



Integrated Plant Protection Center
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Teung Chin
USDA Office of Pest Management Policy
1400 Independence Ave. S.W.
Washington DC, 20250
September 30, 2016

Re: Carbaryl Information Request
cc: Elizabeth Hill, David Epstein

Dr. Chin,

The following comments are offered in response to your OPMP information request on carbaryl usage, which I received through Amanda Crump at the Western IPM Center. These comments are being submitted to provide input from relevant Pacific Northwest commodities.

Three important Pacific Northwest commodity groups currently using and relying on carbaryl are the cranberry, apple, and cherry industries.

For the cranberry industry, carbaryl is considered an important product for controlling cranberry tipworm. It is generally applied pre-bloom, for suppression of the first generation of tipworms. A typical treatment involves 2-3 applications, spaced 7 days apart. Other pesticide options available include organophosphates, but they are considered less efficacious than carbaryl for this pest. For resistance management, carbaryl is often rotated with diazinon and/or acephate, which are less efficacious, but are the best options for resistance management rotation at present. Potential yield impacts in cranberry without the use of carbaryl are estimated to be about 20%.

In apples, carbaryl is widely used and considered important as a blossom-thinning agent. It is generally used 1-2 times per season, with 7-10 days between applications. It is often tank-mixed with other thinners, such as benzyladenine (BA) and/or naphthalene acetic acid (NAA). New programs using just BA/NAA have been tested and found to be efficacious, but these programs are not yet widely understood or used by growers and need to gain favor. They are also more costly, estimated at 50-100% the cost of a carbaryl/NAA program. As another potential alternative, a product with EU registration, metamitron (Brevis), has shown good efficacy, but is not yet registered in the US.

In cherries, carbaryl is considered an important product for controlling spotted-wing drosophila (SWD). Although other products are available that are more



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efficacious, carbaryl's short PHI makes it very useful in controlling pests like SWD that can cause damage up to and even beyond harvest. The nature of this pest and its damage requires constant coverage and the need to sequence pesticides according to their PHIs. Malathion is an alternative short PHI material that is also used to control SWD in cherries, but it is applied by air, which is not an option for some growers due to location (often too close to residential housing). An alternative like carbaryl is considered important for this industry for those areas where a malathion air application is not possible. Researchers at Washington State University are currently screening carbaryl for SWD resistance.

The toxicity of carbaryl to humans, pollinators, and beneficial insects and natural pest enemies, such as predatory mites and parasitoids, reduces its compatibility with IPM programs. Affordable and efficacious reduced-risk alternatives to the uses outlined above for Pacific Northwest industries would continue to meet the pest management needs of growers while reducing the indirect impacts caused by the use of this particular product.

Respectfully,

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Katie Murray is a research assistant in the Integrated Plant Protection Center (IPPC) and is the Western IPM Center's EPA Comment Coordinator for the Pacific Northwest. Katie has expertise in agricultural stakeholder engagement and assessment methods related to understanding pesticide usage, as well as the use of, and pesticide compatibility with, IPM.

The IPPC is the hub for Oregon's statewide IPM program, and the main IPM resource in Oregon for farmers, researchers, and extension agents. The expertise represented in the IPPC is highly interdisciplinary and includes toxicology, entomology, horticulture, adult education, public health, and anthropology, all with an IPM focus. Within the IPPC, we have a collective expertise in understanding the use of pesticides within IPM programs with a goal of protecting the economic, environmental and human health interests of our stakeholders.

To compile comments, input is actively solicited from stakeholders throughout the Pacific Northwest in an effort to convey use patterns, benefits, potential impacts, and the availability and efficacy of alternatives. These comments are an independent assessment and do not imply endorsement by Oregon State University or the Western IPM Center.