

No-till gives net gain of 4.3 gallons fuel per acre

GEORGETOWN, Del. — Although U.S. farmers now use only 2.5 percent of the nation's energy to produce our abundant supplies of food and fiber, they're looking for ways to cut costs by conserving still more energy.

To find out what tillage practices use the least energy to produce the most corn, Delaware extension agricultural engineer Thomas H. Williams and extension agronomist William H. Mitchell studied horsepower, fuel and labor requirements for corn production using moldboard

plow, chisel plow and no-tillage on sandy soil at the University of Delaware Georgetown Substation. They also compared several no-tillage cover crops and rates of broadcast nitrogen. Comparing measurements of tractor horsepower, fuel

consumption and speed, as well as draft of pull-type implements, Mitchell and Williams found that the moldboard plow tillage system uses the most energy. Substituting the chisel plow for the moldboard plow results in a 20 percent reduction in fuel

consumption for tillage operations through the planting of corn.

The most striking reduction in energy consumption, however, is achieved by the no-tillage system.

It uses only 18 percent as much fuel as the moldboard plow system. Changing to no-tillage saves the equivalent of 6.1 gallons of gasoline per acre, and the change involves the use of only 1.8 gallons of gas equivalent in pesticides.

If pesticides are included in the energy input figures, the net gain with no-till is 4.3 gallons of gas equivalent per acre.

The largest energy input in the no-till system is not pesticides, but nitrogen fertilizer. Adding biological nitrogen through the use of a vetch cover crop makes it possible to reduce the energy input considerably.

By substituting vetch and reducing the synthetic nitrogen input from 110 to 20 pounds per acre, the total energy requirement for no-tillage drops to the equivalent of 12.9 gallons of gas, or about 40 percent of that needed for the conventional moldboard plow system (32.2 gallons of gas).

Energy savings through the use of leguminous cover crops such as vetch are not limited to no-tillage systems, although the reduction in tillage operations usually results in more growing time for the cover crop.

Eighty to 90 percent of the nitrogen in a vetch cover crop is located in the top growth, so the longer the cover crop can grow before

it must be killed by herbicides, the more nitrogen it produces.

Results of the three-year cover crop nitrogen study at Georgetown show that cover crops can be an important aspect of a no-tillage system. Spring oats increased corn yields above the control (100 pounds of applied nitrogen but no cover crop) at all levels of applied nitrogen. This cover is normally killed by winter temperatures.

Therefore, it must be planted early in order to develop a good ground cover during the fall months.

Even more striking was the spring oats-vetch mixture, which produced an average of 18.9 bushels more corn than the control.

It is obvious, say the researchers, that energy savings can be achieved by substitutions in energy inputs, but care must be taken to avoid yield losses in the interest of energy conservation. Fortunately, Mitchell and Williams conclude, those practices which are most likely to increase net profits are also most likely to save energy.

Pa. broiler placements up


HARRISBURG — According to the Pa. Crop Reporting Service, the placements of broiler chicks in the Commonwealth during the week ending Jan. 26, totalled 2,283,000.

The placements were 4 percent above the corresponding week a year earlier, and 5 percent above the previous week. Average placements during the past 9 weeks were 4 percent above a year earlier.

Settings for broiler chicks were 2,852,000, 8 percent below the previous week and 1 percent below the same period a year ago.

Inshipments of broiler-type chicks during the past 9 weeks averaged 52,200, compared with 78,000 a year ago.

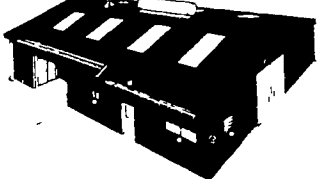
Outshipments averaged 159,800 during the past 9 weeks, 14 percent above a year earlier.




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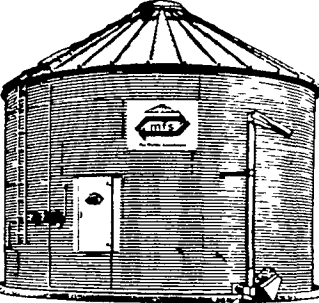
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