

# EverGol<sup>®</sup> Energy

EverGol Energy Seed treatment for suppression of seed borne fusarium head blight and crown rot in wheat.



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## INTRODUCTION

Fusarium head blight, caused by *Fusarium* spp. fungal pathogens (predominantly *F. pseudograminearum* and *F. graminearum*), is a disease that occurs mainly in Australia's northern grains regions. It affects wheat, durum wheat and barley crops and, although not reported frequently, can cause significant yield loss, quality reductions and downgrading of grain. Crown rot, caused predominantly by *F. pseudograminearum* but also *F. culmorum*, is a significant disease of winter cereals across Australia, particularly in the northern region. Its major impact is yield loss as a result of moisture stress post-flowering perpetuated by disease damaged plant vascular systems.

Seed infected with *Fusarium* spp. can cause seedling blight, dead seeds and hence reduced emergence (15-55%) at planting but usually does not directly give rise to head blight symptoms in one growing season. (Simpfendorfer et al., 2017). The exception being very wet years when splash dispersal of macroconidia from lower stems can result in infected heads during flowering. In more normal years, the fungus will move from the infected seed to the root, crown and stem base tissues of the plant that develops from the infected seed, thus creating potential sources of infected or contaminated residue that can then lead to fusarium head blight and/or crown rot infection in subsequent crops.

Plants grown from infected seed which survive past the seedling blight stage have been shown to have high levels of crown rot. Consequently, "Seed-borne crown rot affects yield in the current crop and introduces infected stubble back into the paddock...and can also introduce seed-borne crown rot infection into clean paddocks, undoing rotational benefits associated with growing non-host crops." (Simpfendorfer et al., 2017).

The results below support the EverGol Energy seed treatment label claim for suppression of seed borne *F. pseudograminearum* in wheat. Naturally infected seed sourced from a national variety trial (NVT) in 2016 was used to conduct this study.

## RESULTS

Fusarium fungal growth was recorded on 29% of untreated seeds. There was a significant improvement in germination from all treatments when compared to the untreated control, but treatments were not significantly different to each other.

EverGol Energy, applied at all rates, significantly reduced the number of seeds colonised with fusarium mycelium.

Note that EverGol Energy will NOT protect established plants from new infections.



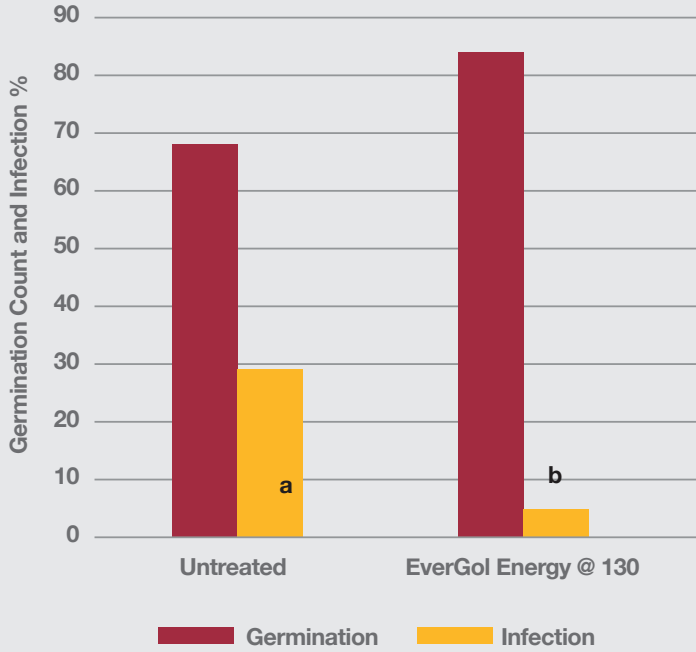
### Summary of germination and fusarium infection on fungicide treated seeds.

Trial ID	Crop	Site	Year
17ND17	Wheat	Lab	2017

Target	Fusarium head blight ( <i>Fusarium pseudograminearum</i> )					
Assessment date		03/04/2017		03/04/2017		03/04/2017
Days after application		10		10		10
Assessment		Germination		Infection		Infection
Rating scale		Count		%		% Control
	Untreated	68	a	29	a	0
EverGol Energy	130 mL/100 kg seed	84	a	5	b	82

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Suppression of Seed Borne Fusarium Head Blight  
(Rate in mL/100 kg seed)



Means followed by same letter do not significantly differ (P = 0.05, Duncan's New MRT).

## Overall conclusions and recommendations

Trial data shows that EverGol Energy applied at 130 mL/100 kg seed will provide suppression of seed borne *F. pseudograminearum* in wheat.

See below for the label claim, or the link to the EverGol Energy label.

## Reference

Where did the low levels of Fusarium Head Blight come from in 2016, and what does it mean? 2017 Steven Simpfendorfer (1), Daniele Giblot-Ducray (2), Diana Hartley (3), Alan Mckay (2) 1 NSW DPI Tamworth, 2 SARDI Adelaide, 3 CSIRO National Collections and Marine Infrastructure

## EverGol Energy label claim for fusarium head blight suppression in wheat and barley.

<b>Crop</b>	Wheat, barley
<b>Disease</b>	Fusarium head blight and crown rot, seed borne ( <i>Fusarium</i> spp.) – suppression
<b>Application method</b>	Seed treatment only
<b>Rate</b>	130 mL/100 kg seed
<b>Critical Comments</b>	Seed treatment only: EverGol Energy is applied to seed prior to sowing. Ensure even coverage of seed.  Refer to GENERAL INSTRUCTIONS – 'Application' for detailed application instructions.  Treating seed infected with <i>Fusarium</i> spp. will reduce fungal colonisation on germinating seeds and consequently help reduce seedling blight and levels of crown rot inoculum in paddocks. EverGol Energy will NOT protect established plants from new infections.



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