

Nitrogen Fertility and Fungicide Interactions in Flax at Minot

This trial was designed to investigate interactions between levels of nitrogen fertility and the timing of fungicide applications on flax in order to define optimal production practices with these inputs. Below are combined data from the 2014 and 2015 growing seasons.

Interactions

N Fert Levels	Fungicide Timing ^b	Days to Bloom	Days to Mature	Plant Height	Lodging	Test Weight	Oil Content	Yield
lbs N / A ^a		DAP ^c	DAP ^c	inches	0-9 ^d	lbs/bu	%	bu/A
25	untreated	54	95	27	1.5	52.9	43.0	18.7
	w / herb	55	96	26	0.8	52.3	43.5	19.2
	10% blm	54	95	26	0.0	53.3	44.2	19.9
	100% blm	54	96	27	0.5	53.5	43.9	18.6
75	untreated	54	97	27	0.8	53.9	43.9	22.3
	w / herb	54	95	28	0.3	53.4	43.5	24.2
	10% blm	54	96	28	0.5	53.3	43.9	24.7
	100% blm	55	96	27	0.5	53.7	43.5	28.6
125	untreated	55	98	29	2.5	53.3	43.0	24.5
	w / herb	54	99	28	1.5	53.0	42.3	23.6
	10% blm	55	98	27	1.0	52.9	42.7	24.5
	100% blm	54	99	28	1.3	52.7	43.0	24.8
LSD 5%		NS	NS	NS	NS	NS	NS	3.6

Nitrogen Fertility Comparisons

N Fert Levels	Days to Bloom	Days to Mature	Plant Height	Lodging	Test Weight	Oil Content	Yield
lbs N / A ^a	DAP ^c	DAP ^c	inches	0-9 ^d	lbs/bu	%	bu/A
25	54	95	26	0.7	53.0	43.6	19.1
75	54	96	28	0.5	53.8	43.7	24.9
125	54	98	28	1.6	53.0	42.8	24.4
LSD 5%		NS	1	NS	0.7	0.7	1.9

Timing of Fungicide Application Comparisons

Fungicide Timing ^b	Days to Bloom	Days to Mature	Plant Height	Lodging	Test Weight	Oil Content	Yield
	DAP ^c	DAP ^c	inches	0-9 ^d	lbs/bu	%	bu/A
Untreated	54	97	27	1.5	53.4	43.3	21.9
w/herb	54	97	27	0.8	52.9	43.1	22.2
10% blm	54	96	27	0.5	53.2	43.6	23.0
100% blm	54	97	27	0.8	53.3	43.5	24.0
LSD 5%		NS	NS	NS	0.9	NS	NS

^a Nitrogen fertility levels = residual soil N + lbs of actual N applied as urea (46-0-0) prior to planting.

^b Fungicide Timing: 8 oz/A Headline (2014) or 8 oz/A Priaxor (2015) applied with grass herbicide, at 10% bloom and at full bloom.

^c DAP = days after planting.

^d Lodging: 0 = none, 9 = lying flat on the ground. 2014 data only.

NS= no statistical difference.

Previous Crop: spring wheat

Variety = York

Planting Rate: 40 lbs/A

Soil Type: Williams Loam

Conclusions: Interactions between nitrogen fertility levels and the timing of fungicide applications were not detected and therefore these inputs should be managed independently. High levels of nitrogen prolonged crop maturity, increased lodging, had lower levels of oil and did not enhance yield beyond the 75 pound nitrogen level. Timing of fungicide applications had no significant effect on observed characteristics, however there was a trend for increased yields with fungicide applications during flowering. Disease was not observed in either year.