

Winter Wheat Planning Budget

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

	Dollars per acre ¹	Your estimate
Income per acre		
Grain sales	294.00	
Other income	0.00	
Total income	294.00	
Operating costs		
Seed	28.00	
Fertilizer and soil amendments	61.62	
Crop protection chemicals	16.50	
Crop supplies, storage, and marketing	3.00	
Crop consulting and insurance	14.00	
Custom hire and rental	12.40	
Machinery fuel, drying, and irrigation energy	10.09	
Machinery repairs and maintenance	15.89	
Operator and hired labor	14.31	
Operating interest	3.96	
Total operating costs	179.77	
Ownership costs		
Farm business overhead	5.00	
Machinery overhead	14.37	
Machinery depreciation	24.05	
Real estate charge	124.25	
Total ownership costs	167.66	
Total costs	347.43	
Income over operating costs		
	114.23	
Income over total costs		
	-53.43	
	Operating costs per bushel	3.00
	Ownership costs per bushel	2.79
	Total costs per bushel	5.79

¹ Totals may not sum due to rounding.

Written by
Raymond Massey, Professor, Agricultural Business and Policy Extension

Table 2 shows input assumptions used to estimate the winter wheat 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 winter wheat planning budget for 2021.

Selected input quantities	Per acre	Selected input prices	Dollars per unit
Yield, bushels	60	Wheat market price, per bushel	4.90
Seeding rate, 50 pound bag	100	Seed, per bag	14.00
Nitrogen rate, pounds N	81	Nitrogen, per pound N	0.40
Phosphorus rate, pounds P ₂ O ₅	36	Phosphorus, per pound P ₂ O ₅	0.38
Potassium rate, pounds K ₂ O	18	Potassium, per pound K ₂ O	0.28
Lime rate, tons	0.5	Lime, per ton	21.00
Sum of allocated labor, hours	0.83	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 winter wheat planning budget for 2020, 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
No-till drill (20 feet); 225 MFWD	0.12	1.17	8.20	14.89	23.10	1
Boom sprayer (90 feet); 130 MFWD	0.02	0.12	1.33	2.86	4.19	1
Combine, fixed grain head (30 feet); 275 HP	0.11	1.36	15.63	11.53	27.16	1
Grain cart (500 bushel); 225 MFWD	0.07	0.69	3.66	5.25	8.91	
Grain auger (5,000 bushels per hour); 130 MFWD	0.01	0.07	0.43	0.42	0.86	
Semi, tractor and trailer		0.36	1.52	0.81	2.32	
Pickup truck		0.42	1.77	2.65	4.42	
Total³	0.33	4.19	35.54	38.41	70.96	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: 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 winter wheat and other grain crops in Missouri.