

Fuel savings for tractors

AS fuel prices continue to climb, your tractor maintenance routine can help you save energy. Making a few small adjustments in the day-to-day operation and following a consistent maintenance schedule can improve your fuel efficiency.

"A tractor's engine temperature affects its combustion efficiency," says Mark



Farm Energy

By DANA PETERSEN

Hanna, ISU Extension ag engineer. "The first rule of tractor maintenance should be to keep an eye on the engine temperature when you're in the driver's seat."

When it comes to monitoring engine temperature, cool-down idling is an opportunity for conserving fuel. A few minutes of idling after hard work helps to circu-



JUST DO IT: Be vigilant in following air and fuel filter replacement schedules and engine maintenance procedures.

late cooling oil particularly to the turbocharger, but idling for eight to 10 minutes may be excessive. Newer models may only require three to five minutes of idling, so consult your operator's manual. A larger tractor will burn half a gallon of fuel or more during 10 minutes of idling.

While you're flipping through your owner's manual, take a moment to look at the guidelines for filters. Filter replacement is critical for maintaining fuel efficiency. Both primary and secondary filters trap small particles as air and fuel enter the tractor's engine. As particles build up over time, the flow of air and fuel in the engine's cylinders becomes increasingly restricted, thereby reducing combustion efficiency.

"Fuel efficiency is directly related to the combustion of air and fuel inside a tractor's engine," Hanna says. "Replacing air and fuel filters according to your operator's manual will help you maintain engine power output and optimum fuel efficiency."

Fuel efficiency factors

Previous test data shows measurable fuel savings for filter replacement and general maintenance performed at the intervals recommended in your owner's manual. A past study by the University of Missouri included testing 99 tractors during six field days across the state. Using a PTO dynamometer, the tractors were initially tested "as is" for maximum power output, and then tested again after air and fuel filters were replaced with new filters. Without any additional modifications, the data shows that fuel consumption was reduced 3% to 4% with new filters while still producing maximum engine power output.

As cold weather operations give way to spring fieldwork, make preparations to switch your fuel supply from No. 1 to No. 2 diesel, as the air temperature rises. Unless prohibited by your local fire code, paint aboveground storage tanks white or aluminum-colored. Paint and natural shading can help reduce fuel losses due to evaporation. "Also, equip large storage tanks with a vacuum and pressure-relief valve," adds Hanna. "This will reduce fuel evaporation loss by limiting pressure fluctuations inside the tank."

Consistent maintenance and operation will help you maintain your tractor's power output and fuel efficiency, thereby reducing fuel costs. Your owner's manual is a good resource. In addition, download the new publication from the ISU Farm Energy Initiative, "Tractor Maintenance to Conserve Energy," PM 2089L, from our site, farmenergy.exnet.iastate.edu. You can also follow us on Twitter @ISU_Farm_Energy.

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