100 feet above ground or canopy, or by helicopter at a height less than 75 feet above the ground or canopy, (and if applicable) unless specifically approved by the state or tribe based on public health requirements.

Another example: “Ground application: Create an optimum swath when [product name] is applied from a truck that is being driven perpendicular to the wind direction, when possible. Direct the spray head of equipment to ensure even distribution of the spray cloud throughout the area.” The AMCA recommends the following language changes to make the label more user-friendly:

- “To ensure effective dispersal of the product, chemicals should be applied when ground speeds are equal to or greater than 1 mph.”

- “Effective control is optimized when applications are conducted when temperatures at ground level are at or above 50°F.”

- Ground application: “An optimum swath width can be achieved when [product name] is applied from a truck that is being driven perpendicular to the wind direction.”

- FOR BEST RESULTS, treat when mosquitoes or insects are most active and weather conditions are conducive to keeping the spray cloud in the air column close to the ground e.g. cool temperatures.

- An inversion of air temperatures and a light breeze is preferable. Application during the cooler hours of the night or early morning is recommended.

"For Aerial Applications: Do not apply by fixed wing aircraft at a nozzle height less than 100 feet (30.5 m) above ground or canopy, or by helicopter at a height less than 75 feet (22.9m) above the ground or canopy, (and if applicable) unless specifically approved by the state or tribe based on public health needs."

The AMCA has additional concerns with the statement about directing the spray head. ULV machines do not produce an actual spray, but instead produce an aerosol whose drift is subject to wind conditions. Thus, the mandate to "direct" the spray nozzle to ensure even distribution is unnecessary.

The AMCA is a not-for-profit professional association of 1700 public health officials, academicians, county trustee/commissioners and mosquito control professionals dedicated to providing leadership, information and education leading to the enhancement of health and quality of life through the suppression of mosquito and other vector-transmitted diseases and the reduction of annoyance levels caused by mosquitoes and other vectors and pests of public health importance. This is accomplished through the use of integrated mosquito management techniques, which includes the use of duly registered public health pesticides, when warranted.

The AMCA applauds the subject proposal, which, when clarified, will ensure that labels are both internally consistent and not contradictory with either Agency or AMCA goals. In this light, the AMCA strongly supports both the EPA's charter to protect non-target organisms from adverse environmental impacts in addition to a robust pesticide regulatory process designed to ensure this is met.

Sincerely,

Joseph M Conlon
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American Mosquito Control Association