

Optimal Seeding Rates and Disease Management for Faba bean (*Vicia fabae* L. *minor*) Varieties

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INTRODUCTION

Faba bean (*Vicia fabae* L. *minor*) was first commercially grown in Saskatchewan during 1972. Traditionally, the number of acres seeded to have been minimal, but with increased interest, the number of seeded acres has risen to 61, 792 in 2015. Faba bean is known for its nitrogen fixing capabilities, high protein content, and suitability in areas where other pulses are not a sustainable.

Unfortunately, agronomic information available to Saskatchewan's producers is either unavailable, outdated, or sourced from other growing regions. Therefore, it is necessary to develop Saskatchewan based agronomic information.

OBJECTIVES

The overall objective of this research is to increase the yield and quality of Saskatchewan produced Faba beans. The first objective is to identify the optimal seeding rate. The second is to identify optimal fungicide products and application timing for the control of Ascochyta Blight and Chocolate Spot.

MATERIALS AND METHODS

Seeding Rates:

Multi-Variety: CDC SSNS-1, CDC Snowdrop, and FB9-4 was seeded at 20, 40, 60, 80, and 100 seeds m⁻² in Saskatoon, Melfort, Sk.

Single Variety: CDC Snowdrop was seeded at 20, 40, 60, 80, and 100 seeds m⁻² in Indian Head, Outlook, Scott, and Swift Current

Disease Control:

Priaxor, Propulse, Vertisan, and Bravo were applied at 10%, 50%, and 10&50% flowering to CDC SSNS-1 and CDC Snowdrop in Saskatoon, SK.

All sites were seeded as small plots, in a Randomized Complete Block Design with 4 replicates in 2015 and 2016.

SEEDING RATES RESULTS

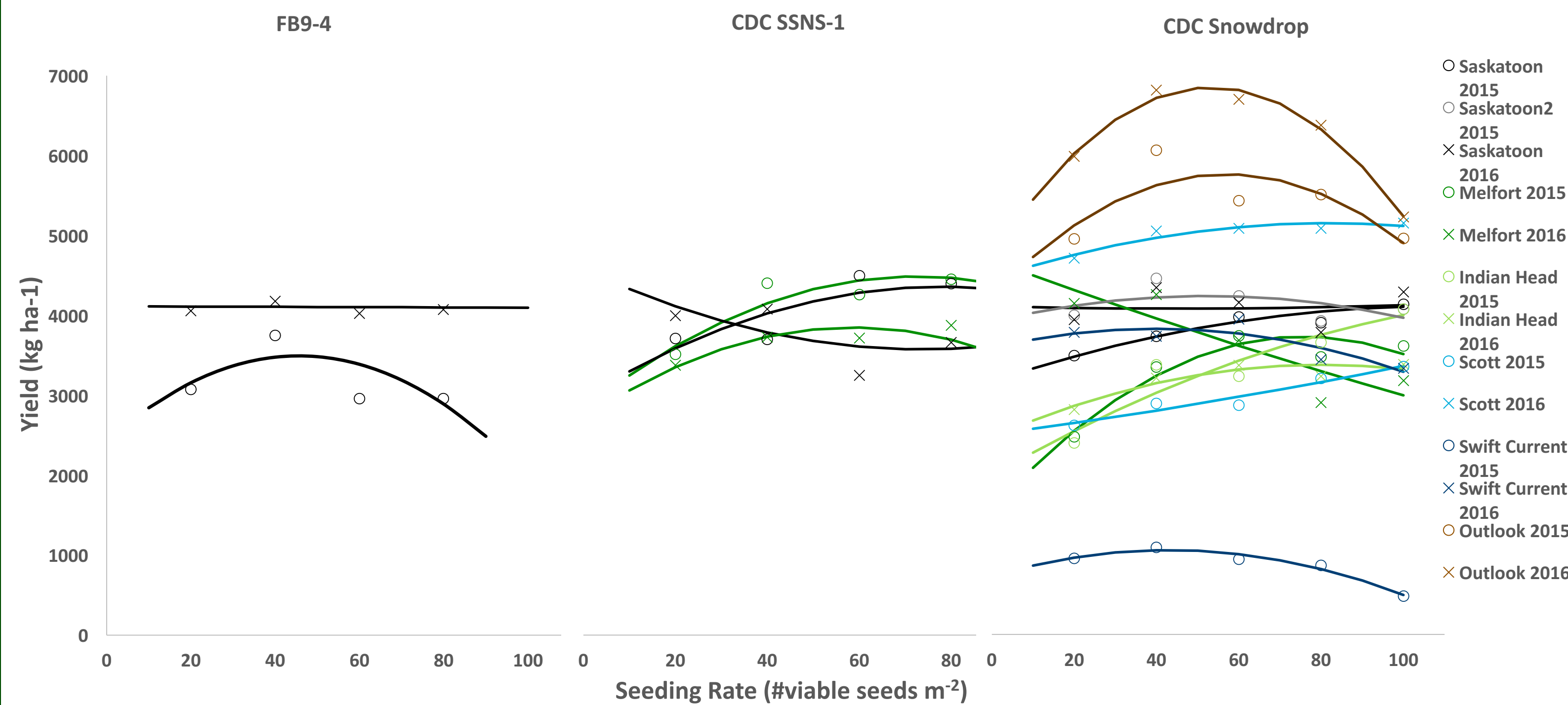


Figure 1: Seeding Rate (viable seeds m⁻²) effect on Yield (kg ha⁻¹) of three Faba bean varieties (FB9-4, CDC Snowdrop, and CDC SSNS-1) at all locations in 2015 and 2016.

DISEASE CONTROL RESULTS

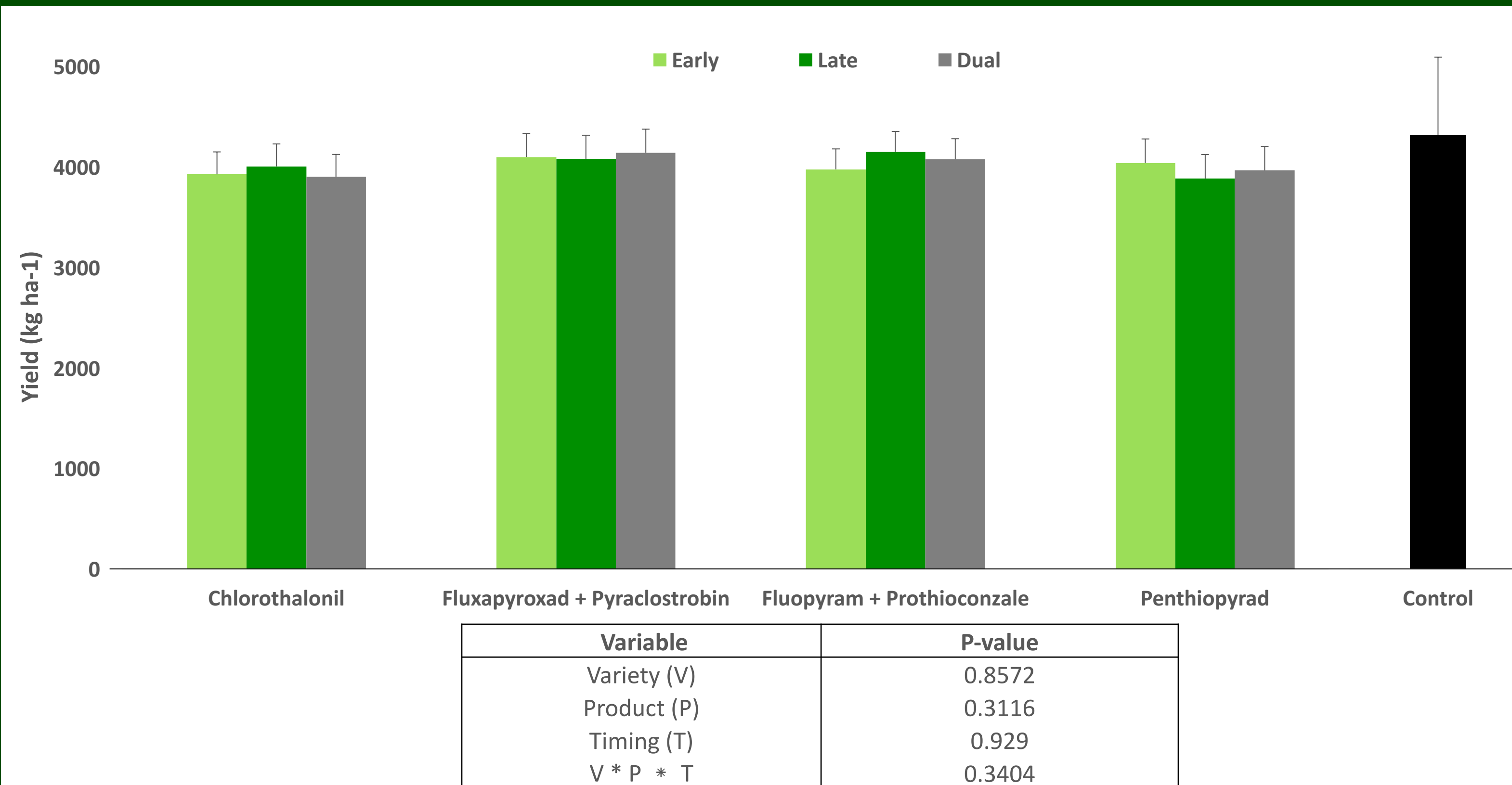


Figure 2: Fungicide product and application timing effects on Faba bean Yield (kg ha⁻¹) at Saskatoon and Melfort study sites in 2015 and 2016.

CONCLUSION

Seeding Rates:

Each variety responded differently to seeding rate at each location.

FB9-4: the optimal seeding rate for this variety is lower than the seeding rates studied.

CDC SSNS-1: seeding rate responses indicate that the optimal seeding rate for CDC SSNS-1 can be increased from the recommended 44 plants m⁻².

CDC Snowdrop: at 4 sites, yield increased above the the recommended seeding rate. At the other 9 sites, it appears there was not a yield increase in response to seeding rate. At these sites, it appears that optimal seeding rates may be lower than the recommended seeding rate.

Disease Control:

Fungicide product and application timing did not significantly alter the yield of faba bean varieties in comparison to the control.

Yield benefits due to fungicide application are dependent on environmental conditions conducive to the development of Faba bean diseases.

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