FLAX (*Linum usitatissimum* 'York')
Pasmo; *Septoria linicola*

S. Halley
Langdon Research Extension Center
North Dakota State University
Langdon, North Dakota 58249

Fungicide efficacy at two application timings for control of pasmo disease in flax, 2003.

An area was selected in a foundation seed production field at the Langdon Research Extension Center for a trial to evaluate fungicides and application timings for control of pasmo on cultivar 'York' flax. The field was planted on May 27 with a double disk drill with six inch spacing between disks. Previous crop was also flax and the trial site was selected because of a pasmo infection the previous year. The trial design was a randomized complete block arranged a 5 x 2 factorial. Fungicides tested included Bravo (chlorothalonil), Folicur (tebuconazole), Headline (pyraclostrobin), Penncozeb (Mancozeb), and Stratego (trifloxystrobin + propiconazole). Timings tested were 7 days after first flower growth stage and a subsequent application to selected plots 21 days after first flower growth stage. Plots were 7 x 16 ft with the center 4 ft harvested for yield. Fungicides were applied by pressurized CO_2 backpack sprayer at 18 GPA with hydraulic nozzles XR8002 oriented to spray vertical. The first fungicide application was made on 20 Jul with subsequent applications made on 4 Aug. Disease assessments were recorded 15 Aug by measuring the height above the ground that leaves were necrotic to represent early Pasmo infection and the maximum height above the ground that pasmo lesion were visible to quantify late Pasmo infection. The plant height was 26 in. Plots were harvested with a Hege plot combine 8 Sep and the grain sample cleaned and processed for yield and test weight. Data was analyzed with the general linear model (GLM) in SAS. Least significant differences were used to compare means at the 5% probability level.

A dry Aug reduced yield potential on the crop. No differences were measured in yield or test weight. A fungicide/timing interaction was detected. Headline fungicide had significantly less necrotic leaves when applied at the early application timing compared to the two application timing. Stratego had significantly less necrotic leaves when applied twice. No differences were determined in necrotic leaves by timings in Bravo, Folicur, or Penncozeb. However an early fungicide timing of Stratego was not as effective as other select fungicides and timings. Averaged across all timings Penncozeb was more effective than Folicur in suppressing late Pasmo infection and the subsequent fungicide application timing suppressed late Pasmo infection more than early fungicide treatment alone. Further study is needed to recommend timings with select fungicides. The limited yield potential in 2003 due to low precipitation amount and flax on flax crop rotation likely made yield differences not significant.

Treatment and rate/A	Application Timing*	Necrotic Leaves	Pasmo Height	Yield	Test Weight
		in.	in.	bu/A	lb/bu
Bravo 82.5DF 1.6 lb/A…….	7	14.3	21.0	24.6	52.9
	7 + 21	12.3	18.5	23.0	52.0
Folicur 3.6F 4 fl oz/A……...	7	15.0	22.8	22.4	52.4
	7 + 21	14.3	21.0	24.9	52.4
Headline 2.09EC 6 fl oz/A……...	7	11.3	19.8	24.7	52.4
	7 + 21	14.7	21.0	25.8	52.8
Penncozeb 75DF 2 lb/A……...	7	13.8	21.3	21.9	52.1
	7 + 21	12.0	16.3	21.3	52.6
Stratego 11.4%:11.4% 10 fl oz/A	7	16.3	22.0	23.6	42.3
	7 + 21	12.8	20.0	24.2	42.6

Treatment					
Fungicides averaged across timings					
Bravo		13.3	19.8	23.8	52.4
Folicur		14.6	21.9	23.7	52.4
Headline		13.0	20.4	25.2	52.6
Penncozeb		12.9	18.8	21.6	52.4
Stratego		14.5	21.0	23.9	52.5
Timings averaged across fungicides					
	7	14.1	21.4	23.4	52.4
	7 + 21	13.2	19.4	23.8	52.5
Untreated**		16.0	21.5	21.3	52.3
Fungicide		NS	2.1***	NS	NS
Timing		NS	1.3	NS	NS
Fung*Timing		2.3	NS	NS	NS
% C.V.		12	10	13	1

*Days after first flower

**Not included in statistical analysis

*** Significant at 0.1 probability level for mean comparisons.