Cut down on tillage

Farm Energy

By DANA PETERSEN

EVEN more than usual, grain prices are a hot topic of conversation this fall. Under the circumstances, it's easy to forget that fuel prices are also the highest we've seen since 2008, including more than 100 million gallons of off-road diesel fueling Iowa's tractors and combines.

Following harvest, take a moment to evaluate your tillage needs and consider using fewer tillage operations in order to reduce fuel expenses, operating costs and equipment depreciation. Minimizing field operations can be the first step toward reducing fuel consumption and corresponding fuel costs.

"Field operations are often an opportunity to improve fuel savings," says Mark Hanna, ISU Extension ag engineer. "Tillage should be carefully evaluated to ensure that fuel, labor and machinery costs are providing adequate returns."

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

Also, keep in mind that deeper tillage burns up more fuel than shallow tillage. This accompanying graph shows a proportional increase in fuel usage per acre according to the increasing tillage depth for a ripper or subsoiler. Till only as deep as necessary to loosen a compacted layer. Secondary tillage only needs to be deep enough to level the soil for planting.

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 economy. "Shift up and throttle back," says Hanna. "Also check tire inflation, fuel and air filters, and make any necessary ballast adjustments before beginning fieldwork."

For even greater fuel savings, consider that minimum and no-till systems are already allowing many producers across the state to minimize fuel costs, labor costs, machinery wear, and soil compaction and erosion.

Resources for help

If you're considering no-till, look for ISU resources to help you make the transition and talk to friends and neighbors with previous experience.

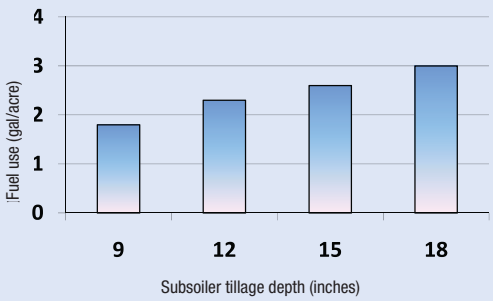
Keep in mind that planting corn into dense residue requires more attention to planter adjustments, fertilizer application and weed management practices.

Developments in precision agriculture technology continue to set new benchmarks for fuel efficiency. Autosteer, GPS and field mapping can help you navigate even more efficiently across each acre of your operation. By using precision tools to eliminate overlapping and minimize turns, you can ensure that you're getting the most from your equipment.

For more information, visit the ISU Farm Energy website at *farmenergy.exnet.iastate.edu* to download the publication "Limiting Field Operations," PM 2089D, and other Farm Energy fact sheets.

Petersen is program coordinator with the ISU Farm Energy project, sponsored by the Iowa Energy Center.

Tillage depth affects fuel use



Save energy, save dollars

ISU Farm Energy offers resources to help farmers improve overall energy efficiency. Follow *@ISU_Farm_Energy* on Twitter for timely energy tips and visit the website to download free publications, including:

- **Grain drying.** Improving Corn Drying Efficiency; Managing High Temperature Grain Dryers for Energy Efficiency; Dryeration and Combination Drying for Increased Capacity and Efficiency
- **Machinery.** Tractor Maintenance to Conserve Energy; Fuel Efficiency Factors for Tractor Selection; Shift Up and Throttle Back to Save Tractor Fuel; Ballasting Tractors for Fuel Efficiency
- **Energy consumption.** How Much Energy is Being Used on Your Farm?; Tracking Energy Use on Your Farm; Electric Savings — Understanding Demand and 3-phase Motor Use