

## Specialty Crop Production Systems

**The Neely-Kinyon** tofu soybean trials reflect the growing interest in specialty markets and identity-preserved production. Two of the fastest growing specialty markets, with two of the highest premiums in specialty production, are the organic and the pesticide-free approaches. Many Midwestern farmers are looking seriously at these methods of production, but they have questions about the economics and practices involved. **Jeff Klinge and Deb Tidwell**, Farmersburg, are moving into certified organic crop production. Jeff documents costs of production for his organic and non-organic corn in the sidebar on page 18 ([First Year Experience with Organic Corn](#)) and in [Table 10](#).

**Paul and Karen Mugge**, Sutherland, used the ISU Extension Crop Enterprise record system to track production costs of their conventional and contracted, pesticide-free soybeans ([Table 11](#)). Since insecticides and fungicides are not usually used on soybeans in Iowa, "pesticide-free" essentially means no use of herbicides for weed control. This is a requirement for which his ridge tillage practices (see also page 22) give Paul an advantage. To raise the pesticide-free beans, which he contracts for a premium, Paul: harrowed corn stalks; planted HP-204, a tofu-type bean, with his ridge-till planter; rotary hoed a total of four times; ridge-till cultivated twice; combined the crop; and paid local schoolkids to walk the beans for escaped weeds. In the comparison system of "conventional" soybeans, Paul: harrowed stalks; ridge-till planted a high-yielding, small-seeded variety; sprayed herbicide with a 45-foot boom; ridge-till cultivated twice; spot-applied herbicide first with a 15-foot sprayer and then with a bean buggy with a 15-foot boom; and combined.

The Crop Enterprise records bear out Paul's estimate that the pesticide-free soybeans are worth about an additional \$100 per acre to him, giving a \$78.43 per acre difference in profit and return to management ([Table 11](#)). Crop Enterprise accounting allocates machinery cost based on hours of use and the entire cropping equipment inventory. As such, it reflect the amount of time spent, but not the particular pieces of equipment used in each field or treatment. An accounting based on specific equipment usage would come up with a somewhat different result. The 1997 contract premium for Paul's pesticide-free soybeans was \$3.60 per bushel. Paul is looking forward to 1998, when the premium offered for pesticide-free soybeans will rise to \$4.00.

Table 10. Corn production budgets, organic and conventional, Klinge farm.

Item		Organic	Conventional
Pre-Harvest Machinery		\$27.50 †	\$20.25 ‡
Seed (Ceiba 3475)	29,000 plants/acre	\$31.90	\$31.90
Nitrogen (no P or K)	60 lbs	\$0.00	\$14.40
Herbicide	2.4 qt. Harness Extra, .78 oz Permit plus additives	\$0.00	\$36.13
Insecticide	8 lbs Aztec	\$0.00	\$17.12
Crop Insurance		\$5.00	\$5.00
Interest	9.5% for 8 months	\$4.08	\$7.90
Pre-Harvest Total		\$68.48	\$132.70
Harvest Machinery	Combine	\$22.00	\$22.00
	Haul Grain	\$4.00	\$4.00
	Dry Grain (\$0.15/bu)	\$19.20	\$21.75
Harvest Total		\$45.20	\$47.25
Labor	\$8.00/hr	\$48.00	\$32.00
Land	cash rent equivalent	\$150.00	\$150.00
Total Cost per Acre		\$311.68	\$362.45
Crop Yield (bu/acre)		128	145
Cost per Bushel		\$2.44	\$2.50
Sale Price (per bu)		\$4.05	\$2.70
Gross Income/Acre		\$518.40	\$391.50
Net Profit/Acre		\$206.72	\$29.05

† Organic: tandem disk 2x, chisel plow, harrow, plant, hoe 2x, cultivate 3x

‡ Conventional: tandem disk 2x, chisel plow, harrow, plant, hoe 1x, cultivate 1x

Unit name or number	Unit	Pest-Free	Conventional
Type of land tenure		Cash Rent	Cash Rent
Planted acres	acres	45.0	95.0
Harvested yield	bu/a	44.0	54.0
Gross crop income	\$/acre	\$444.40	\$351.00
Economic costs			
-Inputs	\$/acre	\$42.44	\$34.59
-Land	\$/acre	\$110.00	\$110.00
-Machinery	\$/acre	\$30.75	\$24.76
-Labor	\$/acre	\$14.22	\$13.08
-Miscellaneous	\$/acre	\$2.67	\$2.67
Total economic costs	\$/acre	\$200.07	\$185.10
Profit and management return	\$/acre	\$244.33	\$165.90
Operator's share of gross income	\$/acre	\$444.40	\$351.00
Operator's share of total costs	\$/acre	\$200.07	\$185.10
Gross income per bushel	\$/bu	\$10.10	\$6.50
Total cost per bushel	\$/bu	\$4.55	\$3.43
Profit and management return / bu.	\$/bu	\$5.55	\$3.07
Return on total capital investment	%	107.0%	76.1%
Return to unpaid labor	\$/hour	\$129.31	\$97.10
Total cash flow requirement	\$/acre	\$179.50	\$169.20
Cash flow required per bushel	\$/bu	\$4.08	\$3.13