Corn performance with starter fertilizer, Carrington, 2015.
(Greg Endres and Mike Ostlie)

A field study continued at the NDSU Carrington Research Extension Center to examine the performance of corn with starter fertilizer and side-dressing N. Experimental design was a randomized complete block with four replications. The trial was established on conventionally tilled, Heimdal-Emrick loam soil with 3.1% organic matter, 8.0-8.1 pH (0-24" soil depth), 3 ppm (very low) phosphorus, 157 ppm potassium and 0.37 ppm zinc. Soil nitrogen totaled 150 lb/A from 30 lb/A soil residual nitrate-N plus 120 lb/A from urea fertilizer applied and incorporated April 14. Preplant incorporated 10-34-0 liquid fertilizer was applied as a broadcast treatment on April 17. DeKalb 'DKC33-78 RIB' (83 day relative maturity) Roundup Ready corn was planted with a John Deere 71 4-row flex planter on May 13 in 30-inch rows, and included treatments of 10-34-0 and 6-24-6 liquid fertilizer applied in-furrow and/or in a 2x0" band. UAN at 50 lb N/A was applied by coulter injection on June 29 at the V6 corn stage to 2 of 4 trial replications. Chelated zinc at 1 quart/A was foliar applied on July 10 at the V7-8 corn stage across the trial. Grain was harvested with a plot combine on October 26.

Time from planting to plant emerging and silk stage was similar among treatments including the untreated check (Table). Plant stand tended to be or was reduced with in-furrow fertilizer compared to the untreated check. Grain yield generally tended to improve with fertilizer compared to the untreated check. Corn yield with side-dressed N (140.5 bu/A) was similar [LSD (0.05): NS] to the untreated check (141.3 bu/A).

Table. Corn response to starter fertilizer, Carrington, 2015.

Treatment			Plant			Seed	
Liquid fertilizer	Rate	Application method	Emerge[a]	Silk	Stand (June 8)	Yield	Test weight
	gpa		Jday		plt/A	bu/A	lb/bu
untreated check	x	x	149	207	34,200	139.4	58.2
10-34-0	9	broadcast	149	207	34,860	142.2	58.1
10-34-0	6	2x0" band	149	207	36,190	141.6	58.6
10-34-0	6	in-furrow	149	207	32,540	141.1	58.2
10-34-0	3 plus 3	band plus in-furrow	149	207	28,890	143.9	58.4
10-34-0	3	in-furrow	149	207	29,220	144.6	58.3
6-24-6	4.5	in-furrow	149	207	32,540	135.0	58.0
LSD (0.05)			NS	NS	4,730	NS	NS
mean			149	207	32,630	141.1	58.3
CV (%)			0.0	0.0	9.8	5.0	0.7

[a]Jday: 149=May 29; 207=July 26.