

Variety Trials

Comparisons of crop varieties in 1996 addressed two topics: specialty markets and biotechnology. The **Neely-Kinyon Farm**, near Greenfield, compared a popular "tofu"-type soybean cultivar, LS201, to a standard variety from DeKalb ([Table 1](#)). Seeding costs were sixty percent greater for the large-seeded LS201, and the 2.3 bushel yield advantage for the DeKalb variety was statistically significant, but this was a trial of economics as much as yield.

The DeKalb soybeans sold locally for \$6.84 per bushel, but the tofu beans were contracted for \$1.20 per bushel over the \$7.15 Chicago Board of Trade price on the day they were delivered to Southwest Iowa Specialties, in Atlantic. These were not organic or pesticide-free soybeans. In fact, because of the distance from the Armstrong Farm, more than \$60 per acre was spent on weed control. Certified organic soybeans were typically contracted for \$14 per bushel in 1996. **Ken Rosmann**, of the Heartland Organic Marketing Co-op also demonstrated edible soybean variety plots at his field day last Sept. 21.



In 1996, "Bt corn" was first released to the public. The corn carries a bacterial gene for a protein toxic to the corn borer caterpillar. Corn Belt producers are receiving mixed messages about the technology. They may hear the corn borer will build resistance to Bt just as many insects have evolved resistance to chemical insecticides. Also in its first year, Bt cotton was "overwhelmed" by pink budworms and bollworms in 1996 (Science, 7/26/96). On the other hand, producers hear about hidden losses associated with European corn borer.

We don't yet know how to manage resistance to Bt, but several PFI members have begun to look at the economics of Bt corn. **New Melleray Abbey**, Peosta, hosted observation plots in 1996, and down the road **Dave and Lisa Lubben**, Monticello, carried out a replicated trial ([Table 1](#)). They compared a Bt hybrid (Max21) to a hybrid (CIBA 4394) reportedly identical except for the Bt gene. The 4.6 bushel yield difference was statistically significant, and it was great enough to overcome the \$5.33 difference in seed cost, giving the Bt corn a \$6.23 advantage in this trial.

Table 1. "A/B" PLANTING AND VARIETY TRIALS						"A/B" PLANTING AND VARIETY TRIALS							
COOPER- ATOR	CROP	TREATMENT "A"			TREATMENT "B"	TRT "B"		DIFFERENCE				COMMENT	
		DESCRIPTION	YIELD (bu.)	TREAT- MENT COST	DESCRIPTION	YIELD (bu.)	TREAT- MENT COST	YIELD DIFF.	YLD LSD (bu.)	YLD SIG.	\$ BENEFIT OF TRT "A"		
BAUER	SOYBEANS	10" DRILL	47.7	\$32.77	19" ROW PLANTER	46.8	\$26.38	0.9	1.8	N.S.	-\$6.39	TRT 1 BENEFIT = \$0.28 WITH 2ND PLANTER PASS	
NEELY- KINYON	SOYBEANS	LS201 TOFU BEAN	43.5	\$29.17	DEKALB CX278	45.8	\$22.89	-2.3	1.7	*	\$43.30	\$8.35 VERSUS \$6.84 PER BU SELLING PRICE	
NEELY- KINYON	SOYBEANS	175,000/ACRE LS201	40.5	\$23.94	225,000/ACRE LS201	40.7	\$30.79	-0.1	1.3	N.S.	-\$6.85		
LUBBEN	CORN	SEED FIRMER ATTACHMENT	136.1	\$0.25	NO SEED FIRMER	140.0	\$0.00	-3.9	9.6	N.S.	-\$0.25		
LUBBEN	CORN	MAX 21 (BT CORN)	168.2	\$33.00	CIBA 4394 (NON-BT)	163.6	\$27.67	4.6	3.9	*	\$6.23	4394 AND MAX 21 ARE ISOLINES DIFFERING ONLY IN THE BT GENE	