

Effect of Urea Applied on R3 Soybeans in a Modified Relay Intercrop System

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Objective

To evaluate grain yield response of modified relay intercropped (MRI) soybeans to urea applied at soybean growth stage R3.

Background

Crop Year:	2013	Row width:	10 inches
Location:	OSU Unger Farm	Fertilizer (lbs N-P-K):	95-58-78
County/Town:	Crawford	Soybean Planting Date:	June 5, 2013
Soil Type:	Blount/Pewamo (silty clay)	Soybean Variety:	Pioneer P93Y24
Drainage:	Systematic	Seeding Rate:	225,000 seeds/acre
Previous Crop:	Wheat	Herbicide (Post):	1 qt glyphosate (7/22)
Tillage:	No – tillage	Treatment Dates:	August 14, 2013
Soil Test:	pH 6.2, P 34 ppm, K 152 ppm	Date of Harvest:	October 29, 2013
SCN Count:	(MRI area) 1160 eggs/100cc	Rain fall:	25.57 inches (5/16-10/2)

Methods

Soybeans were interseeded into standing wheat with 10 inch row spacing on June 5, 2103 with a Great Plains 2010P precision drill mounted on a 3 point hitch with lift assist wheels. Pioneer P93Y24 were planted at a rate of 225,000 seeds per acre. Wheat was harvested on July12, 2013. Wheat averaged 70 bushel per acre in the field. An application of 1 quart of glyphosate was applied on July 22.

This study used a randomized complete block design with treatments replicated 4 times to compare the treatment yield effect of urea at 32 pounds nitrogen/acre and a control (no nitrogen applied). Plots were treated on August 14, 2013 with urea utilizing a broadcast spreader, when soybeans were in the R3 growth stage by broadcasting urea at a rate of 32 lbs. actual nitrogen per acre. Plots were 10 by 44. Plots were harvested on October 29, 2013 using a Kincaid 8-XP small plot combine harvesting the center five feet of each plot.

Treatment 1

- 1) Urea at 32 lbs nitrogen/acre
- 2) Control (no nitrogen)

Results

Table 1. Yield of MRI soybeans (adjusted to 13% moisture)

<u>Treatment</u>	<u>Mean yield (bu/acre)</u>
Urea	54.3
Control	54.2

F=0, NS; CV =7.99

Summary

This study was conducted at OSU Unger Farm in north central Ohio where Modified Relay Intercropping (MRI) is practiced. This trial was conducted to determine if there is a yield response to added nitrogen. In 2013, there was not a significant difference in soybean yield observed between the urea application (added nitrogen) and the control.

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