

Corn (Dryland) Planning Budget

This budget presents information useful to farmers planning the production, financing and marketing of corn for grain. Table 1 presents estimates for the 2021 crop year for dryland corn production in northern, central and southwest Missouri. Assumptions were based on price conditions as of October 2020. Detailed prices and practices are summarized in Tables 2 and 3. The production practices used to develop these cost estimates are common in Missouri. Farmers are encouraged to modify this budget based on their circumstances.

Table 1. Missouri corn (dryland) planning budget for 2021.

	Dollars per acre	Your estimate
Income		
Grain sales	577.50	
Other income	0.00	
Total income	577.50	
Operating costs		
Seed	93.75	
Fertilizer and soil amendments	98.71	
Crop protection chemicals	41.00	
Crop supplies, storage, and marketing	2.00	
Crop consulting and insurance	21.00	
Custom hire and rental	6.20	
Machinery fuel, drying, and irrigation energy	39.90	
Machinery repairs and maintenance	23.35	
Operator and hired labor	16.85	
Operating interest	7.71	
Total operating costs	350.46	
Ownership costs		
Farm business overhead	4.00	
Machinery overhead	24.31	
Machinery depreciation	33.10	
Real estate charge	154.00	
Total ownership costs	215.41	
Total costs	565.88	
Income over operating costs	227.04	
Income over total costs	11.62	
	Operating costs per bushel	2.12
	Ownership costs per bushel	1.31
	Total costs per bushel	3.43

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Table 2 shows input assumptions used to estimate the dryland 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 (dryland) planning budget for 2021.

Selected input quantities	Per acre	Selected input prices	Dollars per unit
Yield, bushels	165	Corn market price, per bushel	3.50
Seeding rate, count	30,000	Seed, per 80,000 seed bag	250.00
Nitrogen rate, pounds	165	Nitrogen, per pound N	0.27
Phosphorus rate, pounds P ₂ O ₅	74	Phosphorus, per pound P ₂ O ₅	0.38
Potassium rate, pounds K ₂ O	48	Potassium, per pound K ₂ O	0.28
Lime rate, tons	0.60	Lime, per ton	21.00
Sum of allocated labor, hours	0.97	Skilled labor, per hour	21.00
		Farm diesel, per gallon	2.38

Table 3 details the field activities assumed in this budget and their machinery costs. Machinery costs were estimated using an economic engineering approach.

Table 3. Machinery assumptions used in corn (dryland) planning budget for 2021, on a per acre basis.

Machine activity (not custom fieldwork)	Labor (hours)	Fuel (gallons)	Operating costs ¹ (dollars)	Ownership costs ² (dollars)	Total costs (dollars)	Trips across field
V-ripper 30-inch (17 feet); 360 4WD	0.03	0.45	2.06	5.76	7.82	0.3
Row crop planter (16 row); 225 MFWD	0.05	0.53	5.26	10.85	16.11	1.0
Boom sprayer (90 feet); 160 MFWD	0.04	0.31	2.87	4.59	7.46	2.0
Anhydrous applicator (21 feet); 225 MFWD	0.09	0.88	5.15	7.23	12.38	1.0
Combine, corn head (8 row); 275 HP	0.15	1.78	21.28	17.74	39.02	1.0
Grain cart (500 bushel); 225 MFWD	0.07	0.73	3.84	5.51	9.36	
Grain auger (5,000 bushels per hour); 130 MFWD	0.03	0.19	1.19	1.16	2.35	
Semi, tractor and trailer		1.07	4.55	2.44	6.98	
Pickup truck		0.33	1.42	2.13	3.54	
Total³	0.47	6.28	47.62	57.41	105.04	5.3

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

² Machinery ownership cost is the sum of machinery overhead and depreciation.

³ Totals may not sum due to rounding.

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

Farmers can also develop their own custom budget by using the Missouri Crop Budget Generator Tool (<https://extension.missouri.edu/media/wysiwyg/Extensiondata/Pro/AgBusinessPolicyExtension/Docs/CropBudgetGenerator.xlsm>). This spreadsheet tool allows users to develop a custom estimate for their costs and returns for growing corn and other grain crops in Missouri.