

Soybean Management Comparison

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Objective

To compare the productivity of two soybean production systems. One is a no-till conventional system compared to an organic soybean production system.

Background

Cooperator:	Ag Incubator Foundation	Soil test:	pH-6.4, P-71 ppm, K-288 ppm, CEC-20.5
County:	Wood	Planting Date:	no-till: May 25, 2008 organic: May 28, 2008
Nearest Town:	Haskins	Planting Rate:	200,000 seed/ac
Drainage:	tile, well-drained	Row Width:	no-till: 7.5 in.; organic: 30 in
Soil type:	Hoytville, clay	Herbicides:	listed below
Tillage:	listed below	Harvest Date:	October 7, 2008
Previous Crop:	corn		

Methods

Each system was replicated five times in a randomized complete block design. Individual plot size was .55 acre in 30-foot wide strips. The center of each strip was harvested the length of the strip and weighed using a weigh wagon. The following systems were compared.

1. No-till system: previous crop corn, No-till drill into corn stalks. Non-GMO bin run soybean seed. Herbicide: Broadstrike, Sonic, Durango.
2. Organic system: previous crop corn. Cereal rye planted fall 2007. Spring 2008 tillage disk twice, field cultivator once, drag & cultipacker once. Plant with 30 inch row planter. Rotary hoe once, cultivate three times for weed control. No fertilizer or pesticides applied. Certified organic since 2004.

Weed populations in the soybean row were considerably higher in the organic system compared to the conventional system. Plant populations were higher in the conventional system.

Results

Soybean System	Soybean Yield bu/ac
No-till	28.8 a
Organic	18.5 b
LSD (0.05)	5.8

Summary

In this comparison, no-till conventional soybean yields were significantly higher than certified organic soybean yields, however net income per acre is higher with the organic soybean system due to higher price per bushel for organic. When comparing net income, the organic system would need a selling price of \$14.00 / bushel to equal the income from the no-till system at \$9.00 / bushel selling price. Typically organic prices are over double conventional grain prices.

System	Yield Bu/ac	Price \$/bu	gross income	Seed cost	Machinery cost	Herbicide cost	Net income \$/ac
No-till	28.8	\$9.00	\$259.20	\$41.94	\$43.95	\$21.10	\$144.92
Organic	18.5	\$19.00	\$351.50	\$57.00	\$57.28	\$0.00	\$237.22

Expenses when comparing no-till versus organic need to account for herbicide, seed, and tillage costs.

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