

'No-till farming' revolution grows in Indiana

April 17 2012, by Ivan Couronne



A farmworker culls cotton plants growing between rows on a farm in Texas, July 2011. Advocates of a "no-till farming" technique in the US say it could provide the low-cost, environmentally-friendly crops the agricultural industry has sought for many years.

Indiana farmer Mike Starkey does not plow his fields and uses fertilizer only sparingly, but he is on the cutting edge of a growing trend in American agriculture.

Advocates of his "no-till farming" technique say it could provide the low-

cost, environmentally-friendly crops the agricultural industry has sought for many years.

Starkey's cropland looks like a tangle of corn stalks, crimson clover and ryegrass, far different from the impeccably-plowed fields of most farms.

"Over a period of 12 years, we're now 100 percent no-till," said the corn and soybean farmer, who also is a supervisor with the Hendricks County Soil and Water Conservation District.

The biggest departure from traditional farming involves the plowing, also known as tilling.

Plowing aerates the soil, eliminates weeds and helps with nutrient recovery.

However, plowing also erodes the soil and kills part of the organic life that grows in it.

No-till farming helps to rebuild the "nutrient capital" of farmland that now is dependent on fertilizers, Starkey said.

The technique, also known as "conservation farming," started about 20 years ago by following the "three pillars" of the method: cover crops, no-till and crop rotation.

Cover crops refer to plants like clover, ryegrass and alfalfa that form a carpet to protect the soil from erosion while also trapping nitrogen from the air and storing it in nodules on the roots of plants to fertilize the ground.

In April, just before the sowing of seeds, weedkiller is sprayed on the cropland.



A cotton plant pictured in a field on a farm in the United States, July 2011. Indiana farmer Mike Starkey does not plow his fields and uses fertilizer only sparingly, but he is on the cutting edge of a growing trend in American agriculture.

"When we actually kill these legume plants, these nodules then become an organic source of nitrogen that breaks down much more slowly than commercial fertilizer," said Barry Fisher, a no-till farming expert for the US Agriculture Department's National Resources Conservation Service.

"That's a time release form of nitrogen... that will spoon feed the nitrogen to the corn crop coming here," Fisher said.

Cover crops maximize the use of the soil's natural fertilizers, which can be a better alternative than manufactured fertilizers sinking into groundwater after heavy rain, he said.

Direct seeding for cash crops requires special tractors that dig narrow furrows, inject the seeds and close the hole in one motion, without scarring the land.

No-till crops like corn and soybeans feed off the rich nutrients in decomposing plants from the previous season and from cover crops.

"Conservation tillage systems, with today's planting equipment, with today's technologies... have been yielding consistently the same" as traditional farming, said Tony Vyn, professor of agronomy at Purdue University, where the technique has been studied since 1975.

About 35 percent of US crops are grown with no-till farming, according to the US Agriculture Department. For soybeans, about half the crops are raised with no-till techniques.

The federal government is encouraging no-till farming by providing subsidies for cover crop seeds and the special equipment they require, which can run up to 50 percent of the cost.

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