

**Nitrogen Sources and Rates for Late-Planted No-Till  
Wheat Following Corn or Full-Season Soybean  
John H. Grove, Agronomy Department**

**Research Objective:**

Determine whether the optimal N fertilizer rate will differ among several N sources for late planted no-till wheat following corn or full-season soybean.

**Method:**

Location	Fayette	County/Spindletop
Soil Type and Drainage		Loradale silt loam - well drained
Previous Crops		Soybean Corn
Tillage		No-Tillage (Lilliston 9680)
Cultivar		Pioneer 2540
Planting Date/Rate		Nov. 23, 1997; 20 seed/sq. ft
Harvest Date		July 1, 1998
Fertilizer:		Four Nitrogen Sources - slow release urea (40-0-0) provided by Chisso Corp.
		100% of all N rates on 11/28/97 - urea (46-0-0); - ammonium nitrate (34-0-0); - urea-ammonium nitrate solution (28-0-0):
		25% of all N rates on 11/28/97 25% of all N rates on 4/2/98 50% of all N rates on 4/23/98
Herbicide:		Harmony - 0.6 oz/ac on 3/19/98
Fungicides:		Not Needed
Results:		Average of 4 reps. - See Table 1, below.

**Conclusions:**

Yield of this late-planted no-till wheat was positively influenced by fertilizer N addition and soybean, as opposed to corn, as a previous crop (Table 1). Wheat following soybean averaged nearly 15 bu/ac greater yield than wheat following corn in this study. Averaged across all N rates, and regardless of prior crop, no difference due to fertilizer N source was observed. The optimal N rate was between a total of 105

and 140 lb N/ac, regardless of N source and previous crop. The slow-release urea was equal in performance to the other sources, despite being applied entirely in the fall.

**Table 1. Effect of Previous Crop, N source and N Rate on Yield of Late Planted No-Till Wheat**

Previous Crop	Total Fertilizer N Applied lb N/Ac	Wheat Yield - by N Source			
		Chisso	Urea	AN	UAN
			bu/ac	bu/ac	
Corn	0	21.7	25.3	23.1	28.5
	35	35.1	37.5	30.6	36.4
	70	34.7	39.7	35.6	39.0
	105	39.1	43.0	49.1	39.3
	140	44.6	44.9	44.0	36.3
	175	45.4	46.9	42.1	41.0
Soybean	0	37.4	37.5	34.1	37.1
	35	41.6	53.0	45.8	42.9
	70	58.4	50.6	55.5	53.5
	105	46.4	65.9	58.7	52.1
	140	61.7	55.9	61.1	58.9
	175	62.9	62.3	60.7	63.7