

# Corn-Soybeans-Wheat Rotation Tool

With this program, the user can evaluate the economic returns of changing corn-soybeans-wheat rotations.

The Corn-Soybeans-Wheat Rotation Tool uses crop revenues and farm costs to compare the per-acre returns for three different crop rotations:

- 1/2 corn - 1/2 soybeans
- 1/3 corn - 1/3 soybeans - 1/3 wheat
- 1/3 corn - 1/3 soybeans - 1/3 wheat followed by double-crop soybeans

## Inputs

The below graphic shows the input section of the tool. Entries are made in cells where the numbers are in blue font. The program asks for a per-acre farm budget for four different crops: corn, soybeans, wheat, and double-crop soybeans.

Budget Input				Double Crop
Default = Southern Ill.	Corn	Soybeans	Wheat	Soybeans
Average yields (bu. per acre)	155	50	65	27
Market price (per bu.)	2.75	6.25	3.75	6.25
Loan deficiency payment	0.00	0.00	0.00	0.00
Effective price (per bu.)	\$2.75	\$6.25	3.75	6.25
Direct and CC payments	19	19	19	0
Revenue per acre	\$445	\$332	\$263	\$169
Direct Costs	\$ per acre			
Fertilizer and lime	\$75	\$25	\$48	\$10
Pesticides	40	29	30	12
Seed	47	30	11	28
Drying and storage	7	3	4	2
Crop insurance	8	6	3	3
Total Direct Costs	\$177	\$93	\$96	\$55
Power Costs				
Machine hire/lease	\$6	\$6	\$6	\$3
Utilities	3	3	3	1
Machine repair	15	15	15	14
Fuel and Oil	16	14	14	13
Light Vehicle	1	1	1	1
Machinery depreciation	23	22	20	18
Total Power Costs	\$64	\$61	\$59	\$50
Overhead Costs				
Hired labor	\$12	\$12	\$12	\$12
Building repair and rent	5	5	5	0
Building depreciation	5	5	5	0
Insurance	4	4	4	0
Misc.	5	5	5	0
Interest (non-land)	17	15	12	4
Total overhead costs	\$48	\$46	\$43	\$16
Total non-land costs	\$289	\$200	\$198	\$121
Return to land and operator	\$156	\$132	\$65	\$48



If not all inputs are known, clicking **Budget Defaults** on the upper right corner of the screen allows the user to enter a default budget for the four crops. A box appears where the user can select the appropriate Illinois region for the analysis. This data is collected from farmers enrolled in the Illinois Farm Business Farm Management Association. After inserting budget defaults, the user can change specific entries if necessary.

The bottom line of the input screen calculates revenue minus total costs for each crop.

### Rotation Returns

The program computes per-acre returns (revenue less costs) for three different crop rotations for a single planting season:

- 1/2 corn - 1/2 soybeans
- 1/3 corn - 1/3 soybeans - 1/3 wheat
- 1/3 corn - 1/3 soybeans - 1/3 wheat followed by double-crop soybeans

Rotation Returns	
Rotation	Return
Corn - soybeans	<b>\$144</b>
Corn - soybeans - wheat	<b>\$118</b>
Corn - soybeans - wheat - DC beans	<b>\$133</b>

As seen in the graphic to the right, a 50-50 corn-soybeans rotation yields a return of \$144 per acre, which is based on the revenue and cost information entered in the input section. Furthermore, a 1/3 corn - 1/3 soybeans - 1/3 wheat rotation results in a \$118 per-acre return, while a 1/3 corn - 1/3 soybeans - 1/3 wheat followed by double-crop soybeans returns \$133 per acre. The rotation generating the highest return is economically preferred. Calculations in this example are based on budget defaults for Southern Illinois farm ground.