

Demonstration of Legumes for Reliable Profitability in the Western Region - Field Peas, Dalwallinu

Judith Storer, Research and Development Coordinator, Liebe Group

Take Home Messages

- Minimal levels of fungus affected the crop.
- There was no difference in yield response between the two fungicide regimes implemented.
- In the dryer than average season the use of fungicide was not economical.

Aim

To address the issue of adequate disease control that impacted the profitability of field pea crops grown in medium rainfall zones.

Background

The Liebe Group have identified a need to continue to demonstrate alternate legume crops throughout the region and build on the existing momentum developed through this project. The aim of establishing new demonstration sites in 2020 is to further explore the constraints to adoption, as well as demonstrate the agronomy packages available to growers to determine if particular legumes are profitable in their farming system within a different season. Disease control was a significant constraint on field pea crop performance in the 2018/2019 trials. This demonstration aims to explore the agronomic options for disease control through the use of a variety of fungicides to address this constraint.

Trial Details

Trial location	Harry Hyde's Property, Dalwallinu
Plot size & replication	36m x 500m x 3 replications
Soil type	Heavy red loam
Paddock rotation	2017 Wheat, 2018 Wheat, 2019 Barley
Sowing date	29/05/2020
Sowing rate	120 kg/ha Twilight Field Peas
Fertiliser	26/05/2020: 60 kg/ha Map Zn (11.2%N, 22.4%P, 1.9%S, 0.5%Zn)
Herbicides, Insecticides & Fungicides	See treatment list 26/05/2020: 960 g/ha trifluralin, 990 g/ha Diuron 05/07/2020: 240 g/ha Clethodim, 100 g/ha Diflufenican, 3 g/ha Gamma-Cyhalothrin

Treatments

	Treatment
1	Nil Control
2	Azoxystrobin 150 ml/ha & Propiconazole 500 ml/ha (2 x timings: 10/07/2020 and 02/09/2020)
3	Tebuconazole 150 g/ha & Azoxystrobin 90 g/ha on 10/07/2020. Bixafen 45 g/ha & Prothioconazole 90 g/ha on 02/09/2020.

Chemical	Active
Azoxystrobin	250 g/L Azoxystrobin
Propiconazole	250 g/L Propiconazole
Veritas	200 g/L Tebuconazole & 120 g/L Azoxystrobin
Aviator Xpro	75 g/L Bixafen & 150 g/L Prothioconazole

Soil Composition

Depth (cm)	pH (CaCl ₂)	Col P (mg/kg)	Col K (mg/kg)	S (mg/kg)	N (NO ₃) (mg/kg)	N (NH ₄) (mg/kg)	EC (ds/m)	OC (%)
0-10	6.8	51	793	4	19	7	0.12	0.9
10-20	7.5	13	547	11	13	<1	0.14	0.7
20-30	7.7	5	380	18	5	<1	0.17	0.5
30-40	7.9	6	384	21	6	<1	0.23	0.4
40-50	8.2	4	435	14	4	<1	0.28	0.2

Results

The year had below average rainfall that came through in storms and dried quickly afterwards. These conditions were not favourable for fungus growth and the crop only had very minor evidence of black spot and powdery mildew. Due to the low disease pressure present, there were no clear visual effects from any of the fungicide treatments and the data collected was not significantly different between treatments.

Experience in WA and South Australia indicate responses to foliar applied fungicide in field pea only reliably occurs in crops set to yield above 1.5 t/ha. In 2020 at Dalwallinu yields were well below this (average 800 kg/ha) and fungicide treatments were not economic.

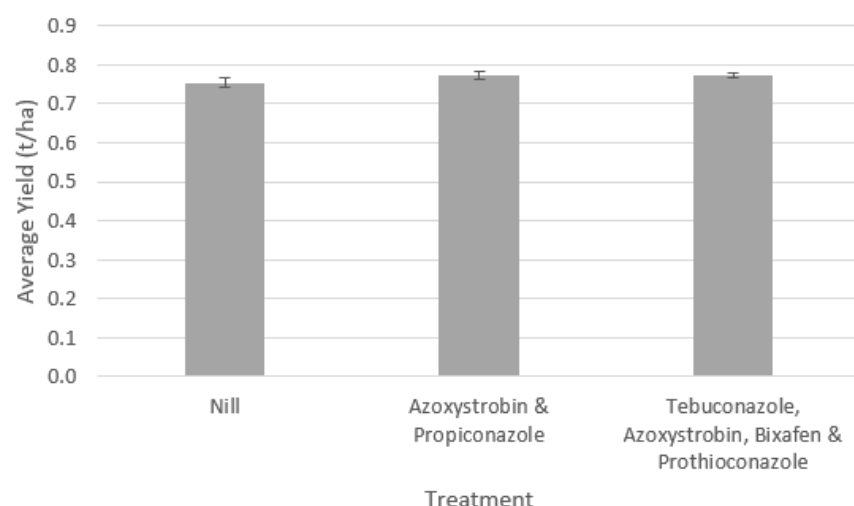


Figure 1: Seed yield of field pea in fungicide trials at Dalwallinu in 2020. Error bars are ± 1 S.E.

There were no significant differences between the average yields of the treatments.

Acknowledgements

This is a GRDC investment LIE1802-003SAX, led and managed by the Liebe Group. Thanks to Harry and Matthew Hyde for hosting and implementing the trial. Thanks to Elders Scholz Rural for their collaboration, providing advice for treatments and for supplying the chemical used in the trial.

Peer review

Mark Seymour, DPIRD

Contact

Judith Storer, Liebe Group
 research@liebegroup.org.au
 08 9661 1907

