

Nitrogen Management for Dryland Barley

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A study was established to evaluate the response of barley to nitrogen (N) rates and N source. The N rates were 0, 30, 60, 90, and 120 lbs. N/ac. The N sources were urea and polymer-coated urea. The polymer-coated urea was Nutrisphere-N (Simplot). The trial area was flooded for an extended period of time in early spring. Soil sampled May 4 indicated 1 lb. N/ac in the top 6 inches of soil, 9 lbs. in the 6- to 24-inch soil zone, and 44 lbs. in the 24- to 48-inch soil zone. The previous crop was soybean. The N was broadcast applied and incorporated on May 6, 2009. 'Pinnacle' barley was planted May 7 at a seeding rate of 1.2 million pure live seeds per acre. The trial was harvested August 24.

The N source did not affect any of the parameters measured. When averaged over N source, plant height and grain protein increased as the N rate increased (Table). Grain yield increased as the N rate increased to the 60 lb/ac rate then leveled off. Soil samples were taken from the 0 and 90 lbs./ac plots after harvest. Test results indicated 24 lbs. N/ac in the untreated plots and 33 lbs. N/ac when 90 lbs. N/ac was applied (LSD=8).

Table. Barley response to nitrogen rates.

Nitrogen Rate	Lodge	Plant Height	Plump >6/64	Thin <5/64	Test Weight	Grain Protein	Grain Yield
lb/ac	0-9	inch	%	%	lb/bu	%	bu/ac
0	0	23.2	96.8	1.5	45.8	10.9	74.5
30	0	25.1	97.9	1.4	46.0	10.9	87.7
60	0	28.1	97.4	1.7	46.4	10.8	98.2
90	0	28.0	97.3	1.7	46.0	11.1	98.9
120	0	30.0	97.0	1.9	46.3	11.4	97.5
LSD	NS	2.3	NS	NS	NS	0.3	8.7