

Are you under-utilizing your 4WD tractor?

DOVER, Del. — Conservation-minded farming means cutting back on consumption by getting the most out of the fuel and machinery used. To achieve it, equipment has to be tuned, weighted, adjusted and used properly.

Many Delaware farmers are using four-wheel-drive tractors. Recent research findings show that most farmers are not using them efficiently, and that means they are not getting out what they invest in these expensive pieces of machinery, according to Delaware extension energy program coordinator Ronald C. Jester.

A Montana State University researcher, William E. Larson, studied how farmers are using the four-wheel-drive tractors. He found that most tractors are being under-used. The farmers are not using as much of the available power as they should because they are throttling back or gearing up. This results in poor fuel economy.

The study showed that most farmers operate their tractors too slowly. The largest percentage of four-wheel-drive tractors are operated at between four and five miles per hour, which is below the minimum recommended for best

drive train life when the tractor is fully loaded. Farmers seem to feel they need to operate at reduced engine loading in order to get adequate drive train life.

While the farmers in the study were not willing to load their engines, they were all too willing to load the tractor weight. This was reflected in travel reductions or wheel slip figures that were too low. Slippage in some cases was as low as one percent and as high as 25 percent, while the average was 7.9 percent. This indicates the tractors were heavier than needed for good tractive performance or that drawbar pull was lower than it should have been for these tractors. The result was too much

power, so fuel was used just to overcome rolling resistance.

One of the best ways to determine if power is being used effectively is by comparing the drawbar power in the actual operation to the maximum available as established in the Nebraska Tractor Test. Those tested use an average of 59 percent of the maximum power available. The range was 29 to 86 percent. Full utilization of the available engine power would probably be between 72-85 percent of the Nebraska Test. The tractors were definitely being under-utilized, Jester says.

Other conclusions resulting from the study are:

The load rpm was most often too high, averaging 95 percent of the load rpm.

Farmers were regularly underloading their tractors for tractive loading. The highest efficiency can be obtained by using a pull weight equal to 40-50 percent of the tractor's weight whereas the average pull weight in the tests was 32 percent.

What does all this mean? If you have a four-wheel-drive tractor, it probably means that you have too much of a good thing. By being aware of the items discussed, you can use these tractors more efficiently. Think about choosing

tillage tools designed to operate over a wider range of speeds, and having performance monitors installed on tractors. Performance monitors would allow farmers to check engine load as well as wheel slip to maximize efficiency during specific operations.

For information on maximizing fuel economy with your farm tractor, write for our fact sheet entitled "Gear-Up and Throttle-Down to Save Fuel." The fact sheet is available from the County Extension Offices or the University of Delaware Substation, R.D. 2, Box 48, Georgetown, DE 19947.

Agent begins duties

FLEMINGTON, N.J. — Hunterdon's new agricultural agent arrived June 1 and experienced one of those hectic days rather common mid to late spring in the Extension office.

Richard Wagner found a myriad of home garden problems with a few household insects thrown in. The phone calls were numerous with detailed descriptions of insect and disease conditions in vegetables, shrubs, trees and fruits. And in between calls, he was greeting office visitors laden down with specimens gathered outdoors over the weekend.

Wagner brings to his position a strong background in plant science, with emphasis on plant pathology. He just recently received his Master of Science

Degree in plant pathology at Cook College. As an undergraduate at Cook, he majored in horticulture.

As County Agricultural Agent and a Cook College faculty member, he assumes a big portion of the Cooperative Extension Service educational program in the county. His areas of responsibility will include, in addition to home vegetables, fruits and grounds, programs and activities in commercial horticulture such as vegetable production, nurseries, floriculture and turf. He will also be our agency's representative to the Soil Conservation District, working in the area of resource development. Farmland Assessment and pesticide application training will also be among his concerns.

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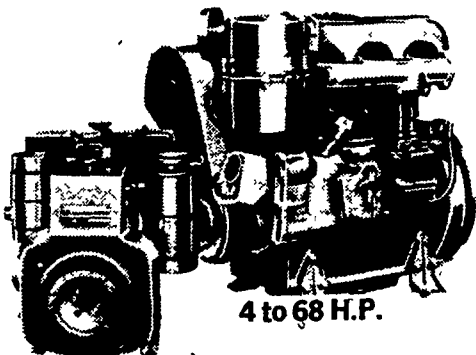
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