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Environmental Protection Agency  
1200 Pennsylvania Ave. NW  
Washington DC 20460-0001

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**Re: Responses to EPA request for information about use of boscalid/pyraclostrobin in grape production; EPA-HQ-OPP-2014-0199**

*The following comments are submitted in response to EPA's request for information from grape producers as part of the proposed interim decision for boscalid and pyraclostrobin. These comments are being submitted on behalf of the Western IPM Center, and provide input from the perspective of Northwest wine and table grape industries including consultation with university-based experts.*

Note: Because of widespread resistance issues already associated with group 11 fungicides, many grape growers have reduced or stopped using Pristine, the boscalid + pyraclostrobin formulated product, but there are hopes that by not using it now, it can be preserved as a future tool.

**Worker contact with treated foliage:**

Boscalid (or boscalid + pyraclostrobin) would be applied in vineyards any time from bud break through ripening, potentially. This timing overlaps with the rapid growth stage of the canopy. During this window of time, a number of manual labor practices occur in wine grape production. Although turning and girdling is not a practice in Oregon wine (or table) grape production, there are a lot of other hands-on manual labor activities taking place in the canopies during spring and early summer which can bring workers in contact with treated foliage. For wine grapes, this includes shoot thinning and sucker removal, raising wires in the canopy, shoot positioning, leaf removal (for Botrytis control, just after bloom), and then fruit removal in mid-late summer. Shoot positioning helps control the canopy so that sprayers can operate down the rows. Hedging and topping do the same, but are generally done mechanically. It is also possible that the common vineyard practice of taking brix readings after veraison could be impacted by extended REIs.

Table grape production in Oregon has similar practices including shoot positioning taking place during this timeframe.

**Potentially longer REI:**



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An REI of 5 to 22 days would make it challenging for most wine grape growers to use these products early in the season, based on the extent of hands-on labor required during this timeframe. A 5-day REI might be possible to adapt to later in the season, but a 22-day REI would be very difficult to work with at any timing. For table grapes in Oregon, it was thought that shoot positioning could be delayed to work around an extended REI, and growers could also rotate with other alternate chemistries, which are available.

### **Sequencing:**

While sequencing fungicides based on REI length might be possible, the number of hands-on activities in wine grape production in particular would make it difficult to accommodate any products with a long REI. It was also noted that the need for this level of sequencing adds additional complication to fungicide programs and would take away the needed flexibility of resistance management.

### **Rates and usage across different diseases:**

In the northwest, the two main diseases in wine grapes are powdery mildew and Botrytis bunch rot. Other areas such as the eastern USA have additional diseases such as black rot, but PNW disease management in wine grapes targets mainly the two first mentioned. Many of the table grape cultivars grown in Oregon are not *Vitis vinifera* (a key difference with California); thus the cultivars (hybrids of *labrusca* and *vinifera*) are more resistant to Botrytis, necessitating fewer to no applications, and lower rates when applied, of these products. Sulfur and oils are the main treatments for powdery mildew in table grapes in Oregon.

Current recommendations for resistance management are that growers should only be using any one group of fungicides no more than twice per year. Thus, a group 7 fungicide such as boscalid should only be used twice at the most, and the same applies for the group 11 it might be pre-mixed with. However, current labels allow 5 uses per year, and only recommend alternating groups after two applications, so following labels, some growers easily end up using same group products more than twice per year, and commonly up to four times given the season length. For example, a wine grape grower might use Pristine for powdery mildew twice to start, skip once, then back to twice again, which then often gets too close to the end of the season to use it a fifth time. This practice goes against resistance management recommendations, but aligns with current labels.



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Rates for the pre-mixed formulations can also be problematic from a resistance management perspective, in that if powdery mildew is the target, the rate is too low for controlling Botrytis, and if Botrytis is the target, the rate is too high for powdery mildew. Especially when Botrytis is the target, this can negatively impact resistance management. Current recommendations are that Pristine (boscalid + pyraclostrobin) not be used for Botrytis control if already used for powdery mildew (see more here: <https://pnwhandbooks.org/plantdisease/host-disease/grape-vitis-spp-botrytis-bunch-rot>)

Please let me know if you have any further questions.

Respectfully,

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*Katie Murray is Statewide IPM Coordinator for Oregon State University, and the Western IPM Center's Northwest IPM Network Coordinator. Katie has expertise in agricultural stakeholder engagement and consultation methods that include understanding current pesticide usage trends, and pesticide compatibility with IPM.*

*The Oregon IPM Center (formerly Integrated Plant Protection Center – 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 OIPMC is highly interdisciplinary and includes toxicology, entomology, horticulture, adult education, public health, and anthropology, all with an IPM focus. Within the OIPMC, 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 Northwest in an effort to convey use patterns, benefits, potential impacts, and the availability and efficacy of alternatives. These comments largely reflect expert testimony from stakeholders, including research and extension experts as well as farmers and commodity groups. The comments do not imply endorsement by Oregon State University or the Western IPM Center.*