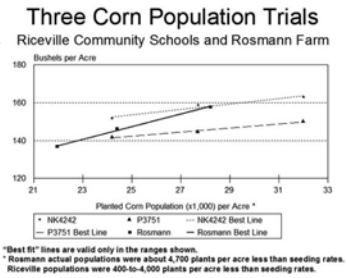
Corn Population Trials

In 1994, corn population trials came from both cooperators **Ron and Maria Rosmann**, Harlan, and the Riceville, Iowa Future Farmers of America, which participated through a Sustainable Projects grant. In all three trials there was a consistent yield response to increasing populations (Table 3 and Fig. 3). The Rosmanns are adjusting their cropping system as they make the transition to organic certification. Not only did they see a yield response to population, they found through stand counts that rotary hoeing and cultivation had thinned the planted population by around 4,700 plants per acre. The finding may refocus their attention on these operations.

Figure 3. Three 1994 corn population trials.



The Riceville FFA compared three planting populations, the highest being 32 thousand seeds per acre. That population was the yield winner in both of the corn hybrids evaluated, although crop stands were up to four thousand plants less than seeding rates. Of course, 1994 was a good year for corn. In a more stressful growing season, the yield response could be different. These trials probably should be repeated for a number of years, and results should be considered along with information provided by the seed companies and by third parties like ISU Extension.

Table 3. MULTIPLE-TREATMENT PLANT POP. & FERTILIZER TRIALS

COOPERATOR	CROP	PREVIOUS CROP	YIELD SIGNIFI-CANCE	TREATMENT "A" DESCRIPTION	TREATMENT "A" YIELD (bu or T)	TREATMENT "A" STAT.	TREATMENT "A" TRT COSTS	TREATMENT "A" $ BENEFIT	TREATMENT "B" DESCRIPTION	TREATMENT "B" YIELD (bu or T)	TREATMENT "B" STAT.	TREATMENT "B" TRT COSTS	TREATMENT "B" $ BENEFIT	TREATMENT "C" DESCRIPTION	TREATMENT "C" YIELD (bu or T)	TREATMENT "C" STAT.	TREATMENT "C" TRT COSTS	TREATMENT "C" $ BENEFIT	OVERALL COMMENTS
RICEVILLE FFA	NK4242	CORN	*	24,200 SEEDS/ACRE (22,200 PLANTS)	151.7	c	$27.19	$0.00	27,700 SEEDS 25,400 PLNTS	158.7	b	$31.13	$10.11	32,000 SEEDS 28,200 PLNTS	162.9	a	$35.96	$13.68	
RICEVILLE FFA	P3751	CORN	*	24,200 SEEDS/ACRE (22,200 PLANTS)	141.8	c	$24.73	$0.00	27,700 SEEDS 25,400 PLNTS	144.6	b	$28.31	$1.89	32,000 SEEDS 28,200 PLNTS	150.2	a	$32.70	$8.76	
ROSMANN	CORN	SOY BEANS	*	21,950 SEEDS/ACRE (16,840 PLANTS)	136.7	c	$18.59	$0.00	24,400 SEEDS (19,800 PLANTS)	146.1	b	$20.67	$16.68	28,200 SEEDS (23,760 PLANTS)	157.7	a	$23.89	$36.76	LATE SPRING SOIL NITRATE 38 PPM, FALL STALK NITRATE LOW IN ALL TRTS
ALERT	CORN	SOY BEANS	N.S.	20 LBS P, 40 LBS K 2" BELOW SEED (DEEP PLANTER SHOE)	137.0	a	$34.59	$0.00	20 LBS P, 40 LBS K TO THE SIDE OF THE SEED	140.2	a	$34.59	$0.00	CHECK TREATMENT: NO BANDED P & K	136.9	a	$22.30	$12.29	TWO REPS DISCARDED BECAUSE OF MISSING DATA
GRAU	CORN	SOY BEANS	*	BROADCAST P & K	174.4	ab	$28.73	($28.73)	DEEPBAND P & K	182.1	a	$29.41	$2.26	CONTROL (NOFERT.)	166.3	b	$0.00	$0.00	TREATMENT $ BENEFIT IS RELATIVE TO CONTROL TRT
OLSON	SOY BEANS	CORN	N.S.	75 LB K PLANTER BAND	64.2	a	$9.50	$9.50	150 LB K PLANTER BAND	65.4	a	$19.00	$0.00	ZERO K	61.2	a	$0.00	$19.00	SOIL K TEST: 125 PPM, MEDIUM-HIGH
NEELEY-KINYON	CORN	SOY BEANS	*	0 LBS ANHYDROUS NITROGEN	136.4	b	$0.00	$0.00	75 LBS ANHYDRS. N	154.3	ab	$8.63	($8.63)						* RATE SET W. SOIL NITR. TEST . THREE REPS ONLY
									* 110 LBS ANHYDRS. N	166.7	a	$12.65	$48.83	150 LBS ANHYDRS. N	167.5	a	$17.25	$44.23	