United States Department of Agriculture

# Illuminating the way: A new tool for grape powdery mildew management?

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Oregon grape production is valued at over $230 million, however 95% of grape yield can be contributed to fungicide use. With 90% of the applied fungicides targeting one fungal pathogen, grape powdery mildew (Erysiphe necator), high fungicide use has led to a concerning emergence of fungicide resistance. New integrative management tools are needed to reduce environmental, and financial costs with chemical management practices.

Tractor mounted UV-C array in operation at night

In collaboration with David Gadoury at Cornell University and Michelle Moyer at Washington State University, we began testing Ultraviolet spectrum C radiation (UV-C) in conjunction with chemical management programs to assess the efficacy of UV-C to control powdery mildew. The UV-C radiation was exposed to the vines once a week at night when the fungal DNA repair machinery is less effective. Our results suggest that there is a potential for UV-C radiation to be used in a management program for powdery mildew.

Future field trials at the BPP field site will examine increasing the frequency or dose of UV-C application. We will also collaborate with Willamette Valley Vineyards and Saga Robotics to explore the use of an autonomous drive base to apply the treatments on a commercial vineyard scale. Using UV-C as part of an integrative pest management tool for powdery mildew will hopefully reduce costs and environmental impacts of disease management by reducing the amount of chemical inputs for disease control.

Interested in seeing more? See our local news story here: https://tinyurl.com/y3b83avm

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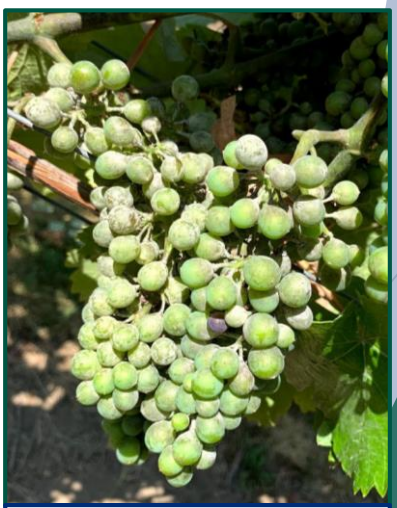

Grape powdery mildew on immature clusters

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