Soil chemical properties at planting

Treatment	Total N	P	S	K	Zn	Mg	Ca	pH	CEC	Organic matter	EC (dS/m)
Sum-CT	8.2	28.3	19.0	157.6	1.8	479.4	7,851	7.6	38.2	5.0	0.4
No Sum-CT	10.9	26.3	21.9	158.2	1.6	460.6	8,330	7.6	37.3	5.0	0.4
Sum-NT	9.3	30.7	10.7	186.8	3.0	499.4	5,644	7.4	29.5	5.9	0.3
No Sum-NT	9.2	35.5	12.1	166.0	3.3	443.7	7,315	7.6	36.1	5.4	0.4

Soil chemical properties at the end of the season

Treatment	Concentration in ppm							pH	CEC	Organic matter
	Total N	P	S	K	Zn	Mg	Ca			
Sum-CT	6.7^{ns}	23.3^{ns}	12.8^{ns}	148.1^{ns}	1.5^{ns}	438.8^{ns}	6,879^{ns}	7.6^{ns}	33.8^{ns}	4.1^{ns}
No Sum-CT	7.5	23.9	48.1	102.4	1.8	622.9	14,625	7.7	41.0	5.1
Sum-NT	7.2	29.5	23.2	128.2	2.8	499.8	10,366	7.7	38.5	5.9
No Sum-NT	6.3	40.0	23.7	155.7	2.2	501.6	8,131	6.9	31.9	4.8

Mean separation using least significant difference method ($P \leq 0.05$).
ns= no significant difference.

Treatment	Cereal rye biomass	
	in kg	in lbs
Sample 1	3,463	7,618
Sample 2	3,345	7,360

*Cereal rye biomass on dry weight basis. Data collected using two 0.25 m^2 quadrats per treatment. Each treatment has four replications.
Mean separation using least significant difference method (P≤0.05).
ns= no significant difference.

Plant biomass, SPAD and root nodule count (mid-season)

Treatment	Plant biomass* (per plant; g)	SPAD	Nodule count per plant
Sum-CT	16.5ab	42.3a	31.5^{ns}
No Sum-CT	22.5a	38.9ab	54.7
Sum-NT	10.8bc	35.7b	36.3
No-Sum-NT	8.8c	37.6b	32.0

*Plant biomass on dry weight basis. SPAD data collected from five plants with five data points on each plant.
Mean separation using least significant difference method (P≤0.05).
ns= no significant difference.

Treatment	Yield (bu/acre)
Sum-CT	59.0^{ns}
No Sum-CT	55.5
Sum-NT	56.0
No-Sum-NT	56.5

Mean separation using least significant difference method (P≤0.05).
ns= no significant difference.