

Fluid delivery systems in canola

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RESEARCH

Searching for answers

Location:

Coulta

Morgan family

Rainfall

Av. Annual: 525 mm

Av. GSR: 465 mm

2015 Total: 397 mm

2015 GSR: 350 mm

Yield

Potential: 3.6 t/ha (C)

Actual: 2.0 t/ha

Paddock History

2015: CL Canola

2014: Barley

2013: Wheat

Soil Type

Grey loamy sand

Plot Size

20 m x 2 m x 3 reps

production through delivery of micro and macro nutrients, lower cost of trace element delivery and better control of cereal and canola root and leaf diseases.

Blackleg continues to be a major issue facing canola growers especially on lower Eyre Peninsula and fluid delivery systems for product delivery may increase production and improve disease control. With the development of fungicides and the ability to deliver liquid products around the seed row during the seeding pass, there is now a range of application strategies available to growers to make use of these new products. Two trials separately investigated the relative benefits of a range of fungicide strategies for Blackleg control and a range of manganese (Mn) delivery options on canola yield. The performance of fluid phosphorus was also tested.

How was it done?

In autumn 2014, a national trial was set up to examine sampling position and stubble addition effect on crown rot detection. Four separate soil samples were collected from each of 129 NVT sites. At each site, two samples were collected on the row and two between the rows of the previous cereal crop. For each sampling position, one sample was supplemented with 15 pieces of cereal or grass weed stubble about 5 cm long (one piece by 15 locations) and the other was not. Samples were analysed using the PreDicta B DNA test.

What happened?

In the 2015 the trials were split, with the Blackleg trial located at Coulta and the nutrition trial focusing on manganese located at Farm Beach. Both replicated trials were sown with Clearfield

45Y86CL (CL canola) at 3 kg/ha. PreDictaB disease inoculum levels (RDTS), plant establishment, Blackleg infection and grain yield were measured during the season.

For the Blackleg trial the fertiliser treatment was 100 kg/ha of 18:20:0:0 with in furrow fungicides or trace elements delivered as a fluid. The trace element treatment had Mn at 1.5 kg/ha of manganese sulphate, 1 kg/ha Zn as zinc sulphate and 0.2 kg/ha Cu as copper delivered at a water rate of 80 L/ha. The fungicides Jockey and Intake were evaluated for Blackleg disease control. The paddock was spread with 500 kg/ha of gypsum in mid-April. The paddock was sprayed with 2.5 L/ha Roundup Attack with 2% LI700, 1.5 L/ha TriflurX, 100 ml/ha Goal, 40 g/ha Sentry and 290 ml/ha Lorsban with an 80 L/ha water rate. The trial was sown on 14 May.

Weed control was applied broad acre on 20 June with Targa @ 500 ml and Select @ 500 ml with 5% uptake at 100 L/ha water rate. 90 kg/ha of urea was applied broad acre on 25 June and also on 13 July. The fungicide trial was desiccated on 2 November with Sprayseed 250 @ 4 L/ha and harvested on 16 November 2015.

The Mn trial was not harvested because of very poor establishment, a dry finish and extensive bird damage near maturity which made fair comparisons between treatments impossible. Only results from the Coulta Blackleg trial are reported.

Data were analysed using Analysis of Variance in GENSTAT version 16.

Key messages

- **There were no differences in canola Blackleg infection or yield using fungicides as seed treatments or in-furrow in 2015.**
- **In 2014 combined protection of a fungicide on seed and in the furrow as a banded fluid reduced Blackleg infection and increased yield.**
- **The selection of Blackleg resistant varieties in the rotation is important.**

Why do the trial?

A SAGIT Fluid delivery project was funded to update the benefits of fluid delivery systems from previous research and assess the potential of fluid nutrient delivery systems and disease control strategies compared to current systems. The fluid systems have the potential to increase

Fungicide treatment	Canola establishment (plants/m ²)	Blackleg score (% infection)	Yield (t/ha)
Intake (in furrow) and Jockey (on seed)	32.7	10.2	2.18
Intake (in furrow)	35.0	11.1	2.01
Intake (on fertiliser)	38.6	15.1	2.08
Jockey (seed)	39.9	22.4	1.87
Control	29.7	12.6	2.09
Control plus Trace elements	30.1	19.8	2.11
LSD ($P=0.05$)	ns	ns	ns

Table 1 Disease scores, growth measurements and yield for CL canola with fungicide treatments in Coultla trial, 2015.

What happened?

The fungicide trial was located at Coultla within an intensive canola cropping region with a potentially high Blackleg disease pressure. A PredictaB test showed high disease risk for *Rhizoctonia* but low risk levels for *Pratylenchus neglectus*.

The initial soil data showed adequate soil nutrition, phosphorus and trace elements at the trial site with 71 mm of soil moisture in the plant root zone.

Establishment was unaffected by fungicide treatments, averaging 34 plants/m² (Table 1). The Blackleg infection was lower in 2015 (av.

15%) compared to 2014 (av. 29%). There were no significant differences in Blackleg infection due to the fungicide treatments imposed as seed dressings or in furrow recorded at this site in 2015. There were no differences in yield recorded in 2015 (Table 1).

What does this mean?

In the 2014 season in the same trial the combined fungicide treatments did significantly increase yield over the nil fungicide control treatment at a similar site, however the difference in Blackleg disease levels scored was not significant (EPFS Summary 2014, Fluid delivery systems in canola, p104).

In 2015 there were no significant differences in Blackleg infection or yield at this site. The selection of resistant varieties with high Blackleg ratings within paddock rotations is important.

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