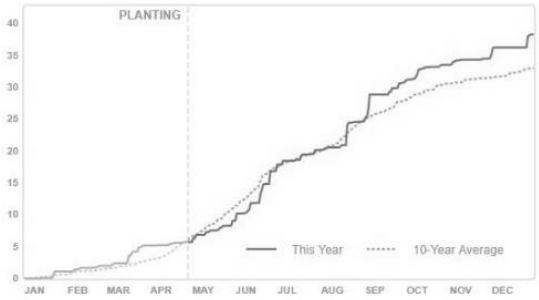
Comparison of Starter Fertilizers on Irrigated Corn

Study ID: 0819053201802
County: Dodge
Soil Type: Luton silty clay occasionally flooded; Gibbon silty clay loam occasionally flooded
Planting Date: 4/28/18
Harvest Date: 11/1/18
Population: 32,000
Row Spacing (in): 30
Hybrid: Pioneer® P1379
Reps: 8
Previous Crop: Soybean
Tillage: Fall Turbo Tilled
Herbicides: ***Post:*** 2.5 qt/ac Resicore® and 1 pt/ac Atrazine applied with fertilizer on 5/1/18
Seed Treatment: None

Foliar Insecticides: None
Foliar Fungicides: None
Fertilizer: 125 lb/ac N from 32% UAN broadcast on 5/1/18
Irrigation: Pivot, Total: 5"
Rainfall (in):



Soil Test (1993-1994, last available soil test. New samples will be taken as soon as is feasible.)

Sample*	pH	Excess Lime	BpH	OM%	Bray P1	Olson P†	K	Zn
					----------ppm----------			
1	7.7	Very High	-	3.8	0.9	3.6	189	0.63
2	8.1	Very High	-	4.3	0.6	3.4	131	-
3	5.8	-	6.5	3.6	32	-	281	1.18
4	6.6	-	-	3.6	25	-	298	0.91
5	6.5	-	-	3.6	28	-	311	0.98

*Samples one through five represent zones of the field moving from north to south with one in the north and five in the south.
†Olson P was completed for samples with excess lime.

Introduction: The objective of this study was to evaluate starter fertilizer rates and placements on a high pH soil. 5 gal/ac 10-34-0 fertilizer applied in-furrow was compared to 12 gal/ac 10-34-0 fertilizer applied in a 2x2 placement (2" to the side and 2" deep). Aerial multispectral imagery was obtained for the field during the growing season. The normalized difference vegetative index (NDVI) values are presented for June 29 and July 10. The NDVI imagery from July 10 is shown in Figure 1.

Results:

	NDVI June 29	NDVI July 10	Moisture (%)	Yield† (bu/ac)	Marginal Net Return‡ ($/ac)
5 gal/ac 10-34-0 in-furrow	-0.306 B	0.190 B	14.4 A*	174 B	547.91 A
12 gal/ac 10-34-0 2x2	-0.305 A	0.196 A	14.6 A	187 A	574.56 A
P-Value	0.093	0.002	0.170	0.020	0.114

*Values with the same letter are not significantly different at a 90% confidence level.
†Yield values are from cleaned yield monitor data. Bushels per acre adjusted to 15.5% moisture.
‡Marginal net return based on $3.23/bu corn, $12.50/ac for 5 gal/ac 10-34-0, and $30/ac for 12 gal/ac 10-34-0.

Summary:

- The 12 gal/ac 10-34-0 placed in 2x2 had higher NDVI values on June 29 and July 10.
- The 12 gal/ac 10-34-0 placed in 2x2 resulted in a higher yield than the 5 gal/ac 10-34-0 placed in-furrow.
- There was no significant difference in marginal net return.

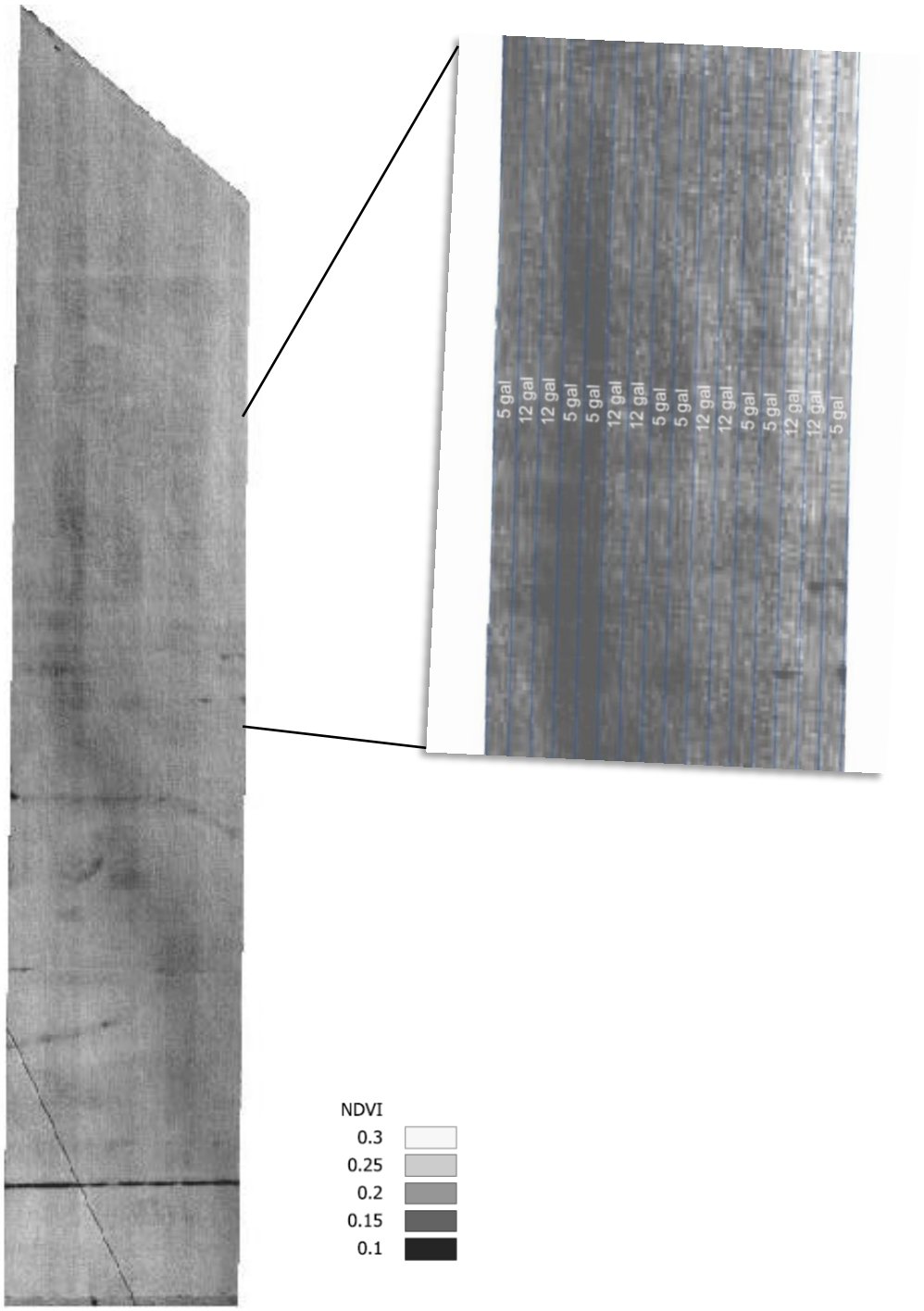


Figure 1. Normalized difference vegetative index (NDVI) from July 10, 2018, for 5 gal/ac 10-34-0 in-furrow and 12 gal/ac 10-34-0 with 2x2 placement.

Sponsored by: University of Nebraska Lincoln

In Partnership with: Nebraska Corn Board; Nebraska Soybean Checkoff; Nebraska Corn Growers Association; Nebraska Dry Bean Commission

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