

Project Title: Effects of Cerone and Lorsban Advanced on the Control of Orange Wheat Blossom Midge in Susceptible and Resistant Spring Wheat - 2014

Objective: To evaluate the interactive effects of applying Cerone and Lorsban Advanced on grain yield and quality in Orange Wheat Blossom Midge (OWBM) susceptible and resistant spring wheat cultivars.

Results:

This study was conducted to compare the treatment effects of Cerone and Lorsban Advanced when applied to Egan, a variety with OWBM resistance, and Solano, a non-resistant variety. The experimental design was a split-plot with the whole plot being Cerone and Lorsban Advanced treatments and the sub plot being variety. Treatments were replicated three times. Cerone treatments were applied at a rate of 0.75 pt/A, at flag leaf, on June 20<sup>th</sup>. Lorsban Advanced treatments were applied at a rate of 1pt/A, at 50% heading, on July 3<sup>rd</sup>.

The main effect of Cerone and Lorsban Advanced treatments had a significant effect on height, protein, and falling numbers (Table 2). Cerone applied alone or in combination with Lorsban Advanced, reduced plant height by 2.5 inches and decreased protein content.

Significant varietal differences were observed for the following response variables: OWBM larvae per spike, protein, test weight and thousand kernel weight. Egan provided complete control of OWBM larvae and was 1.5% higher in protein. Solano had greater test weight and thousand kernel weight values. Due to low OWBM populations this year, there were no significant difference in yield between varieties, regardless of the treatments applied.

Table 1. Materials and Methods - The effects of Cerone and Lorsban Advanced on the Control of the Orange Wheat Blossom Midge in Susceptible and Resistant Wheat - 2014

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Seeding Date: 5/1/2014	Harvest Date: 8/29/2014
Julian Date: 121	Julian Date: 241
Seeding Rate: 80 lb/A	Soil Type: Creston Sil
Previous Crop: Fallow	Soil Test: 431-40-258
Tillage: Conventional-Till	Fertilizer: 200-30-100
Irrigation: N/A	Herbicide: Huskie 11 floz/A and Axial XL 16.4 floz/A
	Fungicide: Headline 9 floz/A

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Table 2. Main effect of Cerone and Lorsban Advanced inputs on agronomic performance of spring wheat. 2014

Input	HD Julian	HT in	LOD %	OWBM no/spk	YLD bu/A	PRO %	TWT lb/bu	TKW g	FN sec
Check	184	37.8	7.7	4.1	109.9	15.9	60.3	35.8	449.8
Cerone	184	35.2	1.2	2.6	113.4	15.5	60.5	35.3	476.2
Lorsban Advanced	184	37.7	1.8	3.9	116.1	15.8	60.6	36.1	437.0
Cerone & Lorsban Advanced	184	35.2	1.2	3.9	114.9	15.4	60.6	35.0	451.5
LSD	ns	1.7	ns	ns	ns	0.4	ns	ns	ns
Pr>F	0.5035	0.0125	0.3911	0.3935	0.2863	0.0438	0.3376	0.4339	0.0542

Table 3. Main effect of cultivar on agronomic performance of spring wheat. 2014

Egan	184	36.7	3.0	0.0	113.9	16.4	60.3	33.5	455.0
Solano	184	36.3	2.9	7.2	113.2	14.9	60.7	37.6	452.3
LSD	ns	ns	ns	2.9	ns	0.1	0.1	1.0	ns
Pr>F	0.1869	0.4408	0.8434	0.0005	0.6852	0.0001	0.0001	0.0001	0.7455

Table 4. Effect of Cerone and Lorsban Advanced on spring wheat agronomic performance. 2014

	Egan								
Check	184	37.3	7.3	0.0	107.1	16.6	59.9	33.7	455.3
Cerone	185	35.7	1.3	0.0	115.7	16.2	60.3	33.5	479.3
Lorsban Advanced	184	38.3	1.7	0.0	117.6	16.6	60.5	34.1	434.3
Cerone & Lorsban Advanced	185	35.3	1.7	0.0	115.2	16.1	60.5	32.8	451.0
	Solano								
Check	184	38.3	8.0	8.2	112.7	15.2	60.7	37.8	444.3
Cerone	184	34.7	1.0	5.1	111.1	14.7	60.6	37.1	473.0
Lorsban Advanced	184	37.0	2.0	7.8	114.7	15.0	60.8	38.2	439.7
Cerone & Lorsban Advanced	184	35.0	0.7	7.8	114.5	14.7	60.8	37.1	452.0
LSD	ns	ns	ns	ns	ns	ns	0.1	ns	ns
Pr>F	0.8209	0.4377	0.5187	0.8181	0.1920	0.7522	0.0021	0.9547	0.8939

HD: heading, HT: height, LOD: lodging, OWBM: orange wheat blossom midge, YLD: yield, PRO: protein, TWT: test weight, TKW: thousand kernel weight, FN: falling number, ns: nonsignificant.