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

Jason Hartschuh, OSU Extension Crawford Country, Agricultural and Natural Resources Program Coordinator
Steve Prochaska, Ohio State University Extension Field Specialist, Agronomic Crops

Objective

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

Background

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

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 K_2O/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

Treatment	Mean yield (bu/acre)
150 lbs/ac 0-0-60	51.6
Control	52.2

F=.02, NS; P>F=.89, LSD=10.9, CV=13.7

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.

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For more information, contact:
Name: Steve Prochaska
Address: 222 W. Center St.
Marion, Ohio 43302
prochaska.1@osu.edu

For more information, contact:
Name: Jason Hartschuh
Address: 112 East Mansfield Street
Suite 303
Bucyrus, Ohio 44820
hartschuh.11@osu.edu