

Reduce tillage, cut fuel costs

DRY conditions will reduce the potential for soil compaction this harvest season. As fuel prices creep upward, consider reducing fall tillage to minimize soil erosion and conserve fuel.

This fall, the negative effects of conventional tillage are amplified by the likelihood of soil moisture loss. Minimizing field operations can be the first step toward maintaining soil quality while reducing fuel consumption and fuel costs. After harvest, evaluate your tillage needs and consider using fewer tillage operations to reduce expenses and equipment depreciation.

"Average fuel prices have been relatively high the past two years," notes Mark Hanna, Iowa State University Extension ag engineer. "Fuel, labor and tillage needs for crop acres should be evaluated very carefully to ensure that any expenses are providing adequate returns."

Hanna and Mahdi Al-Kaisi, ISU Extension agronomist, are conducting ongoing field trials at six ISU research farm locations across Iowa. The chart shows average soybean yield response to tillage from 2003 to 2007 at the six locations. Average yields were just as high with no-till as with conventional tillage. Thus, no-till is the better choice for soybean after corn. "Reducing tillage ahead of soybean



Farm Energy

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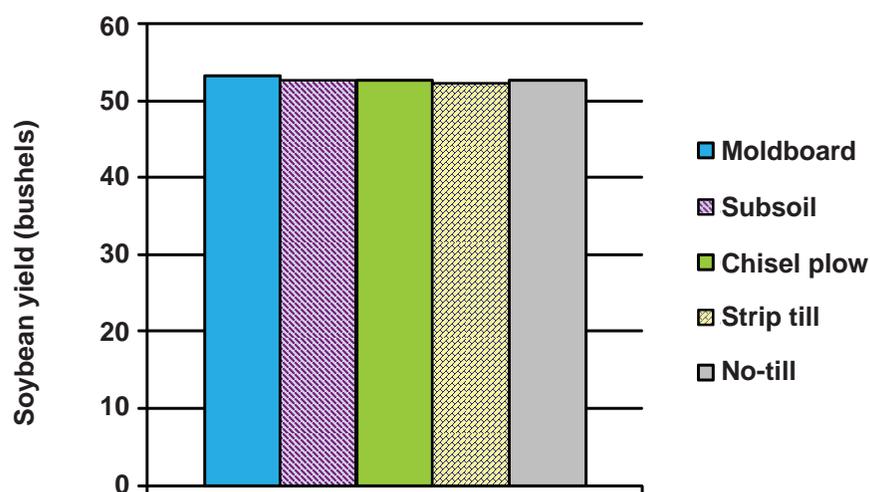
production is a good place to start minimizing fall tillage," says Hanna. If tillage is unavoidable, keep in mind that deeper tillage burns more fuel than shallow tillage. As noted, dry soils this fall won't be as susceptible to compaction as they would be in a wetter year. Till only as deep as necessary to loosen a compacted layer, Hanna advises. Secondary tillage only needs to be deep enough to level the soil for planting.

Other fuel-saving tips

Consider opportunities to save fuel by choosing the right implement for the job. For example, using a chisel plow for primary tillage requires less fuel than a ripper. In fact, chisel plowing consumes about half a gallon less fuel per acre than a ripper or moldboard plow, and field cultivating requires even less fuel than chisel plowing.

In addition to tillage adjustments, if a smaller implement does not fully load the tractor, use a higher gear and reduce engine speed to maximize fuel efficiency.

Tillage no help to soybeans after corn



SKIP IT: Is tillage really needed for a soybean crop following corn? If you're looking for yield improvement, the answer is no. A long-term study at six locations across Iowa shows no significant difference in bean yield for various tillage systems.

"Shift up and throttle down in the field to conserve fuel," says Hanna. "Also, before starting fieldwork, check tractor fuel and air filters, tire inflation and ballasting to maximize fuel savings."

If you're considering a transition to no-till, talk to friends and neighbors with previous experience. Keep in mind that minimum and no-till systems can help to reduce soil erosion while also minimizing fuel costs, labor expenses and machinery wear and tear. Hanna notes that planting corn into dense crop residue requires more attention to planter adjustments, fertilizer application and weed management

practices. He recommends seeking ISU resources to help you make the transition.

"Diesel fuel for field operations is the greatest direct energy expense for many Iowa farms," he points out. "Consider adjusting field operations to reduce fuel consumption now and into the future."

Follow @ISU_Farm_Energy on Twitter or visit ISU Farm Energy at farmenergy.exnet.iastate.edu to download the "Limiting Field Operations," PM 2089D, fact sheet and other farm energy-efficiency resources.

Petersen is program coordinator for ISU Farm Energy in collaboration with the Iowa Energy Center.

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