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Cost to Produce Corn and Soybeans in Illinois—2023

Bradley Zwilling

Illinois FBFM Association and Department of Agricultural and Consumer Economics
University of Illinois

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In 2023, the total of all economic costs per acre for growing corn in Illinois averaged $1,301 in the northern section, $1,342 in the central section for farmland with "high" soil ratings, $1,291 in the central section for farmland with "low" soil ratings, and $1,214 in the southern section. Soybean costs per acre were $915, $967, $905 and $880, respectively (see Table 1). Costs were lower in southern Illinois primarily because of lower land costs. The total of all economic costs per bushel in the different sections of the state ranged from $5.68 to $6.42 for corn and from $12.90 to $14.43 for soybeans. Variations in these costs were related to weather, yields, and land quality.

These figures were obtained from farm business records kept by farmers enrolled in the Illinois Farm Business Farm Management Association. The samples included only farms with more than 500 acres of productive and nearly level soils in each area of the state; these are farms without livestock. Farms located in the 22 counties north and northwest of the Illinois River are included in the sample for northern Illinois. Farms from 36 counties below a line from about Mattoon to Alton are in the sample for southern Illinois. The remaining 44 counties make up the sample for central Illinois. The sample farms averaged 1,882 tillable acres in northern Illinois, 1,619 acres in the central section with high soil ratings, 1,625 acres in the central section with lower soil ratings, and 1,801 acres in southern Illinois.

Cost of Production for Corn Compared to 2022

Costs per bushel of corn in 2023 as compared to 2022 were higher in all regions of the state. Costs per bushel were increased even with higher yields due to greater fertility, seed, machinery depreciation, non-land interest and land costs. Costs per bushel were 52 cents higher in northern Illinois, 72 cents higher in central Illinois with the higher rated soils, 78 cents higher in central Illinois with the lower rated soils and 85 cents higher in southern Illinois.

The average corn yield in 2023 was 1 bushel per acre less than 2022 in northern Illinois, 3 bushel lower in central Illinois and 8 bushels lower than 2022 in southern Illinois. The 2023 average corn yield in the different geographical locations ranged from 1 bushel lower to 17 bushels per acre higher than the five-year average from 2019 to 2023.

Costs per acre for corn were higher in all the different geographic regions in Illinois compared to 2022. Across the state, total costs per acre to produce corn increased from 10 to 14 percent. Non-land interest costs increased the most statewide.

Cost of Production for Soybeans Compared to 2022

Production costs per bushel of soybeans in 2023 in Illinois compared to 2022 increased across the state. Costs per bushel increased due to yields staying similar to 2022, but with the same cost increasing as for corn, except for seed costs in southern Illinois. Soybean yields ranged from no change to 4 bushels per acre higher in 2023 compared to 2022. Changes in costs per bushel ranged from 58 cents higher in southern Illinois to $1.28 higher in central Illinois with lower soil ratings.

Total costs per acre for soybeans increased in Illinois when compared to 2023. Costs increased $77 per acre in northern Illinois, $108 per acre in central Illinois with the higher rated soils, $112 per acre in central Illinois with the lower rated soils and $78 per acre in southern Illinois when compared to 2022. Average soybean yields in the different areas ranged from 2 bushel higher to 5 bushel higher per acre when comparing to the five-year average from 2019 to 2023.

State Averages

Total costs to produce corn for all combined areas of the state were $1,303 per acre. This is $138 per acre higher than 2022. Variable costs increased $50 per acre or 8 percent, other nonland costs increased $78 per acre, and land costs increased $10 per acre. In 2023, cash costs accounted for 50 percent of the total cost of production for corn, other nonland costs were 28 percent, and land costs were 22 percent. The average corn yield for all combined areas of the state was 224 bushels per acre resulting in a total cost of production of $5.82 per bushel. The average corn yield in 2023 was the second highest on record and 3 bushels to the acre less than the record year of 2022. Total costs per acre were the highest on record while total costs per bushel were the second highest on record with 2012 being the highest.

Total cost per acre to produce soybeans increased, from $833 per acre in 2022 to $929 per acre in 2023. Variable cash costs accounted for 35 percent of the total cost of production for soybeans, other nonland costs 35 percent and land costs 31 percent. The average soybean yield for all combined areas of the state was 69 bushels per acre resulting in a total cost of production of $13.46 per bushel. The cost per bushel to raise soybeans the last five years averaged $11.44 per bushel.

2024 Forecast

Forecasts for Illinois production costs in 2024 look to decrease using the Department of Agricultural and Consumer Economics at the University of Illinois's 2024 crop budgets and the USDA's Cost-of-Production Forecasts as a guide. For corn, 2024 variable costs are projected to decrease 9 percent, mainly due to lower soil fertility costs. For 2024, soybeans have a similar projected percentage decrease of variable costs of 7 percent. This decrease is also primarily due to lower soil fertility costs. These decreases coupled with higher interest and land costs have the possibility to lead to much lower returns due to currently lower projected grain prices for 2024.

The author would like to acknowledge that data used in this study comes from Illinois Farm Business Farm Management (FBFM) Associations across the state. Without their cooperation, information as comprehensive and accurate as this would not be available for educational purposes. FBFM, which consists of 5,000 plus farmers and 65 plus professional field staff, is a not-for-profit organization available to all farm operators in Illinois. FBFM field staff provide on-farm counsel with recordkeeping, farm financial management, business entity planning and income tax management. For more information, please contact the State FBFM Office located at the University of Illinois Department of Agricultural and Consumer Economics at 217-333-8346 or visit the FBFM website at www.fbfm.org.

A more complete discussion of how some of the costs are calculated can be found under Illinois Farm Management Handbook in the management section of *farmdoc*:
https://farmdoc.illinois.edu/handbook/cost-to-produce-corn-and-soybeans-in-illinois

Table 1. Cost Per Acre for Growing Corn and Soybeans on Illinois Grain Farms Without Livestock in 2023

	Corn				Soybeans			
	Northern	Central [1] High	Central [2] Low	Southern	Northern	Central [1] High	Central [2] Low	Southern
Number of Farms	323	494	266	176	323	494	266	176
Acres in crop	1,095	834	830	801	740	759	752	828
NONLAND COSTS								
Variable Costs:								
Soil Fertility	$272	$289	$282	$284	$74	$87	$83	$87
Pesticides	104	124	122	115	65	75	76	76
Seed	128	129	136	120	80	83	72	74
Drying	24	24	21	9	-	-	1	0
Repairs, fuel and hire	106	96	99	100	91	83	90	90
Total variable costs	$634	$662	$660	$628	$311	$327	$321	$327
Percent change from 2022	6%	9%	11%	7%	5%	8%	10%	2%
Other nonland costs								
Labor	$55	$53	$57	$68	$48	$50	$55	$62
Buildings	30	25	25	28	15	21	17	18
Storage	10	11	10	4	4	6	4	3
Machinery depreciation	78	85	82	86	66	74	71	82
Nonland interest	122	130	120	118	101	116	105	111
Overhead	73	68	69	69	71	64	65	64
Total, other costs	$367	$372	$364	$373	$305	$332	$317	$341
Total, nonland costs	$1,001	$1,034	$1,024	$1,001	$616	$659	$638	$667
Percent change from 2022	12%	16%	17%	12%	13%	17%	18%	11%
LAND COSTS								
Total land costs[3]	$300	$308	$267	$213	$300	$308	$267	$213
TOTAL, all costs	$1,301	$1,342	$1,291	$1,214	$916	$967	$905	$880
Percent change from 2022	10%	13%	14%	11%	9%	13%	14%	10%
2023 yields, bushels per acre	229	232	224	189	66	75	69	61
Nonland costs per bushel	$4.37	$4.46	$4.57	$5.30	$9.33	$8.79	$9.25	$10.94
Total, all costs per bushel	$5.68	$5.79	$5.76	$6.42	$13.87	$12.90	$13.12	$14.43
2019-2023 average yield	212	222	208	190	63	70	64	58
Nonland costs per bushel	$4.72	$4.66	$4.91	$5.26	$9.74	$9.47	$10.04	$11.43
Total, all costs per bushel	$6.13	$6.05	$6.20	$6.38	$14.49	$13.90	$14.23	$15.08

Note: The last two lines of the table are costs based on 2019-2023 average yields

[1] Soil productivity ratings of 86 to 100

[2] Soil productivity ratings of 56 to 85

[3] Weighted average of owned, crop share and cash rent land costs

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References

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