

GMO farmers give up plow, making for healthier soil

Neatly tilled fields have long been a hallmark of American agriculture and its farmers, by and large traditionalists who often distrust practices that diverge from time-honored methods.

But soil-conservation farming is gaining converts as growers increasingly face extreme weather, high production costs, a shortage of labor and the threat of government regulation of agricultural pollution.

Government surveys suggest that the use of no-tillage farming has grown sharply over the last decade, accounting for about 35 percent of cropland in the United States.

Farmers till the land to ready it for sowing and to churn weeds and crop residue back into the earth. Tilling also helps mix in fertilizers and manure and loosens the top layer of the soil.

But repeated plowing exacts a price. It degrades soil, killing off its biology, including beneficial fungi and earthworms, and leaving it, as Archuleta puts it, “naked, thirsty, hungry and running a fever.”

Degraded soil requires heavy applications of synthetic fertilizer to produce high yields. And because its structure has broken down, the soil washes away easily in heavy rain, taking nitrogen and other pollutants with it into rivers and streams.

Terry McAlister, who farms 6,000 acres of drought-stricken cropland in North Texas, said that he switched to no-tillage in 2005, when an agricultural economist calculated that the method offered a \$15-per-acre advantage over full tilling.

But few growers go as far as giving up most agricultural chemicals. McAlister, for example, still uses nitrogen fertilizer. He plants seeds that are genetically modified for drought or herbicide resistance. And he depends on herbicides like Roundup to kill off his cover crops before sowing the crops he grows for cash.

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