

Table 1. Linear regression statistics for fit and significance for nitrogen (N) rate and yield, N rate recommended by Adapt-N, difference between the Adapt-N N rate and the farmer rate, difference in RTN (return to nitrogen) between various rates, and the change in partial factor productivity between the Adapt-N rate and farmer rate for 3 of 45 fields with no response to N (linear regression was not significant at P = 0.10 for N rates of 100, 150, 200 and 250 lbs/acre). RTN comparisons completed using \$4.00/bushel corn and \$0.40/lb N prices. The average yield for all treatments was used to calculate yield and RTN comparisons.

Field	Regression fit and significance			Adapt-N N rate	Farmer N rate	Difference (Farmer N rate minus Adapt-N rate) ¹	Difference (Farmer yield minus Adapt-N yield)	Difference (Farmer N Rate RTN minus Adapt-N Rate RTN)	Difference (0 lb or 100 lb RTN minus Adapt-N Rate RTN) ²	Difference (0 lb or 100 lb RTN minus Farmer Rate RTN)	Change in Partial Factor Productivity ³
	Adj. R2	slope	p								
23CB008	-0.07	0.005	ns	170	140	-30	0	12	68(28)	56(16)	-18
23CB009*	-0.03	0.057	ns	100	50	-50	0	20	40(0)	20(-20)	-50
23CB006	-0.01	0.036	ns	69	150	81	0	-32	28(-12)	60(20)	117
Mean	-	-	-	113	113	0	0	0	45(5)	45(5)	16

¹ Positive values in columns where a difference is calculated indicate the Farmer treatment had a greater N rate, yield, or RTN than the Adapt-N treatment.

² Values in parenthesis are for the 100 lb N rate.

³ Partial factor productivity = (Adapt-N rate NUE - Farmer rate NUE) / (Farmer rate NUE) X 100. NUE = (yield in pounds / acre) / (applied N in lbs / acre).

Table 2. Quadratic regression statistics for fit and significance for nitrogen (N) rate and yield, agronomic optimal N rate (AONR) and economic optimal N rate (EONR) calculated from the regression, N rate recommended by Adapt-N, difference between the Adapt-N rate and the farmer rate, difference in RTN (return to nitrogen) between various rates, and change in partial factor productivity between the Adapt-N rate and farmer rate for 27 of 45 fields that showed a response to N (quadratic regression was significant at P = 0.10 for N rates of 100, 150, 200 and 250 lbs/acre). RTN comparisons completed using \$4.00/bushel corn and \$0.40/lb N prices.

Field	Regression fit and significance		EONR	AONR	Adapt-N rate	Farmer N rate	Difference (Farmer N rate minus Adapt-N rate) ¹	Difference (Farmer yield minus Adapt-N yield)	Difference (Farmer Rate RTN minus Adapt-N Rate RTN)	Difference (Adapt-N rate RTN minus EONR RTN) ²	Difference (Farmer rate RTN minus EONR RTN)	Change in Partial Factor Productivity ³
	Adj. R ²	p										
07NA002	0.92	< 0.001	206	210	144	184	40	44	159	-182	-23	-4
07NA003	0.81	< 0.001	209	218	83	173	90	91	328	-357	-29	28
09OT001	0.56	0.002	210	229	182	167	-15	-4	-11	-8	-19	-6
09OT002*	0.82	< 0.001	111	125	45	80	35	15	46	-59	-13	61
10MC001	0.69	< 0.001	145	241	119	199	80	7	-5	-1	-6	62
10MC002	0.72	< 0.001	218	224	196	226	30	6	13	-15	-2	11
10MC003	0.70	< 0.001	203	227	130	190	60	17	43	-45	-1	31
13DA001	0.69	< 0.001	187	219	130	137	7	2	5	-21	-16	4
14GK003*	0.71	< 0.001	217	230	160	240	80	19	42	-49	-7	38
14GK005*	0.74	< 0.001	187	206	235	230	-5	0	2	-15	-13	-2
14GK006	0.82	< 0.001	206	219	120	175	55	30	100	-114	-15	27
16HA001	0.76	< 0.001	238	276	105	225	120	36	94	-95	-1	69
16HA002	0.73	< 0.001	248	268	100	190	90	56	186	-220	-34	13
16HA003	0.94	< 0.001	217	236	145	200	55	19	54	-57	-3	26
16HA004	0.45	0.008	250	279	96	196	100	46	142	-162	-20	45
16HA005	0.93	< 0.001	202	225	90	210	120	39	109	-109	-1	89
19EX001	0.51	0.004	191	230	106	147	41	11	27	-37	-10	32
19EX003	0.86	< 0.001	201	223	153	144	-9	-3	-8	-21	-29	-5
21CN002	0.69	< 0.001	217	231	170	152	-18	-9	-27	-30	-57	-7
23CB004	0.88	< 0.001	197	215	121	136	15	7	22	-62	-40	9
24SS001	0.67	< 0.001	210	250	163	203	40	7	11	-11	0	21
24SS002	0.90	< 0.001	202	214	157	150	-7	-3	-11	-32	-43	-3
26FF002	0.81	< 0.001	211	227	150	185	35	13	40	-49	-9	15
26FF005	0.25	0.060	175	186	105	170	65	28	85	-85	0	38
26FF006	0.65	< 0.001	208	237	142	185	43	11	27	-30	-4	23
27AN001	0.82	0.000	97	116	69	80	11	2	5	-8	-3	15
ILLB001	0.62	< 0.001	211	241	99	200	101	30	82	-82	-1	80
Mean	-	-	-	-	130	177	47	19	58	-72	-15	26
SD	-	-	-	-	40	39	41	22	76	78	15	26
Median	-	-	-	-	130	185	41	13	40	-49	-10	23

¹ Positive values in columns where a difference is calculated for the Farmer treatment indicate the Farmer treatment had a greater N rate, yield, or RTN than the Adapt-N treatment.

² Positive values in this column indicate the Adapt-N RTN was greater than the EONR RTN.

³ Partial factor productivity = (Adapt-N rate NUE - Farmer rate NUE) / (Farmer rate NUE) X 100. NUE = (yield in pounds / acre) / (applied N in lbs / acre).

Table 3. Quadratic regression statistics for fit and significance for nitrogen (N) rate and yield, agronomically optimal N rate (AONR), maximum N applied in the field trial, N rate recommended by Adapt-N, difference between the Adapt-N N rate and the farmer rate, difference in RTN (return to nitrogen) between the Adapt-N rate and farmer rate, and the change in partial factor productivity between the Adapt-N rate and farmer rate for 15 of 45 fields where N rates of 100, 150, 200 and 250 lbs/acre were applied and the AONR was greater than the highest trial N rate. RTN comparisons completed using \$4.00/bushel corn and \$0.40/lb N prices.

Field	Regression fit and significance		AONR	Maximum trial rate	Adapt-N rate	Farmer N rate	Difference (Farmer N rate minus Adapt-N N rate) ²	Difference (Farmer yield minus Adapt-N yield)	Difference (Farmer Rate RTN minus Adapt-N Rate RTN)	Change in Partial Factor Productivity ³
	Adj. R ²	p								
04PA002	0.95	<0.001	273	248	123	175	52	28	91	21
05GR001	0.82	<0.001	310	251	112	165	53	22	65	29
05GR002	0.74	<0.001	256	250	150	185	35	7	13	20
05GR003	0.97	<0.001	278	250	144	179	35	22	73	12
07NA001	0.86	<0.001	257	234	131	224	93	29	77	41
07NA004	0.94	<0.001	399	248	135	226	91	59	199	15
08MA001	0.93	<0.001	321	239	185	180	-5	-2	-8	-1
21CN001*	0.87	<0.001	157	140	178	140	-38	1	18	-22
23CB005	0.77	<0.001	273	250	160	147	-13	-3	-8	-6
23CB007	0.91	<0.001	301	250	125	150	25	8	23	16
26FF004	0.84	<0.001	158	150	65	110	45	22	71	46
ILLB002 ¹	0.59	<0.001	NA	250	109	200	91	11	9	75
02MO001 ¹	0.52	<0.001	NA	250	182	232	50	13	34	20
04PA001 ¹	0.23	<0.1	NA	255	118	140	22	2	0	17
21CN003 ¹	0.18	<0.1	NA	250	180	190	10	1	-1	5
Mean	-	-	-	-	140	176	36	15	44	19
SD	-	-	-	-	32	34	37	16	53	22
Median	-	-	-	-	135	179	35	11	23	17

¹ The quadratic model was not significant but the linear model was; reported R² and p value are from the linear model. NA = not applicable because AONR cannot be calculated with a linear model.

² Positive values in columns where a difference is calculated for the Farmer treatment indicate the Farmer treatment had a greater N rate, yield or RTN than the NMT treatment.