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What Does It Cost You To Grow Soybeans?

a worksheet

You should know your soybean production costs to make intelligent management and marketing decisions. Knowing these costs may be particularly helpful in deciding whether to grow soybeans or alternative crops.

This worksheet was designed to help you calculate your own costs of producing soybeans through harvest. You should not include storage and marketing costs.

How to use this Worksheet

This worksheet is designed so that last year's costs for each item can be entered directly from your record book and/or income tax return. Enter only the share of the costs that should be charged to soybean production.

After computing last year's cost, you may now want to estimate soybean production costs for the next crop.

Section A—Lines 1-11. Operating Costs

Operating (variable) costs are those directly related to production. These costs can be taken from your farm record book, income tax return, or the actual cost of the purchased inputs and/or machine hire operations. Deduct the anticipated dollar amount of patronage dividend and refunds from the appropriate expense items. For share rented land, include only your share of the following expenses:

- A1. **Seed**—Cost can be estimated as follows:
- The cost per bushel paid for soybean seed and inoculation, multiplied by the quantity per acre, plus
 - Market value of any owned soybean seed used (including cost of inoculation and cleaning) multiplied by quantity per acre.
- A2. **Fertilizer**—To estimate fertilizer cost, enter (a) from your record book the cost of fertilizer applied to all soybean acres or (b) where fertilizer is a joint expense for two crops such as corn and soybeans (fertilizer applied on corn crop for both corn and soybeans), charge all nitrogen to

prior crop; but allocate phosphate and potash equally between the two crops; (c) if prior year's application rate is unknown, then base fertilizer charge on approximate removal by soybeans—1 pound of P_2O_5 and 1.5 pounds of K_2O per bushel of soybeans produced. Lime costs per acre should be prorated over its useful life of 2 to 6 years.

Soybeans should receive a fertility credit equal to the value of one pound of nitrogen per bushel soybean yield, if following crop is not soybeans or another legume.

- A4. **Chemicals**—Include expenditures for herbicides, insecticides, and any other chemicals directly associated with the soybean enterprise.
- A5. **Custom Hire**—Include payments made for custom hiring of field tillage operations, aerial spraying, harvesting, and hauling harvested grain to storage. Include costs for custom hauling and applying fertilizer.

Soybeans Cost-of-Production Worksheet¹

	Last Year's Cost		Estimated/ Acre Cost for Next Crop ²
	Total	Per Acre ²	
Yield Per Acre (your share)	_____	_____	_____
A. Operating (variable) costs (your share)			
1. Seed and inoculation (_____ bu. x \$/bu. _____)	\$ _____	\$ _____	\$ _____
2. Fertilizer (cost minus fertility credit)	_____	_____	_____
3. Limestone	_____	_____	_____
4. Chemicals	_____	_____	_____
5. Custom hire	_____	_____	_____
6. Fuel, lube, and repairs	_____	_____	_____
7. Crop insurance	_____	_____	_____
8. Hired labor (_____ hrs. x \$/hr. _____)	_____	_____	_____
9. Other	_____	_____	_____
10. Misc. expenses	_____	_____	_____
11. Interest on operating expenses	_____	_____	_____
TOTAL OPERATING (VARIABLE COSTS)	_____	_____	_____
B. Labor and management (operator and family)			
12. Fixed labor (_____ hrs. x \$/hr. _____)	_____	_____	_____
13. Management	_____	_____	_____
TOTAL LABOR AND MANAGEMENT COSTS	_____	_____	_____
C. Machinery Ownership			
14. Depreciation	_____	_____	_____
15. Interest	_____	_____	_____
16. Taxes and insurance	_____	_____	_____
17. Shelter	_____	_____	_____
18. TOTAL MACHINERY OWNERSHIP COSTS	_____	_____	_____
D. Land Charges			
19. Cash rent	_____	_____	_____
20. Land charge on owned land (including taxes)	_____	_____	_____
TOTAL LAND CHARGES	_____	_____	_____
E. TOTAL COST OF PRODUCTION	_____	_____	_____
TOTAL COST/BUSHEL (your cost per acre divided by your share of yield)	_____	_____	_____
	XXX	_____	_____

¹ Base all calculations on *your share* of yield and cost whether this be total, operator's share, or landlord's share.

² When calculating cost of production for double crop soybeans: If a small grain crop is already growing on the land, include the costs that should be considered in deciding whether to grow double crop soybeans this year. This will usually be only the variable costs.

A6. **Fuel Lube and Repairs**—For diversified farms you need a method of allocating the proportion of fuel and lube costs incurred by the soybean enterprise. Prorate a portion of your total fuel and lube cost to soybeans for each powered machine, according to the percentage that the machine is used for soybean production. Following is a guide in allocating fuel, lube, and repair costs:

- These costs would usually be only 60 to 80 percent as high for soybeans as for corn.
- These costs would usually be 1.3 to 1.5 times higher for soybeans as for wheat (not including straw harvest).
- These costs would be only 35 to 45 percent as high for soybeans as for cotton.
- Electricity and fuel costs for irrigation should be included.

A7. **Premiums** for crop insurance.

A8. **Hired Labor**—Insert the number of hired labor hours used in the soy-

bean enterprise multiplied by the hourly wage rate. The wage rate should include social security, insurance and other benefits.

A9. **Other**—Enter costs for other items not listed. This might include, for example, occasional cost of drying soybeans.

A10. **Miscellaneous Expenses**—Include expenses such as telephone, farm organization dues, farm share of utilities, accounting, etc., that can be charged against the soybean enterprises. These types of expenses might be allocated on the proportion of soybean acres to total crop acres, or to the proportion of soybean income to total farm income.

A11. **Interest on Operating Capital**—To estimate interest on operating capital, multiply one-half of total operating (variable) costs (total lines 1 to 11), MINUS any custom harvest expense, by the current interest rate for short-term loans.

Section B—Lines 12-13 Fixed Labor and Management

B12. **Fixed Labor**—Insert number of unpaid (operator or family) labor hours actually used in the soybean enterprise multiplied by the hourly cost for hiring comparable labor. Total labor (direct and indirect) will typically average 2 to 5 hours per acre.

B13. **Management**—Insert the value of your management. One method of calculation is to use 30 to 40 cents per bushel for your share of normal yield. Another method is to use 6 to 7 percent of your share of the gross value of the soybeans.

Section C—Lines 14-17 Machinery Ownership

Machinery and irrigation equipment ownership costs are depreciation, interest, taxes and insurance, and shelter. For diversified farms, these costs should be computed for each machine and allocated to the production of soybeans according to the percentage that the machine is used for soybean production.

C14. **Depreciation**—This cost reflects loss in value due to age, use, and obsolescence. Machinery and equipment depreciation can be taken from farm records or calculated by dividing the differences between the current value and salvage by the years of remaining life.

C15. **Interest**—Interest on the machinery investment reflects opportunity cost, that is, the cost of the foregone opportunity to use the money in some other alternative. Interest is calculated on the current value of the machine (what you could sell the machine for). If you are using borrowed money, the interest rate is the opportunity cost. Otherwise, use the rate of return in your best alternative investment.

C16. **Taxes and Insurance**—Personal property tax rates vary from State to State and community to community.

Use the local rate multiplied by the assessed value. For insurance, use the rates of 0.5 to 1.0 percent times the current value of the machine or machines.

- C17. **Shelter**—An appropriate charge for shelter is 1 percent of the current machinery value, or 20 to 25 cents per square foot of space occupied.

- C18. **Total Machinery Ownership Costs**—Based on machine usage in the Corn Belt, these machinery ownership costs for soybeans will usually be only about 70 to 85 percent of similar costs for corn, but one and one-half to double these costs for wheat (not including straw harvest).

Section D—Lines 10-20 Land Charges

The completion of this part of the worksheet depends on whether land is owned or leased, or some combination of the two. Do not complete this section if all land is rented on a crop-share basis, because the land charge for crop-share lease arrangements has been accounted for by the share of crop production that goes to the landowner.

- D19. **Cash Rent**—Insert the cash rent paid on land used for the soybean enterprise.
- D20. **Land Charge on Land Owned (Including Taxes)**—There are several methods for calculating a land charge for owned land which will result in different dollar amounts of charge against soybean production. The following method is a simple

procedure that will give a fair and reasonable allowance for the use of land.

A land charge (including taxes) for owned acres should be based on the opportunity cost of its use, that is, what it would return if leased out to another producer, either for cash or crop-share rent. This should be the return he would receive as a landowner. From this return, he would pay real estate taxes, maintain the land (tile, open ditches, etc.), and provide a return on his investment. Note: This is the return on land investment exclusive of appreciation in land value.

Section E—Total Cost of Production

Add the totals for Sections A, B, C, and D to obtain the total cost of production. This cost

can be converted to a cost per bushel by dividing it by your share of production.

Reprinted by Purdue University
Cooperative Extension Service
West Lafayette, Indiana 47907

Prepared by the FARM MANAGEMENT WORKGROUP of the Soybean Industry Resource Committee: Paul Robbins, Purdue University; Buel Lanpher, SEA-Extension, USDA; Jim McGrann, Iowa State University; Al Tinsley, Clemson University; Lynn Lutgen, University of Nebraska; Tom Frey, University of Illinois; Robert W. Judd, National Soybean Crop Improvement Council, and Keith J. Smith, Director of Research, American Soybean Association. Membership in the Soybean Industry Resource Committee consists of the State and SEA-Extension specialists, research specialists, and producer representatives of the American Soybean Association.

On January 24, 1978, four USDA agencies — Agricultural Research Service (ARS), Cooperative State Research Service (CSRS), Extension Service (ES), and the National Agricultural Library (NAL) merged into a new organization, the Science and Education Administration (SEA), U.S. Department of Agriculture.

This publication was prepared by the Science and Education Administration, Extension, formerly the Extension Service.

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Cooperative Extension Work: United States Department of Agriculture and State Land-Grant Universities Cooperating. Issued February 1979.