Effect of Soybean Maturity in an MRI system

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Objective

To evaluate yield response of MRI soybeans to different maturity groups.

Background

Crop Year: 2014
Location: OSU Unger Farm
County/Town: Crawford
Soil Type: Blount/Pewamo
Drainage: Systematic
Previous Crop: Wheat (fall 2013/spring 2014)
Tillage: No – tillage
Soil Test: pH 6.1, P 65 ppm, K 194 ppm

Fertilizer:(wheat and soybeans)98-67-90
Soybean Planting Date: May 23, 14, June 4, 14
Soybean Variety: NK
Herbicide: (4/13/14) 1 pt 2-4,D, .5 oz Harmony
Post: 1 quart glyphosate
Treatment Date: May 23, 14, June 4, 14
Soybean Seeding Rate: 200,000 seeds/acre
Date of Harvest: November 3, 2014
Rainfall: 12.5 inches (from 5/11-9/1)

Methods

Pioneer 25R39 wheat was planted using a YP1225 planter on October 15, 2013 at 100 pounds per acre. 1pt 2-4,D Ester and .05 oz Harmony Extra in 10 gallons of water and 10 gallons of 28% were applied on April 13, 2014. Modified Relay Intercropping plots were planted into twin row (rows 8 inches apart with a 22 in skip) wheat on May 23, 2014 or June 4, 2014 using a custom built 3 point interseeder. In a twin row configuration so that two rows 8 inches apart ran between each set of twin row wheat.

Wheat was harvested on July 11, 2014. Post emergence weed control in the soybeans was accomplished with one application of 1 quart of glyphosate/acre, applied on July 29th. The field is systematically tiled. Treatments were NK soybeans of different maturity levels planted on May 23. All soybeans were treated with CruiserMaxx with Vibrance.

This study was arranged in a randomized complete block design replicated four times. Each plot was 10 feet wide and 45 feet long. Plots were trimmed to 40 feet in length. Plots were harvested on November 3rd using a Kincaid 8 XP small plot combine harvesting five feet of the plot and the entire 40 foot length.

Treatments

1) NK S39-U2 (MRI) Relative maturity-3.9
2) NK S29-V2 (MRI) Relative maturity-2.9
3) NK S34-U2 (MRI) Relative maturity-3.4
4) 6/4 alternate NK S35-C3 Relative maturity-3.5

Results

Table 1. Planted May 23, 2014 Soybean yield adjusted to 13.5 % moisture

Treatment	Mean yield (bu/acre)	
NKS39-U2 (MRI)	37.9	a
NK S29-V2 (MRI)	31.9	a
NK S34-U2 (MRI)	34.22	a

P>F=0.94, LSD=10; CV=18 Means with different letters are significantly different

Table 2. Planted June 4, 2014 Soybean yield adjusted to 13.5 % moisture

Treatment	Mean yield (bu/acre)	
NKS39-U2 (MRI)	34.7	a
NK S29-V2 (MRI)	28.6	b
NK S35-C3 (MRI)	36.4	a

P>F=0.049; LSD=5.8; CV=21.65 Means with different letters are significantly different

Summary

There was no difference between the 3 maturities in Table 1 with the May 23 planting date. However in Table 2 the planting date was two weeks later on June fourth. On this date maturity did make a significant difference with the 3.5 and 3.9 having significantly higher yield than the 2.9. While an early frost is a concern with longer maturities and late planting dates when frost is not early the later maturing soybeans have more time to fill pods and take advantage of late season rains.

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