

Grain Sorghum Planning Budget

Using this planning budget, sorghum farmers may estimate their costs and returns for 2022. Table 1 presents estimates for grain sorghum production in northern, central and southwest Missouri. Assumptions were based on price forecasts as of October 2021. 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 2022.

Table 1. Missouri grain sorghum planning budget for 2022.

	Dollars per acre ¹	Your estimate
Income		
Grain sales	475.00	
Other income	0.00	
Total income	475.00	
Operating costs		
Seed	12.60	
Fertilizer and soil amendments	128.57	
Crop protection chemicals	34.00	
Crop supplies, storage, and marketing	2.00	
Crop consulting and insurance	17.00	
Custom hire and rental	12.00	
Machinery fuel, drying, and irrigation energy	17.37	
Machinery repairs and maintenance	21.18	
Operator and hired labor	15.39	
Operating interest	6.37	
Total operating costs	266.48	
Ownership costs		
Farm business overhead	5.00	
Machinery overhead	20.28	
Machinery depreciation	29.87	
Real estate charge	129.50	
Total ownership costs	184.65	
Total costs	451.13	
Income over operating costs	208.52	
Income over total costs	23.87	
	Operating costs per bushel	2.66
	Ownership costs per bushel	1.85
	Total costs per bushel	4.51

¹ Totals may not sum due to rounding.

Written by
Raymond Massey, Professor, Agricultural Business and Policy Extension
Ben Brown, State Specialist, Agricultural Business and Policy Extension

Table 2 shows input assumptions for 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 2022.

Selected input quantities	Per acre	Selected input prices	Dollars per unit
Yield, bushels	100	Grain sorghum market price, per bushel	4.75
Seeding rate, count	90,000	Seed, per 750,000 seed bag	105.00
Nitrogen rate, pounds N	100	Nitrogen, per pound N	0.70
Phosphorus rate, pounds P ₂ O ₅	45	Phosphorus, per pound P ₂ O ₅	0.65
Potassium rate, pounds K ₂ O	29	Potassium, per pound K ₂ O	0.58
Lime rate, tons	0.5	Lime, per ton	25.00
Sum of allocated labor, hours	0.81	Skilled labor, per hour	23.00
		Farm diesel, per gallon	2.91

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 grain sorghum planning budget for 2022, 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	2.39	5.75	8.15	0.3
Row crop planter (16 row); 225 MFWD	0.05	0.53	5.69	12.48	18.17	1
Boom sprayer (90 feet); 130 MFWD	0.04	0.25	3.00	4.67	7.67	2
Combine, fixed grain head (30 feet); 275 HP	0.11	1.36	17.05	12.63	29.67	1
Grain cart (500 bushel); 225 MFWD	0.06	0.56	3.94	6.24	10.18	
Grain auger (5,000 bushels per hour); 130 MFWD	0.02	0.11	0.88	0.80	1.67	
Semi, tractor and trailer		2.14	10.11	5.02	15.13	
Pickup truck		0.42	2.13	2.56	4.69	
Total³	0.31	5.82	45.19	50.15	95.34	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 also customize this budget to fit their own operations by using the [Missouri Crop Budget Generator](https://extension.missouri.edu/media/wysiwyg/Extensiondata/Pro/AgBusinessPolicyExtension/Docs/CropBudgetGenerator.xlsm) (<https://extension.missouri.edu/media/wysiwyg/Extensiondata/Pro/AgBusinessPolicyExtension/Docs/CropBudgetGenerator.xlsm>). Download the spreadsheet tool to create an electronic copy of your cost and return estimates for grain sorghum and other crops in Missouri.