Soybean response to crop rotation, Carrington, 2006. (Gregory Endres and Carl Bradley) A field study was initiated in 2002 at the NDSU Carrington Research Extension Center to examine the performance of continuously-grown soybean compared to soybean grown on the previous year's wheat ground. Experimental design was a randomized complete block with a split-plot arrangement and four replications. In 2006, 'RG200RR' soybean was direct-planted into standing stubble in a dryland, loam soil at 200,000 pure live seeds/acre in 7-inch rows on May 17 with previous crop history of five years of soybean or alternating wheat and soybean (wheat in 2005). Also, soybean performance was compared between seed treatment ('Warden RTA' at 5 fl oz/A) versus untreated seed. Samples for root disease severity were taken on July 18. The trial was harvested with a plot combine on September 12.

Plant growth and development, seed yield, and seed quality generally did not differ between rotations (Table). Root disease severity tended to be higher with continuous soybean or without seed treatment. Seed yield tended to be higher with soybean on wheat ground compared to continuous soybean.

						Average root							
	Plant	Plant	First	Plant	Plant	disease	Seed	Test					
	emergence	density	flower	maturity	height	severity	yield	weight	Seeds/lb	Oil	Protein		
Treatment	(Jday)	(plants/A)	(Jday)	(Jday)	(inch)	(0-4)	(bu/A)	(lb/bu)	(grams)	(%)	(%)		
Rotation		,		•		· ,			,				
soy/soy	147	232644	180	242	19	2.8	28.6	57.8	3614	18.9	37.3		
soy/wht	147	216280	180	242	22	1.9	30.7	57.8	3822	18.7	37.1		
LSD 0.05	NS	NS	NS	NS	2	NS	NS	NS	166	NS	NS		
Seed treatment													
treated	147	226241	180	243	20	2.1	29.7	57.8	3694	18.9	37.2		
untreated check	147	222683	180	242	21	2.6	29.5	57.8	3742	18.8	37.2		
LSD 0.05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
RotxTreat													
soy/soy treat	147	223395	180	242	19	2.7	28.7	57.8	3572	19.1	37.1		
soy/soy UC	147	241893	180	242	20	2.8	28.4	57.9	3656	18.8	37.4		
soy/wht treat	147	229086	180	243	21	1.5	30.8	57.8	3815	18.6	37.4		
soy/wht UC	147	203474	180	242	22	2.3	30.6	57.8	3828	18.8	36.9		
LSD 0.05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		