FARM BUSINESS MANAGEMENT

FARM ECONOMICS Facts & Opinions

Department of Agricultural and Consumer Economics • College of Agricultural, Consumer and Environmental Sciences
University of Illinois at Urbana-Champaign

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SKIP-ROW PLANTER COSTS

Skip-row planters, which allow corn to be planted in 30-inch rows and soybeans to be planted in 15-inch rows, have become relatively popular in Illinois within the last several years. In this article, additional costs associated with skip-row planters are examined. Specifically, additional costs associated with skip-row planters are stated on a per acre basis for each acre planted to soybeans. Costs are examined for 12-row and 16-row planters on farm sizes ranging from 1,000 acres up to 1,800 acres. Results indicate that skip-row planters add between $3.62 and $7.90 per acre for each acre of soybeans planted.

Planters

The study compared costs for two sets of planters. The first set uses a 12-row planter as its base. A 12-row planter that only plants 30-inch rows is compared to a skip-row planter that plants corn in 30-inch rows and soybeans in 15-inch rows. The 12-row planter that only plants 30-inch rows has an estimated list price of $38,000 while the skip-row planter has an estimated list price of $73,000 (see Table 1).

Table 1. List Prices on Planters.

Planter Size	No Skip Rows	Skip Row
12-row	$38,000	$73,000
16-row	$60,000	$92,000

The second set of planters uses a 16-row planter as the base. A conventional 16-row planter that only plants 30-inch rows is compared to a skip-row planter that allows planting of 15-inch rows. The 16-row planter has an estimated list price of $60,000 while the skip-row planter has a list price of $92,000.

Cost Calculations

Per year costs are calculated for the above planters. Yearly costs for the planter without skip-rows are subtracted from the yearly costs for skip-row planters to arrive at additional costs associated with skip-row planters. Since the skip-rows are only used for soybeans, additional costs are associated with soybean acres. Generally, using skip-rows must result in higher soybean yields to justify the additional expense associated with skip-row planters.

Average yearly costs were estimated using *Machinery Economics*, a Microsoft Excel spreadsheet that is available for download from the *FAST* section of *farmdoc* (http://www.farmdoc.uiuc.edu/fasttools/index.html). This spreadsheet calculates power costs associated with farm machinery including charges for depreciation, interest, housing, insurance, repairs, fuel and lubrication, and labor. Inputs into the model for this analysis are 1) the purchase price is 85% of the list price, 2) the interest rate is 8%, 3) housing and insurances cost 1% of the value of the machine, 4) diesel fuel costs $1.00 per gallon, 5) lubrication costs 10% of fuel costs, 6) labor has a $12.50 per hour rate, 7) labor time is 110% of tractor time, 8) planters are operated at six miles per hour and have a 70% efficiency, and 9) planters have a 10 year life. A 135 horse power tractor is used to pull 12-row planters and a 150 horse power tractor is used to put 16-row planters.

Table 2. Power Costs for 12-Row Planter, With and Without Skip-Rows, 1000 to 1400 Acres.

	Acres		
Planter	1,000	1,200	1,400
Panel A. Average Yearly Costs			
No Skip Row	$7,450	$8,208	$9,016
Skip Row	8,980	9,624	10,304
Panel B. Per Acre Costs without Skip-Rows			
	$7.45	$6.84	$6.44
Panel C. Per Acres Skip-Row Costs for Soybeans			
Additional costs	$7.90	$7.00	$6.34
Soybean costs	$15.35	$13.84	$12.78
Panel D. Soybean Yield Increase to Cover Costs			
$5.00 price	1.6	1.4	1.3
$6.00 price	1.3	1.2	1.1

Costs for 12-Row Planters

Power costs are shown for 12-row planters in Table 2 for planted acres of 1,000, 1,200, and 1,400 acres. For 1,200 acres, average yearly costs without skip-rows are $8,208 while average yearly costs with skip-rows are $9,624. Skip-rows add $1,416 in costs. On a per-acre basis, skip-rows add $7.00 to the cost to planting soybeans given that one-half the acres are planted to soybeans. Costs without skip-rows are $6.84 (see Table 2). This means that skip-rows result in a $13.84 cost for planting soybeans ($6.84 cost without skip-rows plus $7.00 in additional costs for skip-rows).

Additional costs for skip-row planters decrease with higher numbers of acres planted. Additional skip-row costs are $7.90 for 1,000 acres (500 acres of soybeans), $7.00 for 1,200 acres, and $6.34 for 1,400 acres. Cost reductions occur because depreciation and interest costs are spread over more acres. Reductions in these costs more than offset increases in repair costs.

The additional costs require increases in soybean yields to economically justify the additional costs associated with skip-row planters. For 1,200 acres planted, the $7.00 in additional per acre costs require 1.4 bushels of additional soybeans to break-even at a $5.00 soybean price (see Panel D of Table 2). The break-even yield is reduced to 1.2 bushels at a $6.00 price

Costs for 16-Row Planters

Power costs for 16-row planters are shown in Table 3 for planted acres of 1,400, 1,600, and 1,800 acres. Additional costs associated with skip-rows are $4.28 per acre for 1,400 acres, $3.88 for 1,600 acres, and $3.62 for 1,800 acres.

Table 3. Power Costs for 16-Row Planter, With and Without Skip-Rows, 1,400 to 1,800 Acres.

	Acres		
Planter	1,400	1,600	1,800
Panel A. Average Yearly Costs			
No Skip Row	$11,008	$11,754	$12,520
Skip Row	14,432	15,246	16,140
Panel B. Per Acre Costs without Skip-Rows			
	$6.88	$6.53	$6.26
Panel C. Per Acres Skip-Row Costs for Soybeans			
Additional costs	$4.28	$3.88	$3.62
Soybean costs	$11.16	$10.41	$9.88
Panel D. Soybean Yield Increase to Cover Costs			
$5.00 price	0.9	0.8	0.7
$6.00 price	0.7	0.6	0.6

Summary

Skip-row planters have costs over a non skip-row planter that can be attributed to planting soybean acres. These costs range from $3.62 per acre up to $7.90 for the planters and acre sizes examined in this study. To economically justify these higher costs, higher soybean yields must be obtained using a skip-row planter.

Results are dependent on the assumptions used. The *Machinery Economics* spreadsheet (http://www.farmdoc.uiuc.edu/fasttools/index.html) can be used to examine cost changes for scenarios than those presented in this newsletter.

Issued by: Gary Schnitkey, Department of Agricultural and Consumer Economics