

Evaluation of Fungicide Options to Control White Mould in Pinto Beans



All fungicides improved pinto bean yields in two out of three years when white mould pressure was high. The break-even yield to cover the cost of fungicide varies depending on the cost of the product and the yield response.

WHITE MOULD (SCLEROTINIA) is the number one disease concern for dry bean producers in Manitoba. The development of white mould during each growing season depends on the moisture and temperature conditions leading up to and during flowering. Under yield-limiting disease pressure, farmers rely on fungicide to control this disease.

Different products are currently available for control of white mould in dry beans. The objective of this study was to evaluate the effectiveness of different fungicide options with a range of active ingredients in pinto beans across multiple growing seasons in Manitoba.

Replicated and randomized full-scale field trials were conducted at Carman from 2013 to 2015. Fungicides included various combinations of Allegro, Acapela, Lance, Propulse and Serenade compared to an untreated check (Figure 1). All fungicide treatments were applied according to label directions, mainly at the R2 (early pin bean) stage. Trials were undercut and picked up in four pairs at the time of harvest.

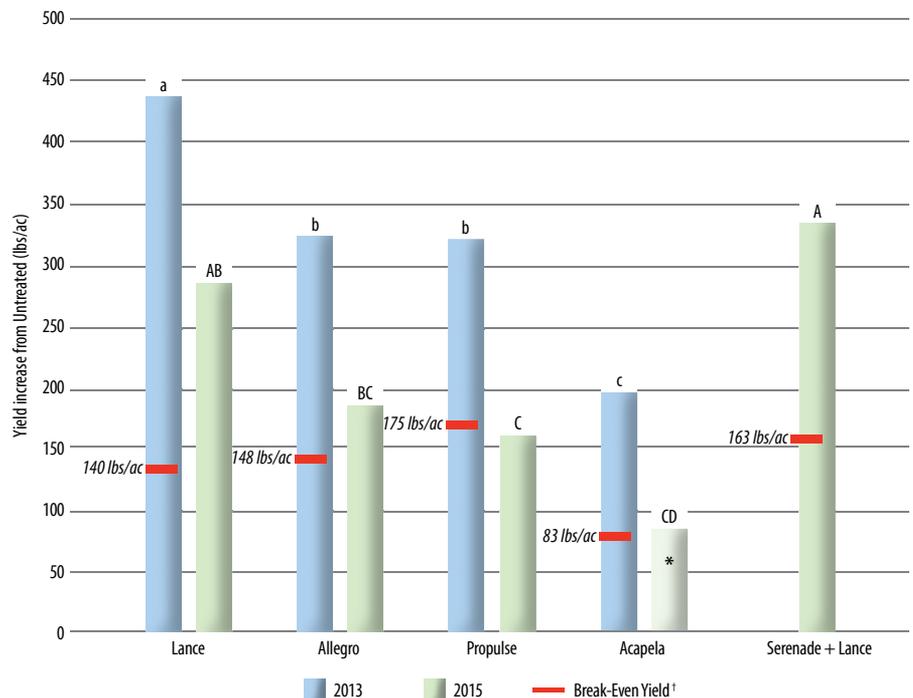
Significant yield differences among fungicide treatments occurred in two out of three years. This is due to higher white mould pressure in 2013 and 2015, compared to low disease pressure in 2014. In 2013, all fungicide treatments produced higher yields than the untreated check, but Lance outperformed the other fungicides. In 2015, all fungicide products increased yield over the untreated check except for Acapela (Figure 1). Yields were similar among some fungicide products in 2015. However, Lance and Lance + Serenade

generally outperformed Allegro, Propulse and Acapela.

An economic analysis was conducted on the responsive years using suggested retail prices (SRPs) for each fungicide, an application cost of \$7/acre and a pinto bean price of \$0.30/lb. Based on the results of this study, the yield increase required to break even (red bar) ranged from 83 lbs/ac for Acapela to 175 lbs/ac for Propulse (Figure 1).

The results of this study have shown that fungicide efficacy differs among products and is influenced by growing season conditions. In most cases, each product resulted in higher yields compared to the untreated check when white mould pressure was high. Overall, the return on investment will depend on anticipated white mould pressure, the cost of each fungicide product and the yield response from each product. ▶

Figure 1. Pinto bean yield increases (lbs/ac) from different fungicide products and the break-even yield for each fungicide (2013, 2015).



Different letters within a year denote statistically significant differences between products. * No significant difference between treated or untreated.
 † Economic analysis performed with suggested retail prices for each fungicide, application cost of \$7/ac, and pinto bean price of 30 cents/lb.

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MPSG INVESTMENT \$62,100

DURATION 3 years

