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Cost to Produce Corn and Soybeans in Illinois—2018

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In 2018, the total of all economic costs per acre for growing corn in Illinois averaged \$875 in the northern section, \$877 in the central section for farmland with “high” soil ratings, \$852 in the central section for farmland with “low” soil ratings, and \$814 in the southern section. Soybean costs per acre were \$641, \$665, \$622 and \$628, 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 \$3.70 to \$4.33 for corn and from \$8.99 to \$10.64 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 1,610 tillable acres in northern Illinois, 1,419 acres in the central section with high soil ratings, 1,435 acres in the central section with lower soil ratings, and 1,580 acres in southern Illinois.

Cost of Production for Corn Compared to 2017

Costs per bushel of corn in 2018 as compared to 2017 were higher in northern and central Illinois with the lower rated soils but lower in the other geographic areas of the state. Costs per bushel were higher in some areas due to lower yields. Costs per bushel were lower in other areas due to similar costs and higher yields. Costs per bushel were 9 cents higher in northern Illinois, 6 cents lower in central Illinois with the higher rated soils, 5 cents higher in central Illinois with the lower rated soils and 44 cents lower in southern Illinois.

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The average corn yield in 2018 was 5 bushels per acre lower than 2017 in northern Illinois, 10 bushels higher to 1 bushel lower in central Illinois and 19 bushels higher than 2017 in southern Illinois. The 2018 average corn yield in the different geographical locations ranged from 3 bushels to 13 bushels per acre higher than the five-year average from 2014 to 2018.

Costs per acre were mostly unchanged in all the different geographic regions in Illinois compared to 2017. Across the state, total costs per acre to produce corn varied from no change to a 1 percent increase. Drying and fertility costs decreased while machinery repairs, fuel and oil as well as land costs increased.

Cost of Production for Soybeans Compared to 2017

Production costs per bushel of soybeans in 2018 decreased in Illinois in comparison to 2017. Costs per bushel decreased due higher yields. Soybean yields were higher when compared to the year before. Soybean yields ranged from 4 to 8 bushels per acre higher in 2018 compared to 2017. Changes in costs per bushel ranged from 41 cents lower in central Illinois with the lower rated soils to \$1.21 lower in northern Illinois.

Total costs per acre increased in Illinois when compared to 2017. Costs increased \$4 per acre in northern Illinois, \$9 per acre in central Illinois with the higher rated soils, \$14 per acre in central Illinois with the higher rated soils and \$12 per acre in southern Illinois when compared to 2017. Average soybean yields in the different areas ranged from 3 bushels higher to 6 bushel per acre higher than the five-year average from 2014 to 2018.

State Averages

Total costs to produce corn for all combined areas of the state were \$861 per acre. This is \$5 per acre higher than 2017. Variable costs increased \$1 per acre or 0 percent, other nonland costs had no change, and land costs increased \$6 per acre. In 2018, cash costs accounted for 46 percent of the total cost of production for corn, other nonland costs were 29 percent, and land costs were 25 percent. The average corn yield for all combined areas of the state was 221 bushels per acre resulting in a total cost of production of \$3.90 per bushel. The average corn yield in 2018 was the highest on record, 5 bushels to the acre greater than 2017. Total costs per acre were the second lowest in the last seven years while total costs per bushel were the lowest in the last ten years.

Total cost per acre to produce soybeans increased, from \$637 per acre in 2017 to \$644 per acre in 2018. Power and equipment costs as well as land costs accounted for most of the increase. 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 68 bushels per acre resulting in a total cost of production of \$9.47 per bushel. The cost per bushel to raise soybeans the last five years averaged \$10.18 per bushel.

Forecasts for Illinois production costs in 2019 look to be more using Gary Schnitkey's 2019 crop budgets and the USDA's Cost-of-Production Forecasts as a guide. For corn, 2019 variable costs are projected to increase 5 percent, mainly due to soil fertility costs. For 2019, soybeans have a smaller projected increase of variable costs of 3 percent. This increase is also primarily due to soil fertility costs. With tightening margins, these increases lead to additional cutting of overhead and land costs occurring to make returns more profitable in 2019.

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 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 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*:
http://farmdoc.illinois.edu/manage/corn_soybeans_costs.pdf

Table 1. Cost Per Acre for Growing Corn and Soybeans on Illinois Grain Farms Without Livestock in 2018

	Corn				Soybeans			
	Northern	Central ¹ High	Central ² Low	Southern	Northern	Central ¹ High	Central ² Low	Southern
Number of Farms	345	610	347	188	345	610	347	188
Acres in crop	943	708	727	701	629	690	681	816
NONLAND COSTS								
Variable Costs:								
Soil Fertility	\$126	\$131	\$131	\$119	\$32	\$42	\$37	\$40
Pesticides	61	76	73	71	36	46	46	50
Seed	112	115	117	111	66	73	63	64
Drying	15	14	14	7	0	1	1	0
Repairs, fuel and hire	<u>81</u>	<u>64</u>	<u>64</u>	<u>73</u>	<u>69</u>	<u>55</u>	<u>57</u>	<u>68</u>
Total variable costs.....	\$395	\$400	\$399	\$381	\$203	\$217	\$204	\$222
Percent change from 2017	0%	0%	-2%	0%	4%	2%	0%	1%
Other nonland costs								
Labor	\$48	\$50	\$53	\$66	\$43	\$47	\$51	\$59
Buildings	22	17	19	24	11	14	13	14
Storage	10	15	13	6	4	8	5	4
Machinery depreciation	63	64	62	71	54	56	53	68
Nonland interest	52	52	50	48	43	47	43	46
Overhead	<u>49</u>	<u>48</u>	<u>48</u>	<u>54</u>	<u>47</u>	<u>45</u>	<u>45</u>	<u>51</u>
Total, other costs.....	\$244	\$246	\$245	\$269	\$202	\$217	\$210	\$242
Total, nonland costs	\$639	\$646	\$644	\$650	\$405	\$434	\$414	\$464
Percent change from 2017.....	-2%	0%	-1%	1%	-1%	1%	1%	2%
LAND COSTS								
Total land costs ³	\$236	\$231	\$208	\$164	\$236	\$231	\$208	\$164
TOTAL, all costs	\$875	\$877	\$852	\$814	\$641	\$665	\$622	\$628
Percent change from 2017.....	0%	1%	1%	1%	1%	1%	2%	2%
2018 yields, bushels per acre	214	237	219	188	67	74	65	59
Nonland costs per bushel	\$2.99	\$2.73	\$2.94	\$3.46	\$6.04	\$5.86	\$6.37	\$7.86
Total, all costs per bushel	\$4.09	\$3.70	\$3.89	\$4.33	\$9.57	\$8.99	\$9.57	\$10.64
2014-2018 average yield	211	225	211	175	63	68	62	55
Nonland costs per bushel	\$3.03	\$2.88	\$3.05	\$3.71	\$6.45	\$6.36	\$6.66	\$8.41
Total, all costs per bushel	\$4.15	\$3.90	\$4.03	\$4.64	\$10.21	\$9.75	\$10.00	\$11.38
Note: The last two lines of the table are costs based on 2014-2018 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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