Effect of Potash Applied at R3/R4 on Soybean Grain Yield

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Objective
To evaluate yield response of soybeans to potash applied at soybean growth stage R3/R4.

Background
Crop Year: 2013
Location: OSU Unger Farm
County: Crawford
Soil Type: Blount/Pewamo
Drainage: Systematic
Previous Crop: Corn
Tillage: No – tillage
Soil Test: pH 5.9, P 50 ppm, K 146 ppm, CEC 9.5 meq
SCN Count 1: 0 eggs per 100cc (drained)
SCN Count 2: 2920 eggs per 100cc
SCN Count 3: 1689 eggs per 100cc
Soybean Planting Date: May 16, 2013
Soybean Variety: Pioneer P93Y06
Herbicide: 3.5 oz Canopy, 1 qt Glyphosate
Herbicide (Post): 1 qt Glyphosate 2 times
Treatment Date: July 25, 2013
Soybean Seeding Rate: 168,000 seeds/acre
Date of Harvest: October 2, 2013
Rain fall: 25.57 inches (5/16-10/2)

Methods
Pioneer P93Y06 soybeans were planted at a rate of 168,000 seeds per acre on May 16th with a Great Plains 2010P, 10 inch precision drill. The following herbicides were applied on April 24; Canopy at a rate of 3.5 oz/acre with 1 quart/acre glyphosate. Postemergence weed control was accomplished with two applications of 1 quart of glyphosate/acre, applied on June 18 and July 22.

This study used a randomized complete block design with two treatments replicated 3 times to compare the treatment yield effect of 150 lbs K2O/acre applied on soybeans at R3/R4 and a control of no potash applied. Plots were treated on July 25 with a broadcast spreader. Each plot was 10 feet wide and 40 feet long. Plots were trimmed to 35 feet in length. Plots were harvested using a Hege 140 small plot combine harvesting the center five feet of the plot and the entire 35 foot length.

Treatments
1) 150 lbs/acre 0-0-60
2) Control (no potash applied)
Results

Table 1. Soybean grain yield adjusted to 13.5% moisture

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Mean yield (bu/acre)</th>
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<tbody>
<tr>
<td>150 lbs/ac 0-0-60</td>
<td>51.6</td>
</tr>
<tr>
<td>Control</td>
<td>52.2</td>
</tr>
<tr>
<td>F=.02, NS; P&gt;F=.89, LSD=10.9, CV=13.7</td>
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Summary

There was no treatment effect. The cost of the potash at time of application was $470.00/ton or $35.25 for the 150lb/acre rate. The soil test level (at a CEC of 9.5 meq and K at 146 ppm) was above the critical soil test level.

Acknowledgement

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

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