



Evaluation of a decision support strategy for the control of powdery mildew, *Erysiphe necator* (Schw.) Burr., in grapevine in the central region of Chile



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Title (native language)	
Category	<ul style="list-style-type: none"> Recording or mapping technology
Short summary for practitioners (Practice abstract) in English)	<p>BACKGROUND: The primary strategy to control powdery mildew in Chilean vineyards involves periodic fungicide spraying, which may lead to many environmental and human health risks. This study aimed to implement and evaluate the effectiveness and economic feasibility of a novel decision support strategy (DSS) to limit the number of treatments against this pathogen. An experiment was conducted between the 2010 and 2013 seasons in two irrigated vine fields, one containing a cultivar of Cabernet Sauvignon (CS) and the other a cultivar of Chardonnay (CH). RESULTS: The results showed that the DSS effectively controlled powdery mildew in CS and CH vine fields, as evidenced by a disease severity lower than 3%, which was lower than that observed in untreated vines (approximately 10 and 40% for CS and CH respectively). The DS strategy required the application of only 2–3 fungicide treatments per season in key vine phenological stages, and the cost fluctuated between \$US 322 and 415 ha⁻¹, which was 40–60% cheaper than the traditional strategy employed by vine growers. CONCLUSION: The decision support strategy evaluated in this trial allows a good control of powdery mildew for various types of epidemic with an early and late initiation. © 2017 Society of Chemical Industry. © 2017 Society of Chemical Industry</p>
Short summary for practitioners	
Website	https://www.scopus.com/inward/record.uri?eid=2-s2.0-85018293409&doi=10.1002%2fps.4541&partnerID=40&md5=c9e6cd523ca7ebaefc06d2d8424ef930
Audiovisual material	
Links to other websites	
Additional comments	
Keywords	Farming practice
Additional keywords	grapevine disease; Integrated control; Sustainable management; Vineyard
Geographical location (NUTS)	EU
Other geographical location	Maule Valley, Chile
Cropping systems	Vineyards
Field operations	Pesticide application Crop protection

SFT users	Farmer
Education level of users	Secondary education Apprenticeship or technical school education
Farm size (ha)	10-50

Scientific article

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Full citation	Valdés-Gómez, H.; Araya-Alman, M.; Pañitrur-De la Fuente, C.; Verdugo-Vásquez, N.; Lolas, M.; Acevedo-Opazo, C.; Gary, C.; Calonnec, A. (2017). Pest Management Science, Volume 73, Issue 9, pp 1813-1821, DOI:10.1002/ps.4541

Effects of this SFT

Productivity (crop yield per ha)	Some increase
Quality of product	No effect
Revenue profit farm income	Some increase
Soil biodiversity	No effect
Biodiversity (other than soil)	No effect
Input costs	Some decrease
Variable costs	No effect
Post-harvest crop wastage	No effect
Energy use	No effect
CH4 (methane) emission	No effect
CO2 (carbon dioxide) emission	No effect
N2O (nitrous oxide) emission	No effect
NH3 (ammonia) emission	No effect
NO3 (nitrate) leaching	No effect
Fertilizer use	No effect
Pesticide use	Some decrease
Irrigation water use	No effect
Labor time	No effect
Stress or fatigue for farmer	No effect
Amount of heavy physical labour	No effect
Number and/or severity of personal injury accidents	No effect
Number and/or severity of accidents resulting in spills property damage incorrect application of fertiliser/pesticides etc.	No effect
Pesticide residue on product	Some decrease
Weed pressure	No effect
Pest pressure (insects etc.)	No effect
Disease pressure (bacterial fungal viral etc.)	No effect

Information related to how easy it is to start using the SFT

This SFT replaces a tool or technology that is currently used. The SFT is better than the current tool	no opinion
The SFT can be used without making major changes to the existing system	no opinion
The SFT does not require significant learning before the farmer can use it	disagree
The SFT can be used in other useful ways than intended by the inventor	no opinion
The SFT has effects that can be directly observed by the farmer	agree
Using the SFT requires a large time investment by farmer	no opinion
The SFT produces information that can be interpreted directly	agree

[View this technology on the Smart-AKIS platform.](#)

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