

# MOWING FOR DOLLARS

The right mower for the right job can mean savings for your mowing operation.

by William C. Kinzer



Pull-behind reel gang mowers, like the Jacobsen 5/7 Ram-Lift Ranger with seven gangs, are the most economical mowers for large turf areas.

## THE EQUIPMENT REPORT

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year since '79 in terms of the industry. We look to '86 to be possibly matching '85 levels."

**Dave Taylor**, national marketing rep, Dedoes: "Fantastic! The aeration market has finally caught on...particularly in athletics and schools."

**Patricia Carroll**, advertising/public relations, Kubota: "Our product line is appropriate for the commercial turf market as well as the compact tractor market. Our success comes from both markets."

**Joe Nelson**, director marketing services, Sensation: "It's kind of cloudy, really. Generally, we feel it's stabilized, but it's a slow growth industry."

**Gordon Bannerman**, corporate secretary, G. Bannerman Ltd.: "I think it's ever-growing and expanding at a heck of a rate. There have been more changes in the past 10 years than the 10 years before that."

**Dwayne Plessinger**, service coordinator, Steiner Corp.: "It's never been better for us. We're in a unique situation since we don't directly compete with too many other companies. Innovation is the edge in this market."

**Marion Meredith**, advertising manager, FMC: "Good. Our sales have grown over the last year."

**Jim Jenkins**, sales manager, Snapper: "The future looks good. But, as a whole, industry experts say there'll be little growth."

**Lee Markgraf**, operations manager, Kawasaki: "Positive. Our numbers are increasing. People are willing to pay more to get quality."

**Nic Smokey**, advertising manager, Tecumseh: "They're forecasting a two to three percent growth this year. It's a good outlook for equipment."

**Stan Kinkead**, sales manager, National Mower: "We're trying to make functional, simple machines. Sometimes the hardest thing to do is to build something simple."

**Dave Welfelt**, marketing manager, Excel: "Excel and company will continue to grow larger and smaller. We'll provide larger pieces in rotary mowing and continue to expand in the smaller end." □

A great deal of money can be saved on mowing costs by simply choosing the right equipment for the job and using that equipment in the most efficient and economical manner.

To achieve the most cost effective mowing, there are several factors to consider.

The initial cost of equipment appears to be the most obvious factor. But in long-term mowing budgets, it may be the least important due to labor costs, maintenance costs, downtime costs, and fuel costs over a given time frame.

Each machine must be evaluated in its application for what it can do for you.

### Types of mowers

Each of the basic mower types (reel, flail, rotary, sickle) has its advantages and limitations. A purchaser must know the type of turf he needs to cut, how often it needs cutting, and what each of these mower types can do for him.

Reel mowers give the finest quality of cut due to their shearing action. They also have the longest life.

Rotaries have the easiest maintenance, but because they are impact-type mowers, they produce a less formal finish to the turf and require a higher horsepower source.

The flails have safer operating characteristics, and some give a quality cut to semi-formal as well as informal turf. Flails are also impact-type mowers and require a high horsepower source.

Sickle mowers are effective for cutting tall rough grass such as along roadsides but they have limited applications and high maintenance requirements.

### Horsepower requirements

All mower types should be teamed up with properly sized horsepower



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	72" out-front rotary w/gas engine	72" out-front rotary w/diesel engine	72" rotary or flail mounted on 4WD all-purpose turf tractor	16' self-contained rotary w/diesel engine	15' self-contained reel mower w/diesel engine	15' reel pull-behind gang mower w/diesel turf tractor	25' reel pull-behind gang mower w/diesel turf tractor
Approximate Initial Cost	\$12,800	\$13,600	\$18,900	\$34,800	\$47,900	\$34,700	\$35,400
Fuel Consumption @ \$1.00/gallon	1.25/hr	1.0/hr	.92/hr	2.52/hr	1.2/hr	.90/hr	1.35/hr
Acres per Hour (mowing capacity)	3.3	3.3	3.3	8.6	8.25	8.25	14.0
Hours Required to Mow 80 Acres w/P.M.	27.2	27.2	27.2	10.4	10.9	10.9	6.4
Hours Required to Mow 80 Acres Over 1 Yr. Period (50 mowings = 4000 acres)	1360	1360	1360	520	545	545	320
Labor Cost Per Year (Based on \$7.00/hour)	\$9520	\$9520	\$9520	\$3640	\$3815	\$3815	\$2240
Fuel Cost Per Year (Based on \$1.00/gallon)	\$1700	\$1360	\$1251	\$1310	\$654	\$490	\$432
Cost Per Acre (Based on 5 Yr. Period)	\$3.45	\$3.40	\$3.34	\$2.44	\$2.56	\$2.12	\$1.73
Average Cost Per Year (Based on 5 Yr. Period)	\$13,789	\$13,609	\$13,372	\$9,732	\$10,217	\$8,475	\$6,920
Average Cost Over 5 Years	\$68,944	\$68,046	\$66,361	\$48,660	\$51,088	\$42,374	\$34,603
*Average Cost Over 10 Years	\$137,888	\$136,092	\$125,716	\$80,910	\$76,933	\$67,399	\$53,463

\* Based on necessary replacement of major components and/or entire machine over the given time period

sources in order to ensure adequate engine life, optimum fuel economy, and efficient mowing. Generally, a reel or sickle will require less horsepower, while flails and rotaries require more.

Typical horsepower requirements for the various mower types are:

30-inch reel, 2.5 hp or .08 hp per inch; 72-inch rotary, 14.5 hp or .20 hp per inch; 60-inch flail, 12 hp or .20 hp per inch; 72-inch sickle, 6 hp or .08 hp per inch.

The terrain of the mowing area must also be considered when figuring horsepower requirements. A flat area will require less horsepower to power the tractor than a hilly area.

It should also be noted that high altitude, hot weather, and poor maintenance affect horsepower output.

### Diesel vs. gasoline

Diesel engines are more fuel efficient

and deliver better torque characteristics than their gasoline counterparts. A diesel engine will generally have a higher initial cost, but the life expectancy is higher.

Gasoline engines have fewer starting problems than diesels when the temperature falls below 20 degrees F, making them the preferred choice if the machine is used in winter applications, such as snow removal, etc.

### Labor, mowing capabilities

Over a five-year period, labor costs can amount to more than 50 percent of a total mowing budget. The time it takes for various machines to mow the same area of turf becomes a very important factor.

Of course, a machine that mows five acres per hour will require fewer labor hours than one that mows three acres per hour.

The buyer will want to know the mowing capacity of the machine in acres per hour in order to figure the costs per acre. Width of cut and effective speed of operation are two main factors that determine mowing capability and economy.

Gang mowers, such as 5- or 7-gang pull-behind models, are the most economical mowers for large turf areas because more grass can be cut with fewer passes.

The comparison table shows how many different factors combine to formulate cost-per-acre calculations of various mowing machines. The chart accounts for normal maintenance, but does not include variables that may differ greatly from one situation to another such as unexpected breakdown, downtime costs, or length of mowing season.

Note that the pull-behind gang reels are the most economical in cost

per acre over a five-year period. The cost per acre of an 11-gang pull-behind is \$1.73 compared to \$3.45 for a gas-powered 72-inch out-front rotary. This represents a 50 percent difference in cost per acre between the two mowing machines.

That percentage of savings on the 11-gang mower increases as the time period grows or if the mowing area becomes larger. For instance, the cost per acre for the same 80 acres over a 10-year period on the 11-gang unit would decrease by 22 percent to \$1.34.

The cost per acre for the gas-powered 72-inch out-front rotary would remain about the same over 10 years for the same 80 acres. This is

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because a rotary machine by nature wears out faster than a reel mower due to its constant high rpm operation and impact-style mowing.

It is likely that a rotary mower would need total replacement over a 10-year period with the given mowing schedule. This would mean that the percentage of difference in cost per acre between the 11-gang pull-behind and the gas-powered 72-inch out-front rotary would increase to 61 percent over 10 years.

In the given example, each 25 cents saved in cost per acre turns into a \$10,000 savings over a 10-year period. Each \$1 saved in cost per acre turns into a \$40,000 savings over 10 years.

These results show that a small machine can be more expensive to operate per year than a larger one.

When figuring out a long-term budget, it may often be more economical to purchase a larger machine with greater horsepower and larger cutting width.

However, if only a small area of mowing is required, or where maneuverability around obstacles or in tight areas is important, a small mower or combination of large and small mowers will be more practical.

The main question when purchasing mowing equipment should be, "What can I get out of this machine in the long run?"

By knowing your mowing requirements, you will be better able to evaluate mowing machinery based on durability, life expectancy, fuel efficiency, quality of cut, cost per acre and cost per year. □

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