

Pinpoint

Your Sod Harvesting Costs

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COMPETENT LABOR continues to be a major problem in the sod industry. Harvesting sod and preparing it for sale pose many labor problems. Because of timeliness, sod must be used within a very short time, otherwise internal heating can quickly ruin loaded sod.

Maintaining a labor force large enough to harvest sod quickly means that during inactive periods a larger work force has to be paid for doing little or no work. This, of course, increases the cost without increasing the productivity. Some sod growers have tried to solve this by keeping a work force for only harvesting sod and paying them on a piecework basis. The harvesting crew would commonly be paid 3¢ per yard of sod harvested, or \$30 per 1000 yards of sod. Since the harvesting crew would split the \$30, the fewer men needed to do the work, the more each would be paid. This tends to make the harvesting crew more efficient. Thus, constant supervision is unnecessary because the harvesting crew is essentially self-regulating.

Although this method has some advantages, it also poses an even

greater problem. Since the harvesting crew is really a "free agent" and not under the grower's employ, the men may leave during a slow period of harvesting—especially during the summer—and the grower may not have anyone to harvest sod during the early fall rush period. Consequently, the sod grower may lose some very profitable early sales.

To solve the labor problem during harvesting, many growers are considering the use of mechanical harvesters. Due to the new developments by machinery manufacturers, the extent of mechanization is now limited only by the amount of money the grower has available to invest.

New Machinery And Use of Pallets Considered

Many growers are considering expanding to additional machinery and palletized loading. Some are even considering going to a mechanized sod harvesting operation that lifts, rolls, and elevates the sod to the pallets. All of these changes are designed to reduce the amount of hand labor needed to harvest sod.

There are several factors that

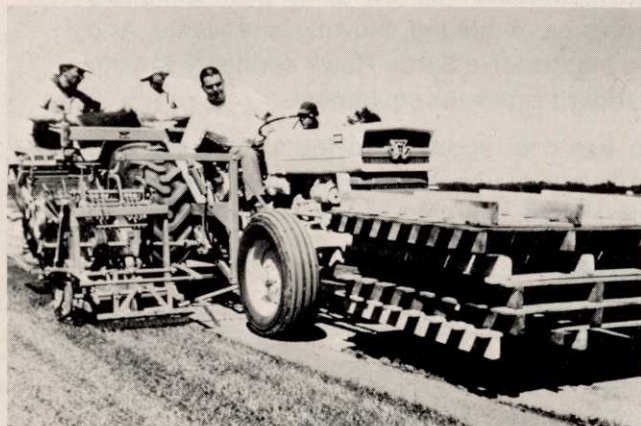
a grower should consider before investing a lot of money in additional machinery:

1. *The additional cost of owning and operating the machinery.* As a grower invests in more machinery, the cost of owning and operating that machinery goes up as would be expected. (See Chart I) But as the amount of machinery is increased, the labor cost goes down. (See Chart I) This is due to the greater labor efficiency by using machinery. (See Chart II)

2. *The weight of sod being handled.* Indeed, the weight of the sod may be the decisive factor in deciding to use additional machinery. For example, we found that on muck or organic type soil, the weight per yard of sod was 31.3 pounds. But for mineral type soils, the weight per yard was 49.0 pounds. This additional weight of sod may materially slow down the workers, especially toward the end of the day. If you are getting good efficiency in the morning but not in the afternoon, this may be a factor.

3. *The availability of good labor in your area of the country.* If adequate labor is available in your area at this time, you may be ahead to expand your business and postpone purchase of more machinery. This is a money management problem. Although machinery may save some expense, you might be ahead even more by obtaining more land, expanding irrigation facilities, purchasing fertilizer, and so on. A partial budget will help answer this problem for you. If labor is short, however, harvesting machinery which uses less workers will be advantageous.

4. *How efficiently are you pres-*



Self-propelled sod harvester cuts, rolls, elevates sod to be loaded onto pallets. Extra pallets are carried on front of Ryan harvester.



Fork lift to load pallets was one method used in Illinois tests. Unit pictured here is on Rapp Farms, Inc., Farmingdale, N. J.



Hand rolling of cut sod is still an expedient method for many producers, particularly if they have the labor supply.



Hand loading of sod with sod elevator was part of test. Pictured is similar operation at Halmich Sod Nurseries, Brown City, Mich.

ently using the labor that you do have? Although efficiency, as measured by yards of sod harvested per man hour, may increase with additional machinery, (See Chart II) there may be ways to get more efficiency from your present operation. Analyze your operation for wasted motion. See if some steps can be saved. Sometimes a little pre-planning before the beginning of the working day may speed up the entire day's operation and make it more efficient. Cutting from one field all day instead of moving to several fields the same day may reduce the non-productive time as much as 10%. Non-productive time in agricultural occupations is extremely high compared to industry.

5. How fast do you have to harvest sod to meet demands? The amount of sod that is needed per day varies considerably. Since sod harvesting equipment has a limited output, the initial cash expense of purchasing enough harvesting equipment for the peak periods will tie up a lot of money. For example, a sod harvester may have a sod harvesting capacity of 5000 yards in an 8 hour day. If you need 10,000 yards in this time period, you will need to have two machines of this capacity or have two crews and run the same machine for 16 hours per day. Additional men on a harvesting crew that uses maximum mechanization

may not always increase production and, in fact, may decrease productivity per man-hour—especially when inexperienced men are added to the harvesting crew.

Know Your Harvesting Costs

Before a grower decides how much to invest in additional machinery, he should know what his present harvesting costs are. We have found that when there is little mechanization that is, using only a sod cutter—and the rolling and loading is done by hand, the labor cost is 2.6¢ per yard of sod.

If a sod grower decides to use a sod cutter, sod roller, fork-lift truck, and palletized loading, with the only hand work being

to place the sod on the pallets, then the labor cost is reduced to 2.06¢ per yard of sod.

These last two methods of harvesting sod are quite common in Illinois. Some growers are considering the use of still more machinery and less hand labor in harvesting sod. Several machinery companies are manufacturing harvesting equipment that will cut, lift, roll, and palletize the sod in one operation with as few as three or four men. A self-propelled sod harvester of this type was tested and we found the labor cost to be 1.5¢ per yard of sod for one yard rolls of sod.

As the amount of machinery

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Table I. Harvesting Costs Per Yard of Sod.

Type of operation	Labor cost	Machine cost	Total
1. Mechanical sod cutter; all other work done by hand labor.	2.6¢	0.15¢	2.75¢
2. Mechanical sod cutter, sod roller, fork-lift, pallets.	2.06¢	0.45¢	2.51¢
3. Self-propelled sod harvester to cut, roll, lift, palletize sod, using a fork-lift truck to move pallets to end of field for loading.	1.50¢	1.0¢	2.50¢

Table II. Efficiency of Various Harvesting Operations.

Type of operation	Yards of sod per man hour
1. Sod cutter; all other work done by hand.	70.2
2. Sod cutter, sod roller, fork-lift, palletized sod.	83.6
3. Sod harvester as tested and explained above.	133.3

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NWCC Conference

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season, water yields from the area were increased 300,000 gallons per acre for the May-September period.

Secretary-Treasurer Bing announced that the more than 500-page volume of the 1968 proceedings was again available. Cost is \$4.50 for the complete report.

Sod Harvesting Costs

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increases, however, so does the cost of owning and operating that machinery. The self-propelled sod harvester that we tested has an annual cost of \$1607.64. This includes the operational costs as well as the fixed costs of owning the machine.

Assuming that the average sod farm has 84 acres, (See WTT April 1965) and assuming that one-half of this is harvested each year, the yearly machinery harvesting cost per acre would be \$38.28. This is just less than 1¢ per yard of sod, assuming that the grower can harvest and sell 4000 yards of sod per acre. The total harvesting cost of labor and machinery would be 2.5¢ per yard of sod sold. Thus, the savings of using machinery in place of using hand labor is not so much a savings of cost as it is a savings of labor. This will be especially helpful in areas where labor is difficult to obtain at satisfactory prices.

From this study, it would seem that the cost of harvesting sod,

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both labor and machinery costs, will vary from 2.5¢ to 3.0¢ per yard (9 sq. feet) of sod sold, depending on the method of harvesting and the efficiency of the harvesting operation.

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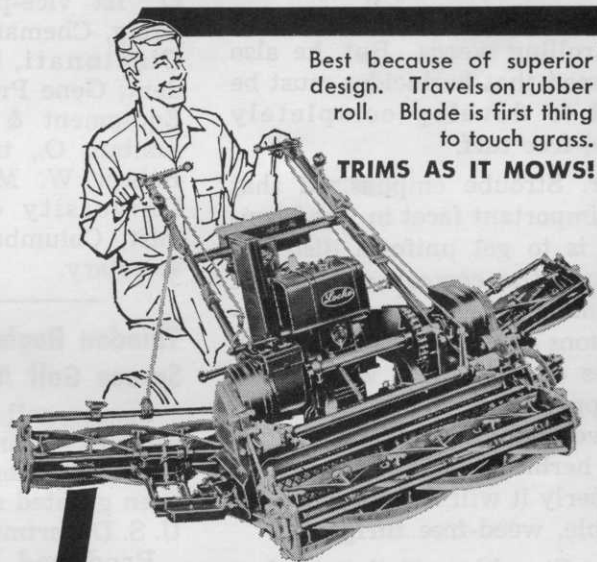
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