The Impact of Foliar Fungicide on Crown Rot

Trial ID: AM1002 **Location:** Rowena **Trial Year:** 2010
Investigator: Anthony Mitchell

Objective	**To evaluate the impact of foliar fungicides on disease level, yield and grain quality from 'seed inoculated' infections of Crown rot**		
Planting Date:	**10/05/2010**		
Application:	**T1**	**T2**	**T3**
Application Date:	**8/06/2010**	**29/06/2010**	**22/07/2010**
Growth Stage at Application:	**GS13**	**GS25**	**GS32**
Nozzles:	**AIXR110015**		
Volume:	**70L/ha**		

Trt No.	Variety	Crown Rot Inoculum 2g/m Row	Product & Rate	Application Timing	Emergence 28/05/2010 Plants/m²	Yield 4/11/2010 t/ha	Test Weight kg/hL	Screenings %	Protein %
1	EGA Gregory	-	-	-	42	5.6 a	81 abcd	1.2 defgh	11.2 def
2	EGA Gregory	+CR inoculum	-	-	44	5.3 abc	81 abcd	1.2 defgh	10.7 f
3	EGA Gregory	+CR inoculum	Triazole A 290ml/ha	T1	40	5.2 abcd	81 abc	1.2 defgh	10.6 f
4	EGA Gregory	+CR inoculum	Triazole A 290ml/ha	T2	46	5.4 abc	80 abcde	1.8 bcd	10.7 f
5	EGA Gregory	+CR inoculum	Triazole A 290ml/ha	T3	45	5.3 abc	81 a	1.2 defgh	10.7 f
8	EGA Gregory	+CR inoculum	Triazole B 300ml/ha	T2	43	5.3 abc	81 ab	1.0 defgh	10.8 f
9	EGA Gregory	+CR inoculum	Triazole B 300ml/ha	T3	44	5.5 ab	81 ab	1.1 defgh	10.7 f
11	EGA Wylie	-	-	-	49	4.8 ef	79 cdefg	1.4 cdef	12.7 a
12	EGA Wylie	-	Triazole A 290ml/ha	T3	48	4.7 f	80 bcdef	0.9 efghi	12.3 abc
13	EGA Wylie	+CR inoculum	-	-	39	4.5 f	79 defg	0.8 fghi	12.1 abc
14	EGA Wylie	+CR inoculum	Triazole A 290ml/ha	T2	41	4.6 f	79 efgh	1.4 cdef	12.4 ab
15	EGA Wylie	+CR inoculum	Triazole A 290ml/ha	T3	46	4.8 ef	80 bcdef	1.2 defg	12.1 abc
16	Bellaroi	-	-	-	47	5.5 ab	79 fgh	0.5 hi	12.0 abc
17	Bellaroi	+CR inoculum	-	-	42	5.3 abc	78 gh	0.6 ghi	11.6 cde
18	Bellaroi	+CR inoculum	Triazole A 290ml/ha	T2	45	5.5 a	78 h	0.4 i	11.9 bcd
19	Bellaroi	+CR inoculum	Triazole A 290ml/ha	T3	41	5.6 a	77 h	0.6 ghi	12.2 abc
20	Grout	+CR inoculum	-	-	52	5.2 bcd	65 i	3.4 a	11.2 def
21	Grout	+CR inoculum	Triazole A 290ml/ha	T2	50	4.9 def	67 i	2.3 abc	9.5 g
22	Grout	+CR inoculum	Triazole A 290ml/ha	T3	45	5.1 cde	66 i	2.5 ab	10.5 f
				P =	0.06	<0.01	<0.01	<0.01	<0.01
				LSD =	nsd	0.4	1.5	Log transform	0.8

Yield cv: 5.1%

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Factorial Analysis of Fungicide Timing x Variety:

		Yield kg/ha	Test Weight kg/hL	Screenings %	Protein %	CR Severity Rating	Fp Incidence %
Timing	Nil	5.11	75.9	1.6	11.4	32 a	36 a
	GS25	5.18	75.9	1.6	11.1	24 b	26 b
	GS32	5.15	76.2	1.4	11.4	22 b	26 b
	P =	0.66	0.71	0.87	0.43	<0.01	<0.01
	LSD =	nsd	nsd	nsd	nsd	3.8	6.4
Variety	EGA Gregory	5.29 b	80.8 a	1.5 b	10.7 b	20 b	35 a
	EGA Wylie	4.57 c	79.4 b	1.2 bc	12.2 a	12 c	26 b
	Bellaroi	5.48 a	77.8 c	0.6 c	11.9 a	20 b	30 ab
	Grout	5.23 b	66.0 d	2.8 a	10.4 b	52 a	26 b
	P =	<0.01	<0.01	<0.01	<0.01	<0.01	0.04
	LSD =	0.16-0.17	0.9	0.7	0.5	4.4	7.4
Interaction (Timing x Variety)	P =	0.41	0.25	0.20	0.03*	<0.01**	0.09

Yield cv: 3.7%

Treatment means followed by the same letter are not significantly different at P = 0.05

nsd = No significant difference

CR Severity = Crown rot severity score, visual rating of % stem browning x extent of browning up stems (disease severity). Conducted on stubble collected at harvest

Fp Incidence = % of crowns colonised by *Fusarium pseudograminearum* (pathogen incidence). Conducted on stubble collected at harvest

*There was a significant interaction for Fungicide Timing x Variety for Protein. There was no impact on protein from fungicide application on any of the wheat varieties. However the application of fungicide at GS25 significantly reduced protein in Grout.

**There was a significant interaction for Fungicide Timing x Variety for CR Severity. There was no significant impact on CR Severity from fungicide application on any of the wheat varieties. However the application of fungicide, at either, timing significantly reduced CR Severity ratings in Grout.

In this situation there was no impact from fungicide application on grain yield, test weight or screenings from 'seed inoculated' infections of Crown rot. Fungicide application significantly reduced Crown rot severity ratings in Grout and the incidence of infected plants across all varieties.