

Table 1. Grain crop performance in Neely-Kinyon LTAR, 2009.^y

Rotation ^z	Corn				Soybean		Oat		Wheat		Alfalfa
	Yield bu/acre	Population plants/acre	LSNT $\mu\text{g}\cdot\text{g}^{-1}$ N-NO ₃	Stalk nitrate (ppm)	Yield bu/acre	Population plants/acre	Yield bu/acre	Straw tons/acre	Yield bu/acre	Straw tons/acre	Yield (tons/acre)
Conv. C-S	211.07a	27,000	2.175	956.88	57.56ab	135,833a	N/A	N/A	N/A	N/A	N/A
Org. C-S-O/A	197.79ab	29,667	2.388	936.00	65.21a	87,417b	71.81	1.032	N/A	N/A	N/A
Org. C-S-O/A-A	194.23b	28,667	2.612	397.00	66.07a	81,667b	73.62	1.239	N/A	N/A	3.87
Org. S-W	N/A	N/A	2.612	N/A	48.35b	50,417c	N/A	N/A	8.85	1.34	N/A
LSD _{0.05}	8.08	NS	NS	NS	5.30	13,051	NS	NS	N/A	N/A	N/A

^zC = corn, s = soybean, O = oat, and A = alfalfa.

^yMeans within a column are not significantly different (NS), or significantly different at $P \leq 0.05$ (Fisher's protected LSD test).

Table 2. Weed and insect populations in Neely-Kinyon LTAR, 2009.^z

Rotation	Corn					Soybeans					
	June 11-16, 2009 (weeds/sq. meter)		July 14, 2009 (weeds/sq. meter)		Corn borer damage (%)	June 11-16, 2009 (weeds/sq. meter)		July 17-22, 2009 (weeds/sq. meter)		Stained soybeans (%)	Soybean cyst nematode (eggs per 100cc)
	Grass	Broadleaves	Grass	Broadleaves		Grass	Broadleaves	Grass	Broadleaves		
Conv. C-S	2.00	5.50b	4.67b	1.75b	0.00	0.00b	1.25b	0.750b	1.33	0.80	37.50
Org. C-S-O/A	8.25	16.75a	1.08ab	3.583a	0.00	32.42a	29.86a	11.083a	2.417	0.83	0.00
Org. C-S-O/A-A	9.22	4.67b	3.00a	3.78b	0.00	43.00a	22.33a	9.250ab	2.167	0.60	0.00
Org. S-W	N/A	N/A	N/A	N/A	0.00	18.83ab	16.17ab	11.250a	3.167	3.30	0.00
LSD _{0.05}	NS	6.57	2.78	2.85	NS	17.15	11.75	6.52	NS	NS	NS

^zMeans within a column are not significantly different (NS), or significantly different at $P \leq 0.05$ (Fisher's protected LSD test).

Table 3. Grain quality in Neely-Kinyon LTAR, 2009.^z

Rotation	Corn					Soybean				
	Density	Starch	Oil	Protein	Moisture	Carbohydrates	Fiber	Oil	Protein	Moisture
Conv. C-S	1.24	60.90	4.02	8.25	29.40	23.82	4.85	18.65	34.68	16.15b
Org. C-S-O/A	1.23	61.23	3.88	8.45	31.95	24.20	4.88	18.68	34.25	17.12ab
Org. C-S-O/A-A	1.25	61.70	4.32	8.63	30.98	24.30	4.90	18.60	34.22	16.45b
Org. S-W	N/A	N/A	N/A	N/A	N/A	23.55	4.80	18.40	35.25	19.05a
LSD _{0.05}	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.64

^zMeans within a column are not significantly different (NS), or significantly different at $P \leq 0.05$ (Fisher's protected LSD test).