

# Corn (Irrigated) Planning Budget

Using this planning budget, corn farmers may estimate their costs and returns for 2024. Table 1 presents estimates for irrigated corn grain production in northern, central and southwest Missouri. Assumptions were based on price forecasts as of October 2023. Detailed prices and practices are summarized in Tables 2 and 3. The production practices used to develop these cost estimates are common for Missouri farms. Use the “Your estimate” column to plan your operation’s costs and returns for 2024.

**Table 1. Missouri corn (irrigated) planning budget for 2024.**

	Dollars per acre <sup>1</sup>	Your estimate
<b>Income</b>		
Grain sales	1,020.80	
Other income	0.00	
Total income	1,020.80	
<b>Operating costs</b>		
Seed	106.00	
Fertilizer and soil amendments	200.96	
Crop protection chemicals	79.30	
Crop supplies, storage, and marketing	6.00	
Crop consulting and insurance	33.00	
Custom hire and rental	7.25	
Machinery fuel, drying, and irrigation energy	151.91	
Machinery repairs and maintenance	23.34	
Management	30.62	
Operating interest	28.73	
Total operating costs	667.11	
<b>Ownership costs</b>		
Farm business overhead	9.50	
Machinery ownership	184.95	
Real estate charge	185.00	
Total ownership costs	379.45	
Total costs	1,046.56	
<b>Income over operating costs</b>		
	<b>353.69</b>	
<b>Income over total costs</b>		
	<b>-25.76</b>	
<b>Return to land and management</b>		
	<b>189.86</b>	
	Operating costs per bushel	3.03
	Ownership costs per bushel	1.72
	Total costs per bushel	4.76

<sup>1</sup> Totals may not sum due to rounding.

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Table 2 shows input assumptions for the irrigated corn budget. Price estimates reflect harvest time prices. Costs or returns from storage or other marketing methods are not included. No income from government programs are added. Farm business overhead includes liability insurance, utilities, accounting, etc. Real estate charge is an estimated rental rate for above average land.

**Table 2. Input assumptions used in corn (irrigated) planning budget for 2024.**

Selected input quantities	Per acre	Selected input prices	Dollars per unit
Yield, bushels	220	Corn market price, per bushel	4.64
Seeding rate, count	32,000	Seed, per 80,000 seed bag	265.00
Nitrogen rate, pounds N	215	Nitrogen, per pound N	0.46
Phosphorus rate, pounds P <sub>2</sub> O <sub>5</sub>	97	Phosphorus, per pound P <sub>2</sub> O <sub>5</sub>	0.62
Potassium rate, pounds K <sub>2</sub> O	62	Potassium, per pound K <sub>2</sub> O	0.41
Lime rate, tons	0.6	Lime, per ton	27.50
Sum of allocated labor, hours	1.52	Skilled labor, per hour	25.00
Irrigation, inches	6	Farm diesel, per gallon	4.00

Table 3 details the field activities assumed in this budget and their machinery costs. Machinery costs were estimated using typical life (years), use (hours) and performance (fuel and labor) factors for each power unit and implement used.

**Table 3. Machinery assumptions used in corn (irrigated) planning budget for 2024, on a per acre basis.**

Machine activity (not custom fieldwork)	Labor (hours)	Fuel (gallons)	Operating costs <sup>1</sup> (dollars)	Ownership costs <sup>2</sup> (dollars)	Total costs (dollars)	Trips across field
Field cultivator (35 ft); 360 HP 4WD	0.06	1.01	6.34	9.00	15.34	1
Tandem disk (21 feet); 360 HP 4WD	0.06	1.00	7.66	12.89	20.55	1
Row crop planter (16 row); 225 HP MFWD	0.08	0.08	7.82	17.10	24.92	1
Boom sprayer (90 feet); 130 HP MFWD	0.03	0.14	1.48	5.19	6.67	2
Anhydrous applicator (21 feet); 225 HP MFWD	0.12	1.11	10.39	10.86	21.25	1
Combine, corn head (8 row); 275 HP	0.15	1.78	28.22	24.89	53.11	1
Grain cart (500 bushel); 225 HP MFWD	0.16	0.56	4.93	7.09	12.02	
Grain auger (5,000 bushels per hour); 130 HP MFWD	0.03	0.19	1.81	1.36	3.17	
Irrigation	0.50		87.12	82.46	169.58	
10-wheeler		1.50	7.56	1.98	9.54	
Semi, tractor and trailer		1.07	8.09	4.52	12.61	
Pickup truck		0.33	2.35	2.42	4.77	
<b>Total<sup>3</sup></b>	<b>1.19</b>	<b>8.77</b>	<b>175.25</b>	<b>184.95</b>	<b>360.20</b>	<b>7</b>

<sup>1</sup> Machinery operating cost is the sum of fuel, repairs, maintenance, and the value of labor.

<sup>2</sup> Machinery ownership cost is the sum of machinery overhead and depreciation.

<sup>3</sup> Totals may not sum due to rounding.

Abbreviations: 4WD = four wheel drive tractor; MFWD = mechanical front-wheel drive tractor; HP = horsepower

Farmers can also customize this budget to fit their own operations by using the [Missouri Crop Budget Tool](https://extension.missouri.edu/media/wysiwyg/Extensiondata/Pro/AgBusinessPolicyExtension/Docs/CropBudgets.xlsx) (extension.missouri.edu/media/wysiwyg/Extensiondata/Pro/AgBusinessPolicyExtension/Docs/CropBudgets.xlsx). Download the spreadsheet tool to create an electronic copy of your cost and return estimates for corn and other crops in Missouri.