Effect of Potash applied at R2/R3 on MRI Soybeans

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Objective

To evaluate yield response of MRI Soybeans to 100 pounds potash (0-0-60) applied at soybean growth stage R2/R3.

Background

Crop Year: 2014
Location: OSU Unger Farm
County/Town: Crawford
Soil Type: Blount/Pewamo
Drainage: Non-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, 2014
Soybean Variety: NK S 35-C3
Herbicide: (4/13/14) 1 pt 2-4,D, .5 oz Harmony
Post: 1 quart glyphosate
Treatment Date: August 1, 2014
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 using a custom built 3 point interseeder. A no-till counter ran directly in front of each row opener. Openers were Great Plains 10 series openers in a twin row configuration so that two rows 8 inches apart ran between each set of twin row wheat and seed flow was metered through ground drive Great Plains fluted feed cups from an 800 series drill.
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. 100 pounds of 0-0-60 per acre was spread using a hand spreader that spreads a 10 foot swath. Two trials were conducted with the only difference being that they were on opposite sides of the field.

This study was arranged in a randomized complete block design replicated four times. Each plot was 10 feet wide. Plots were harvested on November 3rd using a Kincaid 8 XP small plot combine.

Treatments

1) 100 pounds of actual 0-0-60 per acre
2) Untreated control

Results

Table 1. (Trial 1) Soybean yield adjusted to 13.5 % moisture content

Treatment	Mean yield (bu/acre)
100# 0-0-60	41.3
Control	39.2

P>F=0.36, LSD=5.4; CV=7.7

Table 2. (Trial 2) Soybean yield adjusted to 13.5 % moisture content

Treatment	Mean yield (bu/acre)
100# 0-0-60	30.6
Control	34.1

P>F=0.44, LSD=8.6; CV=15.6

Summary

There was not a significant difference between the treatment and control in soybean grain yield for either of these two trials. With the soil test being in the maintenance range no response would be expected from the added potash.

Acknowledgement

The authors express appreciation to Chuck Smith for his cooperation and aid in the planting and harvest of this trial.

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