Applying Fungicide at Early Flower in Durum Tyler Tjelde and Shana Pederson

Objectives

This project investigated the response to applying fungicides at early flowering stage to four durum wheat varieties. Durum acres have steadily been declining and maintaining yield and quality has become a challenge the last few years with the abnormally wet and cool conditions. The four varieties were selected to demonstrate varietal resistance and susceptibility and assess response to fungicide application.

Methods

The project was designed to compare Headline and Prosaro fungicide to four different durum varieties at early flower stage. The four varieties selected were *Carpio, Divide, Joppa,* and *Normanno*. The experimental design was a randomized complete block replicated four times. Crop management decision were set based off an 80 bushel yield goal and a planting population of 1.5 million PLS per acre. The trial was planted on May 19. All cultural practices (tillage, planting populations, herbicide, and irrigation) were the same for each treatment to minimize the effects of other variables. Fungicide application occurred on July 10 using a ground sprayer and applying 20 gallons per acre water. Application rates were 9 oz. per acre of Headline and 8.2 oz. per acre Prosaro. The durum plots were harvested August 29 using a small plot combine.

| | Carpio | | | Divide | | | Joppa | | | Normanno | | |
|------------------------------|--------|-------------|---------|--------|-------------|---------|-------|-------------|---------|----------|-------------|---------|
| Treatment | Yield | Test Weight | Protein | Yield | Test Weight | Protein | Yield | Test Weight | Protein | Yield | Test Weight | Protein |
| | bu/a | lb/bu | % | bu/a | lb/bu | % | bu/a | lb/bu | % | bu/a | lb/bu | % |
| Untreated (no fung. applied) | 65.5 | 61.1 | 16.2 | 70.5 | 60.3 | 17.2 | 69.8 | 61.0 | 16.2 | 45.2 | 53.3 | 16.3 |
| Headline | 74.1 | 61.2 | 17.4 | 70.3 | 60.0 | 17.8 | 70.2 | 61.2 | 17.2 | 59.0 | 55.9 | 16.6 |
| Prosaro | 80.8 | 61.2 | 16.8 | 77.8 | 60.3 | 17.3 | 78.3 | 61.1 | 16.8 | 67.9 | 57.8 | 16.2 |
| Headline + Prosaro | 83.6 | 61.3 | 16.6 | 75.6 | 59.9 | 17.2 | 87.3 | 61.7 | 16.1 | 70.4 | 57.1 | 16.4 |
| Mean | 76.0 | 61.2 | 16.7 | 73.6 | 60.1 | 17.4 | 76.4 | 61.3 | 16.6 | 60.6 | 56.0 | 16.4 |
| CV % | 4.5 | 0.7 | 3.3 | 7.5 | 0.7 | 1.8 | 7.7 | 0.6 | 3.2 | 6.7 | 1.7 | 3.8 |
| LSD (0.05) | 5.5 | ns | 0.9 | ns | ns | 0.5 | 9.4 | 0.6 | 0.8 | 6.5 | 1.6 | ns |
| LSD (0.10) | 4.4 | ns | 0.7 | 7.1 | ns | 0.4 | 7.6 | 0.5 | 0.7 | 5.2 | 1.3 | ns |

Conclusion

This project will be conducted again in 2015. Additional years of research are needed to fully assess the effects of fungicide applications at the early flowering stage in durum. As always remember that one year's data should always be used with caution. Though this seems to be very positive data going forward. This year's data shows that a fungicide can be very beneficial when applied to durum at the early flowering stage and will provide protection against Fusarium Head Blight (Scab). Looking at this data it emphasis the importance of selecting varieties that possess some resistance. To find this information on these varieties and others refer to page 12 (Durum varietal description).