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Cost to Produce Corn and Soybeans in Illinois—2015

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In 2015, the total of all economic costs per acre for growing corn in Illinois averaged $921 in the northern section, $896 in the central section for farmland with “high” soil ratings, $886 in the central section for farmland with “low” soil ratings, and $851 in the southern section. Soybean costs per acre were $656, $668, $629 and $631, 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 $4.48 to $5.22 for corn and from $10.12 to $12.13 for soybeans. Variations in this cost 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 1,366 tillable acres in northern Illinois, 1,342 acres in the central section with high soil ratings, 1,374 acres in the central section with lower soil ratings, and 1,794 acres in southern Illinois.

Cost of Production for Corn Compared to 2014

Costs **per bushel** of corn in 2015 as compared to 2014 were higher for all geographic areas of the state, except northern Illinois. Costs per bushel were higher due to lower yields. Costs per bushel were 14 cents lower in northern Illinois, 41 cents higher in central Illinois with the higher rated soils, 54 cents higher in central Illinois with the lower rated soils and 69 cents higher in southern Illinois.

The average corn yield in 2015 was 11 bushels per acre lower than 2014 in northern Illinois, 30 to 31 bushels lower in central Illinois and 31 bushels per acre lower in southern Illinois. The 2015 average corn yield in the different geographical locations ranged from 9 to 20 bushels per acre higher than the five-year average from 2011 to 2015.

Costs **per acre** were mostly lower in all the different geographic regions in Illinois compared to 2014. Across the state, total costs per acre to produce corn decreased 3 to 8 percent. Many costs decreased, including drying, repairs, fuel and land costs.

Cost of Production for Soybeans Compared to 2014

Production costs **per bushel** of soybeans in 2015 decreased in all areas of the state except southern Illinois as compared to 2014. Costs per bushel decreased mainly due to lower costs. Soybean yields were mixed when compared to the year before. Soybean yields ranged from 2 bushels per acre higher to 3 bushels lower per acre in 2015 compared to 2014. Changes in costs per bushel ranged from 77 cents lower in central Illinois with higher rated soils to 35 cents higher in southern Illinois.

Total costs **per acre** decreased in all geographic regions of the state when compared to 2014. Costs decreased $46 per acre in northern Illinois, $29 per acre in central Illinois with the higher rated soils, $14 per acre in central Illinois with the lower rated soils and $17 per acre in southern Illinois. Average soybean yields in the different areas ranged from 3 to 6 bushels per acre higher than the five-year average from 2011 to 2015.

State Averages

Total costs to produce corn for all combined areas of the state were $894 per acre. This figure decreased five percent compared to the year before. Variable costs decreased $34 per acre or 7 percent, other nonland costs decreased $2 per acre and land costs decreased $12 per acre. In 2015, cash costs accounted for 48 percent of the total cost of production for corn, other nonland costs were 28 percent, and land costs were 25 percent. The average corn yield for all combined areas of the state was 191 bushels per acre resulting in a total cost of production of $4.69 per bushel. The average corn yield was the fourth highest on record. Total costs per acre and total costs per bushel were the third highest on record.

Total cost per acre to produce soybeans decreased, from $680 per acre in 2014 to $652 per acre in 2015. Generally speaking, the same expenses that decreased for corn also decreased for soybeans. Variable costs accounted for 33 percent of the total cost of production for soybeans, other nonland costs 33 percent and land costs 34 percent. The average soybean yield for all combined areas of the state was 62 bushels per acre resulting in a total cost of production of $10.52 per bushel. The average soybean yield was the highest on record. The cost per bushel to raise soybeans the last five years averaged $11.36 per bushel.

Forecasts for Illinois production costs in 2016 and 2017 look to be less using Gary Schnitkey's 2016 crop budgets and the USDA's Cost-of-Production Forecasts as a guide. For corn, 2016 variable costs are projected to decrease 5 percent, mainly due to soil fertility costs. For 2017, the variable costs are expected to increase almost 2 percent from 2016. However, this is still approximately a 4 percent decrease from 2015. For 2016, soybeans have a larger projected decrease of variable costs of almost 9 percent. This decrease is also primarily due to soil fertility costs. In 2017, the soybean variable costs are expected to be 7 percent less than 2015. With tightening margins, these decreases are needed. However, additional cutting of overhead and land costs will need to occur to make returns more profitable in 2016 and 2017.

The author would like to acknowledge that data used in this study comes from the local Farm Business Farm Management (FBFM) Associations across the State of Illinois. Without their cooperation, information as comprehensive and accurate as this would not be available for educational purposes. FBFM, which consists of 5,500 plus farmers and 60 professional field staff, is a not-for-profit organization available to all farm operators in Illinois. FBFM field staff provide on-farm counsel with computerized 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 217-333-5511 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* (available here).

Table 1. Cost Per Acre for Growing Corn and Soybeans on Illinois Grain Farms Without Livestock in 2015

	Corn				Soybeans			
	Northern	Central [1] High	Central [2] Low	Southern	Northern	Central [1] High	Central [2] Low	Southern
Number of Farms	380	672	363	203	380	672	363	203
Acres in crop	841	698	710	807	486	628	624	818
NONLAND COSTS								
Variable Costs:								
Soil Fertility	$161	$166	$169	$171	$41	$56	$49	$54
Pesticides	59	66	68	66	35	40	43	46
Seed	120	118	123	108	69	76	65	62
Drying	17	15	13	8	0	1	1	0
Repairs, fuel and hire	70	58	60	69	60	50	53	64
Total variable costs	$427	$423	$433	$422	$205	$223	$211	$226
Percent change from 2014	-12%	-7%	-5%	-6%	-10%	-5%	-3%	-6%
Other nonland costs								
Labor	$48	$49	$50	$62	$43	$46	$49	$56
Buildings	26	17	19	26	13	14	13	15
Storage	7	14	13	6	3	8	4	4
Machinery depreciation	72	65	67	74	62	57	57	69
Nonland interest	51	50	48	47	42	45	42	47
Overhead	50	47	47	49	48	44	44	49
Total, other costs	$254	$242	$244	$264	$211	$214	$209	$240
Total, nonland costs	$681	$665	$677	$686	$416	$437	$420	$466
Percent change from 2014	-9%	-4%	-3%	-4%	-8%	-3%	-1%	-3%
LAND COSTS								
Total land costs[3]	$240	$231	$209	$165	$240	$231	$209	$165
TOTAL, all costs	$921	$896	$886	$851	$656	$668	$629	$631
Percent change from 2014	-8%	-5%	-3%	-3%	-7%	-4%	-2%	-3%
2015 yields, bushels per acre	194	200	185	163	61	66	61	52
Nonland costs per bushel	$3.51	$3.33	$3.66	$4.21	$6.82	$6.62	$6.89	$8.96
Total, all costs per bushel	$4.75	$4.48	$4.79	$5.22	$10.75	$10.12	$10.31	$12.13
2011-2015 average yield	187	189	175	146	58	60	56	49
Nonland costs per bushel	$3.65	$3.53	$3.88	$4.71	$7.17	$7.34	$7.57	$9.46
Total, all costs per bushel	$4.94	$4.75	$5.08	$5.85	$11.31	$11.23	$11.33	$12.81

Note: The last two lines of the table are costs based on 2011-2015 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

References

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