

Project Title: Plant growth regulator (PGR) and insecticide effects on spring wheat agronomic performance

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Objective: Evaluate the interactive effects of combining plant growth regulators with insecticides on spring wheat grain yield and quality.

Results:

This study was conducted to compare the effect of the PGR Cerone and the insecticide Lorsban when applied alone or in combination to spring wheat. The study area had been planted to spring wheat the previous seven years and had a history of moderate orange wheat blossom midge densities. The soil type was a Creston silt loam, with a pH of 7.5 and an organic matter content of 4.5 percent. The site was fertilized with a blend of N-P-K-S at rates of 12-40-30-10 lb/A, respectively. Hank spring wheat was seeded on May 4 at a rate of 80 lb/A in 8-inch wide rows. Headline was applied at 9 oz/A on June 21 to control stripe rust. The treatments were applied on July 6, 2012 when the crop was 80 percent headed and the average crop height was 24 inches. Treatments were applied to plot areas measuring 10 by 15 feet in 20 GPA with a backpack sprayer. The study was harvested on August 24, 2012.

All treatments reduced plant height compared to the check, but there were no differences in height among the treatments. Modest levels of the orange wheat blossom midge were present, but no treatment effects were observed. Nevertheless, the highest yields were obtained with treatments that included Lorsban. At the same time, treatments that contained Lorsban also had the highest falling numbers.

Summary:

Although there were no differences in owbm populations, treatments that included Lorsban produced the highest yields and the highest falling numbers.

Table 1. Material and Methods - plant growth regulator-insecticide - 2012

| | | | | | |
|----------------|--------------------|-------------|--------------------|---------------|---------------|
| Seeding Date: | 05/04/2012 | Soil Type: | Creston SiL | Fungicide: | 9 oz Headline |
| Seeding Rate: | 80 lb/A | Soil Test: | 292-34-228 | | + 0.25% NIS |
| Previous Crop: | Spring Wheat | Fertilizer: | 12-40-30-10-1 | Insecticide: | None |
| Tillage: | Conventional | Herbicide: | 1.7 pt/A Wolverine | Harvest Date: | 08/24/2012 |
| Irrigation: | 0.4" on 5/9 & 5/16 | | | | |

Table 2. Plant growth regulator-insecticides effects on spring wheat, Kalispell 2012

| Treatment | Rate pt/A | OWBM Aug 8 | Height inches | Yield Bu/A | Protein % | TWT lb/bu | TKW g | FN sec |
|------------------|--------------|---------------|------------------|---------------|--------------|--------------|----------|-----------|
| Check | 0 | 42 | 34 | 54.9 | 14 | 59 | 43 | 319 |
| Lorsban | 1 | 20 | 30 | 69.3 | 13 | 59 | 43 | 365 |
| Cerone | 0.5 | 17 | 30 | 53.2 | 14 | 58 | 41 | 330 |
| Lorsban + Cerone | 1 + 0.5 | 13 | 29 | 71.4 | 14 | 60 | 43 | 377 |
| Mean | | 23 | 31 | 62 | 13.73 | 59 | 43 | 348 |
| CV | | 67.54 | 4.98 | 7.72 | 2.36 | 1.62 | 2.11 | 6.23 |
| LSD | | 31.2 | 3.1 | 9.6 | 0.60 | 1.9 | 1.8 | 43.2 |
| Pr>F | | 0.2100 | 0.0314 | 0.0066 | 0.2000 | 0.2970 | 0.1723 | 0.0467 |

TWT: test weight, TKW: thousand kernel weight, FN: falling number, OWBM: orange wheat blossom midge.