

Grain Sorghum Planning Budget

This budget presents information useful to farmers planning the production, financing and marketing of grain sorghum. Table 1 presents estimates for the 2021 crop year for grain sorghum 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 grain sorghum planning budget for 2021.

	Dollars per acre ¹	Your estimate
Income		
Grain sales	320.00	
Other income	0.00	
Total income	320.00	
Operating costs		
Seed	11.40	
Fertilizer and soil amendments	75.72	
Crop protection chemicals	28.00	
Crop supplies, storage, and marketing	2.00	
Crop consulting and insurance	14.00	
Custom hire and rental	12.40	
Machinery fuel, drying, and irrigation energy	10.64	
Machinery repairs and maintenance	17.41	
Operator and hired labor	13.77	
Operating interest	4.17	
Total operating costs	189.51	
Ownership costs		
Farm business overhead	5.00	
Machinery overhead	19.01	
Machinery depreciation	22.79	
Real estate charge	124.25	
Total ownership costs	171.04	
Total costs	360.55	
Income over operating costs	130.49	
Income over total costs	-40.55	
	Operating costs per bushel	1.90
	Ownership costs per bushel	1.71
	Total costs per bushel	3.61

¹ Totals may not sum due to rounding.

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Table 2 shows input assumptions used to estimate the grain sorghum 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 grain sorghum planning budget for 2021.

Selected input quantities	Per acre	Selected input prices	Dollars per unit
Yield, bushels	100	Grain sorghum market price, per bushel	3.20
Seeding rate, count	90,000	Seed, per 750,000 seed bag	95.00
Nitrogen rate, pounds N	100	Nitrogen, per pound N	0.40
Phosphorus rate, pounds P ₂ O ₅	45	Phosphorus, per pound P ₂ O ₅	0.38
Potassium rate, pounds K ₂ O	29	Potassium, per pound K ₂ O	0.28
Lime rate, tons	0.5	Lime, per ton	21.00
Sum of allocated labor, hours	0.81	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 grain sorghum 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
Boom sprayer (90 feet); 130 MFWD	0.04	0.25	2.66	4.49	7.15	2
Combine, fixed grain head (30 feet); 275 HP	0.07	1.36	15.63	11.53	27.16	1
Grain cart (500 bushel); 225 MFWD	0.04	0.56	2.93	4.20	7.13	
Grain auger (5,000 bushels per hour); 130 MFWD	0.02	0.11	0.72	0.70	1.43	
Semi, tractor and trailer		0.71	3.03	1.61	4.64	
Pickup truck		0.42	1.77	2.65	4.42	
Total³	0.31	4.39	34.07	41.79	75.86	4.3

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 see other Missouri budgets or customize existing Missouri budgets by visiting <https://extension.missouri.edu/programs/agricultural-business-and-policy-extension/missouri-crop-and-livestock-enterprise-budgets>.