

Harvest these fuel-saving tips

As we look toward harvest, the potential for soil compaction will be minimized by the dry weather conditions. A reduction in your fall tillage will not only minimize soil erosion, but also help reduce farm fuel expenses.

Less-than-optimal rainfall across the state left many facing a very challenging growing season. Similar to last year, the



Farm Energy

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negative effects of conventional tillage are amplified this year by the likelihood

of soil moisture loss. Following harvest, evaluate your tillage needs and consider using fewer tillage operations to improve your overall farm energy management. Minimizing field operations is the first step toward maintaining soil quality while also reducing fuel consumption and fuel costs.

"Field operations are often an opportunity to improve fuel savings," says Mark

Hanna, Iowa State University Extension ag engineer. "Tillage should be carefully evaluated to ensure that fuel, labor and machinery costs are providing adequate returns."

If tillage is unavoidable this fall, Hanna says deeper tillage burns more fuel than shallow tillage. Following harvest, dry soils this fall won't be as susceptible to compaction as they would be during a wetter year. Therefore, till only as deep as necessary to loosen a compacted layer, he says. Secondary tillage only needs to be deep enough to level the soil for planting.

Also, 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 approximately half a gallon less fuel per acre than a ripper or moldboard plow, and field cultivating requires even less fuel than chisel plowing.

Shift up, throttle down

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. "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."

Hanna and Anthony Battazzi, undergraduate research assistant and senior in ag systems technology, are testing techniques for diesel fuel savings and energy management. The pair is conducting a case study this fall to evaluate tractor fuel consumption in relation to tillage operations and tractor tire inflation pressure. The first field trial for the study was recently completed at the ISU Bruner Farm in Boone County. Ideally, the results will be available during the Crop Advantage Series presented in January by ISU Extension and Outreach field agronomists.

You can also look for additional resources about soil conservation and minimum tillage from Iowa Learning Farms. Find them on Facebook or visit its website at www.extension.iastate.edu/illf/page/soil-conservation.

Keep in mind that minimum- and no-till systems help reduce soil erosion while minimizing fuel costs, labor expenses, and machinery wear and tear. Hanna says planting corn into dense residue requires more attention to planter adjustments, fertilizer application and weed management practices. He recommends seeking ISU resources if considering a transition, as well as talking to friends and neighbors with previous experience.

"Diesel fuel for field operations is the greatest direct energy expense for many Iowa farms," says Hanna. "To reduce farm fuel consumption now, and in the future, consider adjusting your field operations."

For more information, follow @ISU_Farm_Energy on Twitter or visit ISU's Farm Energy website farmenergy.exnet.iastate.edu, where information on the Crop Advantage Series this winter will be posted. Also, look online for all of our farm energy efficiency resources, including the "Limiting Field Operations" and "Shift Up, Throttle Back" fact sheets.

Petersen is program coordinator for ISU Farm Energy.

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