

# Horsepower race

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tool carriers, and designs which permit faster road travel.

### Best Power Size

But no matter what new design changes or features emerge in farm tractors the next few years, odds are the engines will be similar in size to today's ranges. And your drive options won't vary much over what's available now. So where do you start in sizing up your needs for the future?

"Right now, and for the next several years, most major farm power considerations are going to revolve around farmers' tillage systems," says Purdue's Doster. "And for many farmers, that may mean less horsepower in the future." He cites the trend toward

reduced tillage in many areas as a major cause.

Just how much less, on a farm-by-farm basis, is indicated by a comprehensive tillage comparison study conducted the past four years by Iowa State University and several other agencies. Basic finding: The same 135 hp tractor needed to produce 400 acres of conventional corn and soybeans can handle up to 1,500 acres in a no-till system.

"Of course, that doesn't mean you won't have any problems getting that much combined," says USDA's Colvin. "But in terms of hours in the field for tractor, equipment and operator, it comes out about the same for 400 acres conventional vs. 1,500 acres of no-till — up to the point of combining."

However, as Iowa State University economist D. Williams Edwards points out, "reduced tillage" doesn't necessarily mean reduced horsepower requirements. "Where you're looking at the one-pass type of tilling and planting system, you can end up with a pretty expensive sort of tractor," he explains. "When you figure the horsepower needed for that type of system and the relatively few hours you run your tractor, the power cost per acre can get pretty high."

An interesting guideline for horsepower in use on the farm is offered by data from the Iowa Farm and Business Association. Its 3,800 members' machinery records indicate the following ranges of horsepower per acre:

Farm size (acres)	HP per acre farmed (primary tractor used)
180-260	0.85
260-360	0.76
360-500	0.60

For example, Iowa farmers in this study (including both cash grain and livestock producers) who operate 400 acres of land probably own about 240 total tractor horsepower, on the average.

"We usually figure the major tillage tractors are getting 400-500 hours of use a year," says Edwards. "If you're with a major tractor, you'd start to wonder whether you're making efficient use of it or not."

His figures for Iowa farmers indicate an annual machinery power cost among cash grain operators of \$65-\$78 per acre, average. That includes fuel, lube, repairs, tax depreciation and custom hire costs. "That doesn't include any labor charges, nor interest on investment," he notes.

Edwards is co-author of a series of 14 microcomputer programs for machinery management to be published by Iowa State early in 1984.

### Less risk?

But no matter whom you talk to about planning your farm power needs, most of them agree on two major points: 1) No formula can make your final horsepower selection for you, and 2) within reason, you probably face less risk being slightly overpowered than you do by not having enough power to get fieldwork done in a timely manner.

"There are many things that you have to consider, and some of them you just can't plug into an equation," says Nebraska's Bashford. "Sometimes, what's important is just getting the job done."

Illinois Siemens says his experience meshes with Bashford's. "Even if you have a computer select your tractor size, it probably would be programmed to pick the optimum size — and that's not always the most desirable, nor the best," he says. "The risk is much

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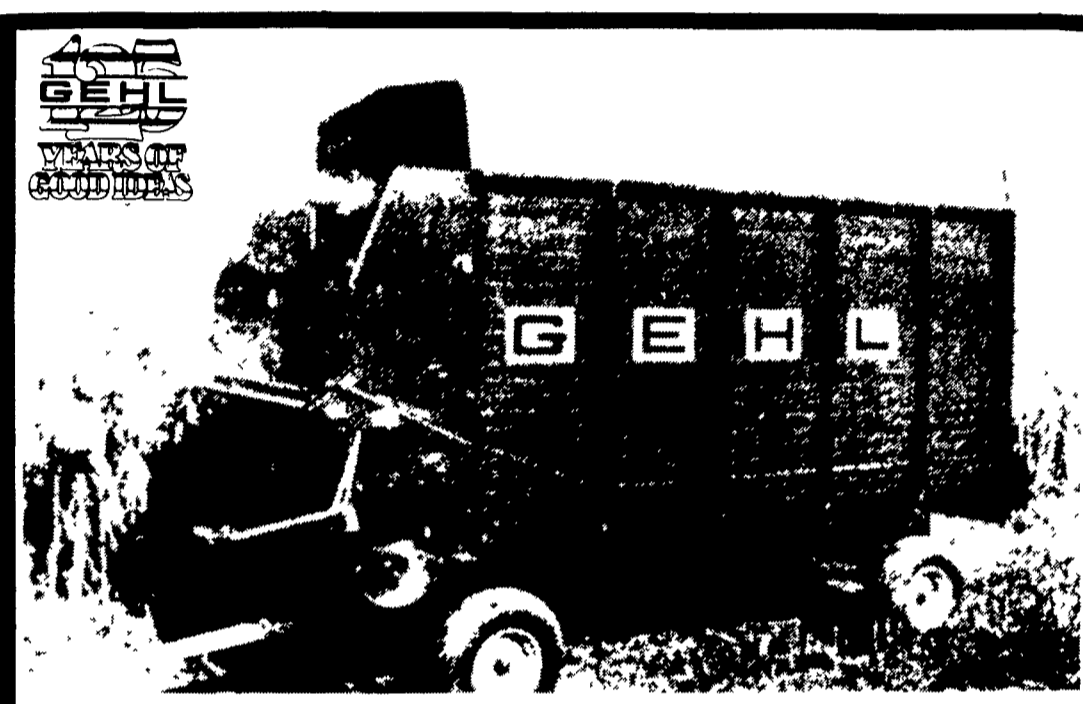
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