Nebraska On-Farm Research Network

Pre-emergence vs. Sidedress Nitrogen at Two Rates-corn

Study ID: 097155199301
Saunders County

OBJECTIVE: To determine and document the effect on profitability of nitrogen application timing at two rates on corn.

HIGH RATE

Treatment:

Fertilize: 28% Nitrogen at 571 pounds/acre and 10-34-0 at 55 pounds/acre (160 pounds Nitrogen/acre) Pre-plant and Sidedress

Herbicide: .75 pints 2,4-D, .8 gallon Bullet and 1 pint BuctriV Atrazine

Insecticide: 3 pints/acre Penncap

Planting

Cultivate

Harvest

Costs:	1993
Fertilizer	$29.79/acre
Comparative cost	$29.79/acre

LOW RATE

Treatment:

Fertilize: 28% Nitrogen at 393 pounds/acre and 10-34-0 at 55 pounds/acre (110 pounds Nitrogen/acre) Pre-plant and Sidedress

Herbicide: .75 pints 2,4-D, .8 gallon Bullet and 1 pint BuctriV Atrazine

Insecticide: 3 pints/acre Penncap

Planting

Cultivate

Harvest

Costs:	1993
Fertilizer	$22.20/acre
Comparative cost	$22.20/acre

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RESULTS:

	Early population	Final Population	Population loss
High Preplant	30,400	27,600	9.2%
High Sidedress	. 30,800	28,100	8.8%
Low Preplant	30,100	28,800	4.3%
Low Sidedress	30,100	28,300	6.0%

Leaf Rating (Number of green leaves below ear-leaf on August 20, 1993)

High Preplant :	2.35 **, ***
High Sidedress	3.39 **, ***
Low Preplant	2.78 **, ***
Low Sidedress	3.20 **, ***

	Moisture	Test weight	Yield (15.5%)
High Preplant	21.1% **	55.5 **	131.2 ***
High Sidedress	24.1% **	53.4 **	136.0 ***
Low Preplant	21.1% **	55.3 **	126.5 ***
Low Sidedress	23.6% **	53.2 **	118.8 ***

* significantly different at 95% confidence level
** timing significantly different at 99% confidence level
*** timing and rate interaction significant at the 99% confidence level

Summary: Grain yield was significantly higher where higher nitrogen rates were applied. Time of application did not significantly influence grain yield; but, it did affect plant color, grain moisture and test weight. High rate nitrogen costs were approximately $7.50/acre more than the low nitrogen rate.

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