

**Control of stripe rust of spring wheat with foliar fungicides, 2003.**

Fungicide study was conducted in an experimental field with the Palous silt loam soil under natural infection of stripe rust near Pullman, WA. Urea (46-0-0) was applied at 60 lb/A at the time of cultivation. Susceptible 'Fielder' and 'Zak' spring wheat cultivars were seeded in rows of 14 in. apart at 70 lb/A with an experimental drill planter on 27 Apr 03. Herbicide Hoelon 3EC was applied at 2.5 pt/A on 22 May when wheat plants were at tillering stage and a mixture of 0.33 oz Harmony Extra, 0.75 pt Buctril, and 1% Agridex per A was applied on 2 Jun when wheat plants were at jointing stage. Ammonium sulfate (20-0-0-24) was broadcast at 30 lb/A on 15 Jun when wheat plants were at booting stage. Fungicides were applied as fl oz of product in 16 gal water/A on 2 Jul at flowering stage when Fielder had 30% of stripe rust severity on flag leaves and 40% on lower leaves, and Zak had 20% on flag leaves and 50% on lower leaves. Spray was done between 3:00 pm and 5:30 pm when the wind was between 0 and 4 mph and the temperature about 72 C. A 601C backpack sprayer from R & D Sprayers Inc. was used with a C3470 regulator and a 2.5 lb CO<sub>2</sub> compress cylinder. The spray boom had four nozzles 19 in. apart, but three were used because of the width of the plots. The spray pressure was 18 psi. Eight fungicide treatments and one non-treated as control were used. A randomized block design was used with four replications for each treatment. Plots were 72.50 sq ft. Stripe rust severity (percent of infected foliage) was assessed for flag leaves and lower leaves of each plot on 2Jul before fungicide application and on 17 Jul at late milk stage. Readings were identical for both flag and lower leaves for all plots on 17 Jul. Yields were determined from plots harvested on 18 Aug when kernels were naturally dry. Rust and yield data were subjected to analysis of variance and means were separated by Fishers protected LSD test.

Stripe rust severity in non-treated control plots of Fielder and Zak was 99% and 90-95%, respectively, by late milk stage on 17 Jul. All fungicide treatments effectively reduced stripe rust severity. All treatments except Quadris applied at 6.1 fl oz/A significantly increased grain yield compared to the non-treated control on Fielder. Stratego and A13705 200 SC applied at 13.7 fl oz/A significantly increased grain yield on Zak.

Treatment and rate/A*	Stripe rust (%)	Yield**	
	17 Jul Soft dough	Mean (bu/A)	Increase (%)
<b>Fielder</b>			
A13705 200SC 13.7 fl oz + COC 1% v/v.....	0.8	47.8	40.4
Folicur 3.6 F 432SC 4.0 fl oz + NIS 0.25% v/v .....	3.0	47.5	39.7
A13705 200SC 13.7 fl oz + NIS 0.25% v/v .....	1.0	46.8	37.5
Stratego 2.08EC 250EC 10.0 fl oz + NIS 0.25% v/v.....	10.3	46.0	35.3
A13705 200SC 10.2 fl oz + NIS 0.25% v/v.....	11.5	45.8	34.6
Tilt 3.6EC 428EC 4.0 fl oz + NIS 0.25% v/v.....	3.0	44.3	30.2
Headline 2.09SC 250SC 6.1 fl oz + NIS 0.25% v/v .....	45.0	43.0	26.5
Quadris 250SC 6.1 fl oz + NIS 0.25% v/v.....	47.8	39.5	16.2
Non-Treated Control.....	99.0	34.0	
LSD ( $P \leq 0.05$ ).....	21.5	7.2	
<b>Zak</b>			
A13705 200SC 13.7 fl oz + COC 1% v/v.....	0.0	66.3	12.8
Stratego 2.08EC 250EC 10.0 fl oz + NIS 0.25% v/v.....	0.0	66.0	12.3
A13705 200SC 13.7 fl oz) + NIS 0.25% v/v.....	0.0	65.0	10.6
Folicur 3.6 F 432SC 4.0 fl oz + NIS 0.25% v/v.....	0.3	63.3	7.7
A13705 200SC 10.2 fl oz) + NIS 0.25% v/v.....	0.0	62.5	6.4
Headline 2.09SC 250SC 6.1 fl oz + NIS 0.25% v/v .....	2.3	61.3	4.3
Tilt 3.6EC 428EC 4.0 fl oz+ NIS 0.25% v/v.....	0.3	60.3	2.6
Quadris SC250 6.1 fl oz + NIS0.25% v/v.....	3.0	58.5	-0.4
Non-Treated Control.....	91.3	58.8	
LSD ( $P \leq 0.05$ ).....	2.8	5.5	

\* Crop Oil Concentrate (COC) and non-ionic surfactant (NIS), X-77, were applied in treatments as indicated.

\*\* Yield calculated based on 3-5 % moisture and 60 lb/bu.