Soybean Grain Protein

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North Dakota soybeans are notorious for relatively low grain protein compared to those produced farther south, resulting in potential market discounts. Previous work in North Dakota and Minnesota has shown that planting date does not markedly affect protein. A project was initiated to study other management factors which may influence grain protein. Results to date indicate that cultivar has a significant impact on protein (Table 1).

Table 1. Soybean grain yield and protein, NDSU Carrington, 2000-01.

Cultivar	Yield	Protein
	(bushels/acre)	(%)
AC Proteina	38.7	41.8
Jim	44.6	36.1
Norpro	43.1	39.9
OT98-1	41.5	41.1
Traill	45.6	37.5
LSD (0.05)	2.1	0.6

Cultivars selected for higher protein (AC Proteina, OT98-1, and Norpro) do contain higher protein levels than cultivars selected for yield (Jim and Traill). However, protein is gained at the expense of yield and current market premiums do not compensate for the reduction in yield. Preliminary results from 2001 showed that the effect of N fertilizer amount or application timing on protein is less than that of the cultivar planted.