

Pasmo is the most common disease that affects flax yields in Saskatchewan and, like many diseases, is more severe under wet conditions and with heavy crop canopies. Several foliar fungicide products are registered to control this disease. Producers frequently question the potential return on investment for fungicide applications on flax. Past field trials and demonstrations at Indian Head have shown reasonably consistent responses to fungicide applications with yield increases of 20-30% when disease pressure is high. However, these benefits are only realized when pasmo is present; therefore, scouting remains important. Past research and producer testimonials suggest that high rates of nitrogen are possible without lodging. Most producers apply 40 to 80 lbs/ac of actual nitrogen. However it is possible that flax will respond to even higher rates under high yielding conditions and with fungicide application.

The objectives were to demonstrate the response of flax to fungicide applications under various nitrogen fertilizer rates at Melfort and Yorkton. The main treatment was fungicide or no fungicide at nitrogen rates of 30, 60, 90, 120 and 150 lbs/ac of actual nitrogen.

Flax responded well to added nitrogen at both Yorkton and Melfort with yield gains of 23 and 55%, respectively. Optimum N rates were in the range of 90 to 150 lbs/ac. This is higher than expected. High rates of nitrogen are known to delay maturity, as was the case at Yorkton. Lower emergence associated with high rates of N at Yorkton would have also contributed to the delay in maturity and may have restricted yield. Added nitrogen did not affect emergence or maturity at Melfort.

No fungicide affects were significant; however, there was a trend for the application of fungicide to increase yields by 9 and 5% at Yorkton and Melfort. There was a trend for fungicide to delay maturity at Yorkton but no such affects were observed at Melfort. Disease levels were low at all locations, as spring was very dry. The variability in fungicide response reinforces the recommendation to scout fields on an individual basis and each year prior to committing to a fungicide application. While scouting for many diseases can be difficult at the time when fungicides must be applied, in the years where the greatest responses were observed, substantial disease was already observed on the bottom leaves and lower stem at mid-bloom.

Independent of fungicide, flax responded well to added nitrogen at both Yorkton and Melfort with yield gains of 23 and 55%, respectively. Optimum N rates were in the range of 90 to 150 lbs/ac, which was higher than expected. The strong yield response to nitrogen was high in Melfort likely due to the trial area not receiving nitrogen for the past 5 years. Soil tests revealed only marginal levels of soil N were present at the Yorkton site.

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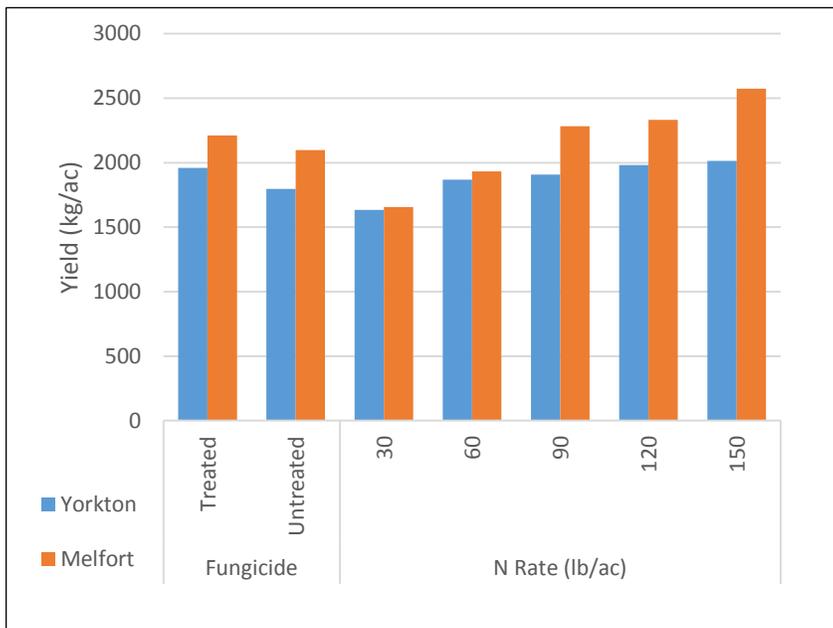


Figure 1: Effect of fungicide and N rate on flax yield at Yorkton and Melfort, SK.