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Poster Title: **Optimizing intelligent sprayer for efficient agrochemical application in vertical shoot position trained grapevines**

Poster Category:

	Vineyard Establishment
✓	Vineyard Management
	Irrigation
	Economics
	Pests, Diseases, Disorders, Nutrition
	Weather

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Abstract (no more than 200 words):

Intelligent spray systems are designed to address issues of chemical drift and over applications typical to conventional airblast sprayers. While these systems use modern technologies to characterize the canopy, grower experience is required to input the base dose rate (L m-3 of canopy volume). Therefore, this study was conducted to evaluate dose rate estimation methods through replicated spray applications in modified vertical shoot position trained vineyard (cv. Chardonnay). Trials were conducted at full canopy growth stage using an intelligent retrofit kit installed on an axial-fan airblast sprayer. Tree Row Volume (TRV), Unit Canopy Row (UCR), and Leaf Wall Area (LWA) were used to calculate the base dose rates as 0.12, 0.3, and 0.14 L m−3, respectively. The control was standard application of 702 L ha−1. Applying a florescent tracer, spray deposition and coverage were evaluated. Results showed higher spray deposition for TRV (866 ± 64 ng cm-2 [mean ± standard error]), UCR (1001 ± 63 ng cm-2) and LWA (899 ± 49 ng cm-2) than control (725 ± 68 ng cm-2), whereas no significant difference was observed in spray coverage for the treatments. Overall, TRV can be employed to decide the base spray rate considering relative simplicity of its estimation.