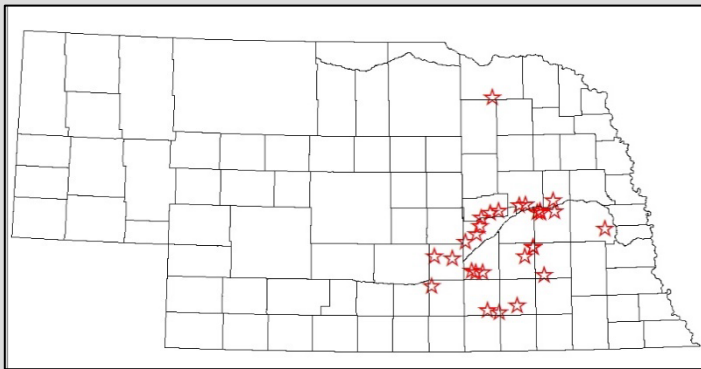


Positive results were again achieved in the second growing season for Project SENSE. Five NRDs are active partners in the project along with the Nebraska Corn Board and USDA. John Parrish, the research technologist, and a new graduate student, Joel Crowther, helped to coordinate field activities, working closely with grower participants. The Hagie high-clearance applicator received a new rate controller in April 2016, a pulse-width modulation system from Capstan. Additional data collection on several sites included soil mapping with a Veris MSP3 as well as soil moisture monitoring with Watermark sensors. A total of 19 field sites were implemented in 2016, giving a total of 36 studies for the project (see map below).



### Field Days

Field Days were held in each NRD during the summer. The Central Platte NRD field day was held July 27<sup>th</sup> at Arnie Hinkson's farm near Cairo, NE. Total attendance for the evening meeting was 28 growers and advisors representing 18,471 acres. Participants rated the value of knowledge gained at \$4.33/acre.



Experimental plots were randomized and replicated field-length strips designed to compare the grower's standard N management practice to canopy sensor-based management.

**88%**

Reported moderate to significant improvement in knowledge of principles of canopy sensors to direct in-season nitrogen.

**33%**

Indicated they somewhat or strongly agreed that they would like local agribusinesses to provide sensor-based in-season nitrogen application services.

**33%**

Either somewhat or strongly agreed that they are likely to adopt sensor-based in-season N application.

### On-Farm Research Results Update Meetings

Results from 2016 were presented at 4 locations across the state in February to 200 attendees.

### 2016 Research Results

Over all sites, the crop canopy sensor management saved 34 lb N/ac and resulted in a 3 bu/ac yield reduction. Using prices of \$0.45/lb N and \$3.05/bu corn, sensor-based management resulted in a marginal net return \$7.04/ac greater than the grower management. Detailed results are at right. Additional project information can be found at [cropwatch.unl.edu/projectsense](http://cropwatch.unl.edu/projectsense).

	N Strategy	N Rate (lb/ac)	Yield (bu/ac)	PFP <sub>N</sub> (lb grain/lb N)	Lb N/bu	Marginal Net Return (\$/ac)
CP Grower 1	Sense	133	235	99*	0.57*	655.53*
	Producer	160	234	82	0.68	640.97
CP Grower 2	Sense	171	211	69*	0.81*	565.03*
	Producer	140	212	85	0.67	584.23
CP Grower 3	Sense	194	173*	51*	1.12*	440.27*
	Producer	225	150	37	1.50	355.78
CP Grower 4	Sense	213	198*	52*	1.08*	507.47*
	Producer	280	210	42	1.33	514.23
CP NRD Avg	Sense	178	204*	68*	0.89*	542.08*
	Producer	201	201	62	1.04	523.80
All Sites Avg	Sense	155*	199*	75*	0.79*	537.48*
	Producer	189	202	63	0.95	530.44

\*For yield, PFP<sub>N</sub>, lb N/bu, and profit, indicates the values are significantly different at a 95% confidence level.