

Fungicide options for managing blackleg in canola

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Key messages

Blackleg severity was reduced and yield increased in canola by Impact® when applied as in-furrow, and by a combination of Jockey® seed dressing and foliar application of Prosaro®, in field trials conducted at Katanning and Wittenoom Hills.

Aims

To investigate the relative efficacy of seed dressing, in-furrow and foliar fungicide applications alone and in combination, for managing blackleg in canola varieties with different levels of blackleg resistance.

Method

Field trials were conducted at two locations Katanning and Wittenoom Hills. At Katanning, three Triazine Tolerant (TT) varieties, three Roundup ready (RR) varieties and four Clearfield (CL) varieties differing in their resistance to blackleg were sown. At Wittenoom Hills only three TT varieties (CB Atomic, Crusher and Hyola 656TT) were evaluated. Both trials were sown into a paddock containing residues from a canola crop grown in 2011. Five fungicide treatments were applied to each variety: these were Nil (untreated), Jockey seed dressing at 2L/100 kg seed, Impact® in furrow at 400ml/ha, Prosaro® foliar spray at 400ml/ha and Prosaro® in combination with Jockey® seed dressing. The single foliar spray of Prosaro® was applied at 4-6 leaf stage. Trial design was a split plot design at Katanning and a randomised block design at Wittenoom Hills, both with three replications. Trials at both sites were sown at the time of commencement of spore showers. Crown canker severity was assessed on 35 plants per plot using a 0-4 scale (0 = no disease, 4 = 75-100% canker) about three weeks prior to harvest and expressed as percent disease index. All plots were harvested for yield. Data were analysed using Genstat release 14.

Results

Severity of crown cankers (expressed as percent disease index or PDI) was significantly reduced in all fungicide treatments at both Katanning and Wittenoom Hills and all fungicide treatments except for Jockey seed dressing at Katanning (Figs 1 and 2). Seed yield was significantly improved with Impact® and a combination of Jockey® plus Prosaro. In general, fungicide responses were more pronounced in moderately susceptible to moderately resistant varieties than in resistant varieties. Disease severity was lowest in resistant (R) varieties, whereas, there were small differences in disease severity in varieties with resistances ranging between moderately resistant (MR) and moderately susceptible to susceptible (MS-S). At Wittenoom Hills, yield was improved with fungicide applications in the more susceptible varieties Atomic (MS) and Crusher (MR-MS) but not in the resistant variety Hyola 656 TT (R).

At Katanning the gross margins for Impact® in furrow was \$62 and for Jockey® seed dressing in combination with Prosaro® it was \$88. The mean yield of RR varieties averaged over fungicide treatments and varieties was significantly ($p < 0.05$, $LSD = 0.1t/ha$) higher (2.7t/ha) than either CL (2.3t/ha) or TT varieties (2.1t/ha).

At Wittenoom Hills, the treatments of Impact® in furrow and foliar application of Prosaro® gave the best gross margins of \$135 and \$93 respectively.

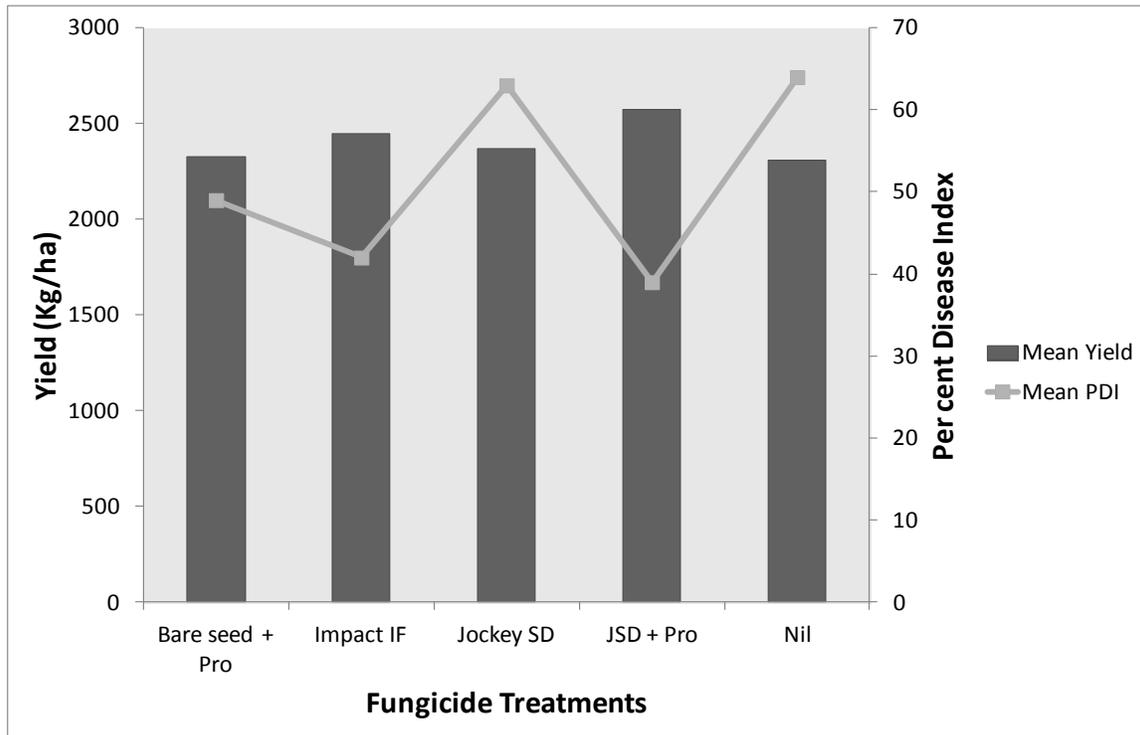


Figure 1 Main Effects of fungicide treatments on percent disease index and yield in ten canola varieties at Katanning. LSD for disease index = 6% and for yield = 99 kg/ha.

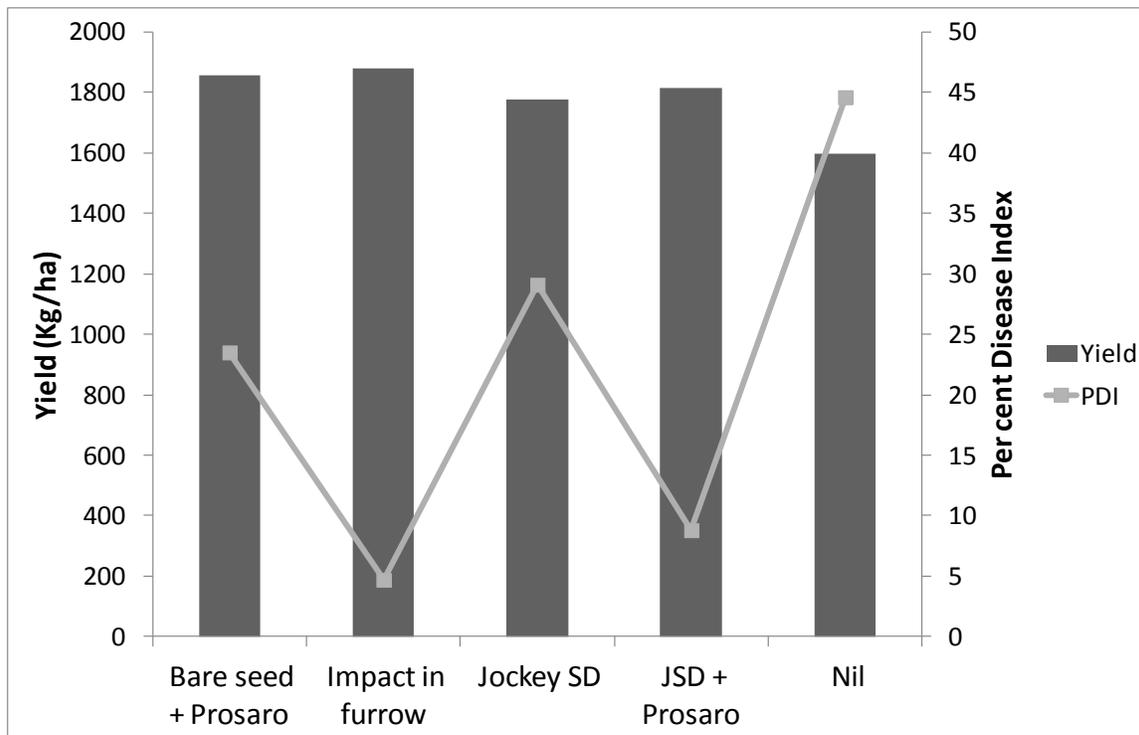


Figure 2 Main Effects of fungicide treatments on per cent disease index and yield in three canola varieties at Wittenoom Hills. LSD for disease index = 6% and yield = 224 kg/ha.

Conclusion

These investigations support previous findings that both Impact® as in-furrow application and foliar fungicide applications of Prosaro® combined with Jockey Seed dressing are equally effective in reducing blackleg. Impact® in furrow gave the best or second best gross margins at the two locations. Application of foliar fungicide may provide growers with an additional tool for in-crop management of blackleg, particularly in conjunction with spore release timings forecast by Blackleg Sporacle.

Key words

Disease management, blackleg, canola, fungicides, host resistance, crown canker

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