

Economic analysis reveals organic farming profitable long-term

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Organic farming is known to be environmentally sustainable, but can it be economically sustainable, as well?

The answer is yes, according to new research in the Sept.-Oct. issue of [Agronomy Journal](#). In an analysis of 18 years of crop yield and farm management data from a long-term University of Minnesota trial, an organic [crop rotation](#) was consistently more profitable and carried less risk of low returns than conventional corn and [soybean production](#), even when organic prime premiums were cut by half.

Previous research has almost universally found the same thing: Organic farming practices can compete economically with conventional methods, says the current study's leader, Timothy Delbridge, a Univ. of Minnesota doctoral student in [agricultural economics](#). However, these conclusions are mostly based on findings from short-term trials in small plots.

What sets the Minnesota study apart is both the large size of its experimental farm plots (165 feet by 92 feet) and the trial's longevity. "Doing an economic study like this, it's important to get as complete a picture of the yield variability as we can," Delbridge says. "So, the length of this trial is a big asset. We're pretty confident that the full extent of the yield variability came through in the results."

What gave organic production the edge wasn't higher [crop yields](#), however; instead it was organic price premiums. In their absence, the net return from a 2-yr, conventional corn-soybean rotation averaged \$342

per acre, compared to \$267/ac for a 4-yr organic rotation (corn-soybean-oat/alfalfa-alfalfa), and \$273/ac for its 4-yr conventional counterpart. When a full organic premium was applied, though, the average net return from organic production rose to \$538/ac, significantly outperforming the conventional systems both in terms of profitability and risk. And organic production was still more profitable when the price premium was reduced by 50%.

Organic price premiums are often the main reason why farmers think about switching to organic production, Delbridge explains, which means they also often wonder what would happen if the premiums declined. It's for this reason that the researchers considered different premium levels (full, half, and none) in their analysis—not because they necessarily expect the premiums to go away anytime soon, he notes.

The cost of production was also a factor: The conventional 2-yr rotation had higher production costs on average (\$198/ac) than either the 4-yr conventional rotation (\$164/ac) or the organic one (\$166/ac). The difference primarily came in weed management, Delbridge says. The price of purchasing chemical herbicides in the 2-yr conventional rotation exceeded the cost of controlling weeds mechanically in the organic system, leading to higher overall production costs in the conventional rotation, even though organic production involved more field operations, Delbridge adds.

Delbridge cautions that the analysis relied on organic yields from an experimental trial that sometimes exceeded the average yields actually achieved by organic corn and soybean producers in Minnesota. It also didn't consider the overhead and fixed costs of farming. He's now involved in a second project that is comparing the economics of organic and conventional production in a whole-farm system.

More importantly, he adds, "What we're looking at here are results

between an established organic and an established conventional system. This research doesn't take into consideration the issue of the transition itself: how difficult or costly that may be."

Still, if growers can successfully weather the transition, the study offers convincing new evidence that the change will be a lucrative one over the long haul.

More information: www.agronomy.org/publications/aj

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