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MĀNOA

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

Subject: **Docket ID Number EPA-HQ-OPP-2010-0480**

Comments in Response to *Lambda-cyhalothrin Registration Review: Draft Ecological Risk Assessment*

The following comments are being submitted in response to the November 29, 2016 *Federal Register* notice announcing the availability of and seeking public comment on EPA's draft ecological risk assessment for the registration review of lambda-cyhalothrin and the May 8, 2017 *Federal Register* notice extending the comment deadline. These comments are being submitted on behalf of the Western Integrated Pest Management Center and provide input on lambda-cyhalothrin use in the production of leafy vegetables and seed crops in Hawai'i.

**Leafy Vegetables.** Lambda-cyhalothrin is used on Chinese cabbage (napa cabbage) (*Brassica rapa* subsp. *pekinensis*) and bok choy (*B. rapa* subsp. *chinensis*) to control bagrada bug. To control these pests, the typical application rate is 0.03 lb /acre. Applications begin after a threshold of 5-10 bugs per plant is reached. Typically, there are 3-4 applications per crop cycle, depending on the pest pressure.

Bagrada bug is a new pest in Hawai'i. It was first detected on Maui in 2014. Populations have since been detected on Hawai'i Island in 2015 and on O'ahu in 2016 (<http://hdoa.hawaii.gov/pi/files/2013/01/Bagrada-hilaris-NPA4-5-16.pdf>). Lambda-cyhalothrin has been the only pesticide that has been reported to provide effective control of bragada bug.

**Seed crops.** Growers may apply products that contain lambda-cyhalothrin as the sole active ingredient (a.i.) or a combination of chlorpyrifos and lambda-cyhalothrin to corn and soybeans to control aphids, armyworms, corn earworms, Japanese beetles, cutworms, lesser cornstalk borers, planthoppers and thrips. These pyrethroid insecticides are used during the vegetative stages of the crop to reduce damage to plants directly caused by caterpillars and other insects as well as diseases transmitted by aphids and other piercing/sucking insects.

Growers utilize integrated pest management (IPM). The application rate and frequency is dependent on the level of pest pressure or plant injury level based on scouting reports. An example application rate for lambda-cyhalothrin (sole a.i.) of 0.024 lb/acre, not exceeding three applications per crop cycle, is used to control aphids, armyworms, corn earworms and Japanese beetles. (A crop cycle is four months. Typically, one crop is planted in a field per year. The field is planted in cover crops or fallow for the period between

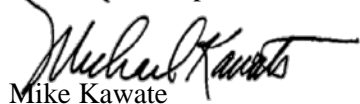
crops.) Fewer applications are made if pest pressures are below threshold levels. Another example for single a.i. lambda-cyhalothrin products used to control corn earworm, cutworms, armyworms and lesser cornstalk borer is an application rate of 0.02 lb/acre, applied twice per crop cycle with a retreatment interval of at least seven days. Some growers may utilize these products only after all other control options have been exhausted.

Hawai'i's conditions allow at least two crop seasons per calendar year. They also create the potential for multiple generations of certain pests in a single year. Rotation of pesticides with different modes of action is a foundation for resistance management. In Hawai'i, the effective insecticide chemistries for these crops are limited to the pyrethroids, organophosphates and carbamates. The availability of these and other pyrethroids facilitates the development of effective insecticide resistance management components of grower's IPM programs. The inability of growers to use lambda-cyhalothrin and other pyrethroids may result in high negative impacts on crop yields and large economic losses and may jeopardize long-term crop sustainability of some operations.

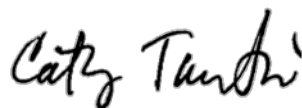
Lambda-cyhalothrin is useful because it controls several important pests of corn. It has been very effective at controlling corn earworm and aphids. Aphid control reduces the associated risk of crop damage and caused by viral diseases transmitted by aphids. The production of seed corn varieties for worldwide markets are being compromised by viruses like the Maize chlorotic mottle virus, Maize dwarf mosaic virus, Corn stunt sprioplasma, Maize mosaic virus and other viral diseases. Maize chlorotic mottle virus, in combination with a *Potyvirus* group virus such as Maize dwarf mosaic, has the potential to generate Corn Lethal Necrosis (CLN). CLN significantly reduces yield and results in premature death of the corn plant. These viruses have the potential to severely impact the economic vitality of the seed industry as well as the sweet corn farmer in Hawai'i.

Comments were received from Extension personnel of the College of Tropical Agriculture and Human Resources of the University of Hawai'i at Mānoa and representatives of the seed crop producers.

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