

Alternative Fungicides for Sclerotinia Disease Control on Horticultural Crops



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Sclerotinia Diseases

Sclerotinia diseases, caused by *Sclerotinia sclerotiorum* and *S. minor*, are a major problem in many horticultural crops, including beans, brassicas, capsicum, lettuce, carrots, swedes, turnips, potatoes and pyrethrum. Apart from procymidone, the lack of other effective registered fungicides for *Sclerotinia* control poses a huge problem for the horticultural industry in Australia. In 2004 this problem was highlighted by the sudden withdrawal of procymidone from use on some vegetables, as well as severe restrictions on its use, storage and handling on others, due to residue concerns. Therefore, a suitable fungicide replacement that is as effective as procymidone is urgently needed. This poster presents the results of trial studies conducted to compare the efficacies of alternative fungicides to procymidone, from different chemical groups, for *Sclerotinia* control on lettuce, bean and pyrethrum crops in 2003-2005.



Table 1. Fungicides, active ingredients and formulations used in field trials

Trade name	Active ingredient (a.i.)	Formulation	Chemical Group
Amistar® WG	azoxystrobin	500 g/kg	strobilurin
Amistar® SC	azoxystrobin	250 g/kg	strobilurin
Bavistin® FL	carbendazim	500 g/L	benzimidazole
Filan® WG	boscalid	500 g/kg	anilide
Gypsum	calcium sulphate	930 g/kg	na
Teldor® SC	fenhexamid	500 g/L	hydroxanilide
Scala® SC	pyrimethanil	500 g/L	anilinopyrimidine
Rovral®SC	iprodione	500 g/L	dicarboximide
Sumisclex®SC	procymidone	500 g/L	dicarboximide

Disease Control

- Of all the fungicides evaluated, Filan® was shown to be the most effective alternative to Sumisclex® in reducing lettuce drop on lettuces and plant wilt on pyrethrum due to *S. minor*, and white mould on green beans due to *S. sclerotiorum*.
- These trials indicated that Filan® is the most suitable replacement for Sumisclex® for *Sclerotinia* disease management. Trials from these studies have contributed to temporary permits for Filan® use for in Australian horticultural industries in 2005.
- Gypsum applied in mixtures with Amistar®, Filan® or Sumisclex® on pyrethrum showed a trend of improved disease control (Trial 2). Similar trends in improved disease control were also observed in mixtures of gypsum and Filan® or Sumisclex® in green beans (Trial 3) and cos lettuces (Trial 4).
- Filan® rates ranging from 0.25 kg/ha to 1.2 kg/ha examined in field studies showed that rates of 0.8 kg/ha and above have excellent disease control (Trial 4). Therefore, the use of Filan® 0.8 kg/ha and 1.0 kg/ha are recommended. The use of effective rates is vital to prevent fungicide resistance.



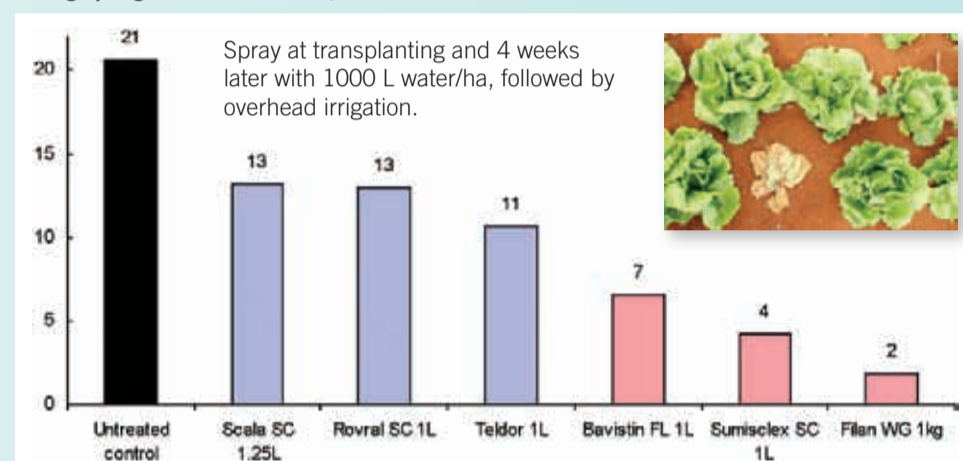
Filan® is a multi-purpose fungicide that has a unique mode of action in disrupting fungal growth by inhibiting fungal respiration, and has a wide spectrum of activity against important diseases caused by *Alternaria*, *Botrytis*, *Monilinia*, *Sclerotinia* and *Sclerotium*. In North America, this fungicide is now registered for use on twenty-five different crops for the control of a range of diseases.



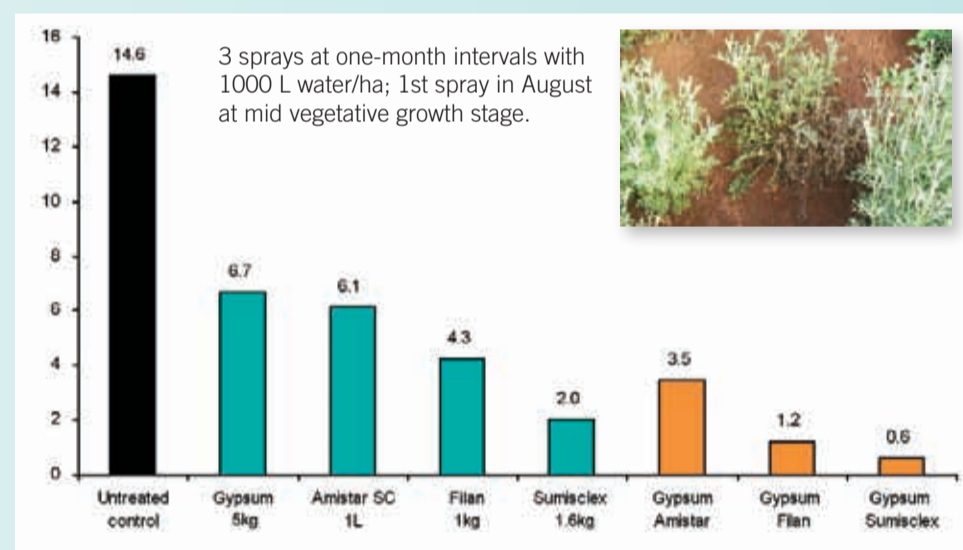
Acknowledgements

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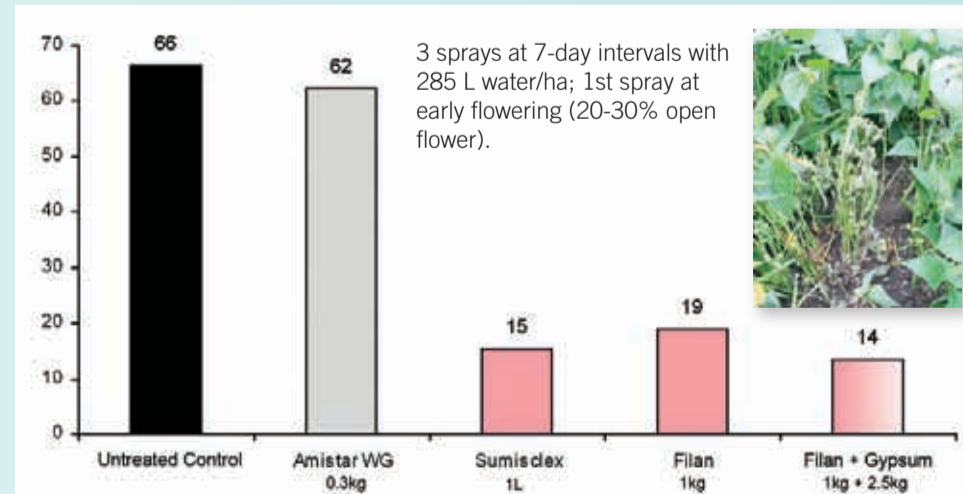
TRIAL 1. Percentage of butterhead lettuce plants infected with *S. minor* in a trial conducted during spring at Bacchus March, Victoria.



TRIAL 2. Percentage of pyrethrum plants with *Sclerotinia* wilt due to *S. minor* in a trial conducted at Barrington, Tasmania.



TRIAL 3. Percentage of green bean plants infected with *S. sclerotiorum* in a trial conducted at Merseylea, Tasmania.



Trial 4. Effect of fungicide treatments on lettuce drop due to *S. minor* in cos lettuces at Cambridge, Tasmania.

