

Project Title: Effect of Plant Growth Regulators (PGR's) on Spring Wheat Stem Solidness and Agronomic Performance

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Objective: To evaluate PGR effects on spring wheat stem solidness

Results:

Six PGR's were evaluated for their effects on spring wheat stem solidness and agronomic performance. Scholar spring wheat was planted on April 27, 2005 at a seeding rate of 75 lb/ac, with 7 inch row spacings, to a depth of 1.5 inches. Treatments were applied at early booting (June 21, 2005), using a back pack sprayer with Teejet XR11002 nozzles and 20 GPA.

In general, the treatments did not affect stem solidness in the lower internodes (1-4). However, there was a significant difference in stem solidness among treatments for the fifth internode. This response is not surprising since the treatments were applied at the boot stage. Apogee improved stem solidness to the greatest extent, followed by Palisade, Cycocel, and Trimmit, respectively. Tilt essentially had no effect on pith development. Interestingly, Cerone tended to reduce stem solidness. Overall, Apogee appears to be the most viable compound for the improvement of pith development in wheat.

Summary:

Several PGR's increased stem solidness in the fifth internode. Such materials could be useful in the management of the wheat stem sawfly.

Future Plans:

Evaluate the effects of PGR rates and application timing on stem solidness.

Table 1. Effects of PGRs on spring wheat stem solidness and agronomic performance in 2005.

PGR	Rate (lb a/a)	Stem solidness						Heading Julian	Plant height cm	Yield bu/ac	Grain moisture %	Test weight lb/bu	TKW g
		Internodes					Total						
		1	2	3	4	5							
Cerone	0.375	3.2	2.5	2.4	2.4	1.9	12.4	180.3	98.7	74.1	10.9	61.0	33.4
Palisade	0.375	3.5	3.1	3.1	2.6	3.8	16.1	184.7	56.0	56.3	10.5	60.4	31.1
Apogee	0.137	3.5	2.8	2.7	2.9	4.5	16.3	182.3	68.3	74.3	10.9	60.6	36.2
Cycocel	0.500	3.0	2.5	2.4	2.2	3.4	13.6	180.0	86.0	76.4	10.7	60.8	34.1
Trimmit	0.250	3.3	2.7	2.8	2.7	3.3	14.4	179.3	93.0	86.3	11.2	61.7	37.1
Tilt	0.112	2.8	2.5	2.3	2.9	2.3	12.7	179.7	101.0	85.9	11.4	62.2	37.4
Untreated		2.9	2.7	2.5	2.7	2.2	12.9	179.7	106.7	78.2	11.0	61.4	34.6
LSD (0.05)		NS	NS	NS	NS	1.04	2.27	0.99	7.21	11.17	NS	1.16	2.54
CV (%)		11.40	12.01	14.87	18.19	19.24	9.07	0.31	4.66	8.27	4.15	1.07	4.11

NS: Not significant (P>0.05).