Nebraska On-Farm Research Network

Years:	2013
Title:	Nitrogen Fertilizer Rate
Crop:	Corn
County:	Saunders
Study ID:	062155201301
Objective:	To determine and document the effect of nitrogen rate on the profitability of corn production.
Treatments:	UNL Rate + 35# UNL Rate + 70#

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	~~The UNL Corn Nitrogen Calculator for Nebraska~~				Revision Date:			
	Farm:				04/01/08			
	Agronomist:							
	Date:							
	Enter N management programs to consider	**Time of application**	**Proportion** % of total N	**N source for each**	**N content** %	**Price** $/ton	**Appl. cost** $/acre	
	Split	Fall	72	1 AA	82	$710	$15.00	
	change names in boxes	Pre-plant & starter			0			
		Sidedress	28	5 UAN 32	32	$440	$12.00	
		Fertigation			0			
	Pre-plant	Fall			0			
		Pre-plant & starter			0			
		Sidedress			0			
	Error: sum not 100%	Fertigation			0			
	Fall	Fall			0			
		Pre-plant & starter			0			
		Sidedress			0			
	Error: sum not 100%	Fertigation			0			

Enter short names in the column headers below (#1 to #4)

	Enter field-specific information in columns E to H			**1 Example**	**#2**	**#3**	**#4**
1	Yield goal	5-yr avg. yield + 5-10%	bu/acre	160			
2	Soil texture			Med./Fine			
3	Soil organic matter (OM)	in 0-8" depth	%	2.9			
4	Soil test nitrate-N	Effective rooting depth	inches	48			
		Soil layers sampled	no.	0 None			
		Layer 1 bottom	inches				
		Layer 2 bottom	inches				
	select nitrate unit in box	Layer 3 bottom	inches				
	ppm	Layer 1 nitrate	ppm				
		Layer 2 nitrate	ppm				
		Layer 3 nitrate	ppm				
5	Previous crop			02 Soybean			
6	Irrigation	Water amount	inches				
		Water nitrate-N	ppm				
7	Manure	Type					
		Terms (unit for application)					
		Amount (tons or 1000 gal/acre)					
		Ammonium N	lb/unit				
		Organic N	lb/unit				
		Year applied					
		Application method					
8	Nitrogen management program			1 Split			
9	Expected corn value		$/bu	$6.00			
#	N applied since harvest		lb/acre				
	do not enter anything below						
	UNL N recommendation		**Unit**	**1 Example**	**#2**	**#3**	**#4**
A	N algorithm components	Crop N requirement	lb/acre	227	Yield goal?	Yield goal?	Yield goal?
		SOM credit	lb/acre	65	OM?	OM?	OM?
		Soil nitrate-N credit	lb/acre	30	Depth?	Depth?	Depth?
		Legume N credit	lb/acre	45	Prev. crop?	Prev. crop?	Prev. crop?
		Irrigation N credit	lb/acre	Water?	Water?	Water?	Water?
		Manure N credit	lb/acre	Manure?	Manure?	Manure?	Manure?
B	**Recom. N amount (unadjusted)**		**lb/acre**	**87**	**#VALUE!**	**#VALUE!**	**#VALUE!**
C	Average nitrogen price		$/lb N	$0.50	N progr.?	N progr.?	N progr.?
D	Corn price : N price ratio			11.9	Corn price?	Corn price?	Corn price?
E	**Recom. N amount (adjusted for time and prices)**		**lb/acre**	**107**	**#N/A**	**#N/A**	**#N/A**
F	Total N application cost		$/acre	$27.0	#N/A	#N/A	#N/A
G	Total cost of N fertilizer + N application		$/acre	$80.8	#N/A	#N/A	#N/A

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Information: 2013

No-Till Planted Pioneer 1324 @ 28k on 5/11/13

Tomek Silty Clay Loam - Todd Valley

32% N Applied @35# & 70# on 6-18-13 V5 corn. Cost $0.64/# N

Anhydrous 90# Fall 2012 $0.47/# N

11-52-0 - 100# Fall 2012

Corn appeared uneven and lacked good color prior to sidedress.

Cost of Application: $8.57/acre

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Results: 2013 Corn - Nitrogen Rate

	Yield	Cost/A
35# N/ac. Sidedress	183.1 B	$22.40
70# N/ac. Sidedress	187.7 A	$44.80
Prob>/T/	0.0012***	

SUMMARY:
The application of 70# N/ac versus the 35# rate resulted in a highly significant yield increase. The extra cost of the nitrogen with $5.00 per bushel corn price results in a zero net gain. However, at $6.00 per bushel corn, the grower would have netted an extra $5 per acre.

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