

FORAGE 2023 PLANNING BUDGETS

**Mississippi State University
Department of Agricultural Economics
Budget Report 2022-08**

April 2022

Foreword

This report is designed to provide necessary planning data to farmers, research and extension staffs, lending agencies, and others in agriculture. Estimated costs for land, management, and general farm overhead are not included in this report.

Acknowledgments

A list of individuals who contributed to the development of the agricultural enterprise budgets follows this acknowledgment. The administrative committee structure and enterprise committees have shown a spirit of cooperation seldom found when so many work together. A team effort has led to many improvements in the budgets over the years.

Special appreciation is expressed to farm supply dealers, equipment dealers, custom operators, and chemical companies who provided prices for crop production inputs.

Acknowledgment is made to the Mississippi State University Extension Service, the Mississippi Agricultural and Forestry Experiment Station, and the United States Agricultural Research Service staffs for the excellent cooperation that made this report possible.

The mention in this report of any commercial product does not imply its endorsement by MSU-ES, MAFES, or USDA over other products not named nor does the omission imply they are not satisfactory.

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2023 Planning Budgets

Budgets for Agricultural Enterprises

This publication provides economic and technical information in the form of enterprise budgets for forage crops produced by Mississippi farmers. A multidisciplinary approach involving researchers and extension personnel was used to determine production practices and input quantities, and to estimate costs for each enterprise (14). The purpose of this section is to present the methods and procedures used to calculate costs for each budget included in this publication.

Enterprise budgets represent a type of information that can be used by a wide variety of individuals in making decisions in the food and fiber industry. They are used:

- by farmers for planning,
- by extension personnel in providing educational programs to farmers,
- by lenders as a basis for credit,
- to provide basic data for research, and
- to inform non-farmers of the costs incurred by farmers in the production of food and fiber crops.

A budget should be prepared with a specific objective in mind. The budgets in this report were prepared to provide general information for several different uses. They provide information concerning general levels of costs which will need to be adjusted for specific situations. Most users should think of these budgets as a first approximation and then make appropriate adjustments using the "Your Farm" column provided on each budget to add, delete, or change costs to reflect their specific situations.

Methods and Procedures

Production Practices

The production practices listed in each budget are the result of a combined effort by researchers and extension personnel to represent those practices that producers could use in a specific production system. Producers might use different practices in their own operations. If different types and quantities of operating inputs are to be used, then the budgeted expenses should be changed to more accurately reflect actual input usage.

Committees made up of appropriate disciplines from the Mississippi Agricultural and Forestry Experiment Station, the Mississippi State University Extension Service, and the U.S. Department of Agriculture review and update the practices in the budgets every year. The updates are based on the individual and collective judgment of the committee members. Quantities of materials listed in each budget are based on generally accepted recommendations.

Machinery

Machinery manufacturers form the basis for machinery prices used in these publications. Prices by size of equipment are determined from the most common sales in each category as reported by machinery dealers. Prices used in the budgets reflect prices paid by farmers in 2021. (Appendix Tables 1 and 2).

A performance rate reflects the time required to perform a given task or operation and is expressed as that part of an hour per acre. Previous studies and expert knowledge of the equipment committee members are used to estimate performance rates for new and larger equipment (1, 4, 5, 6, 7, 9, and 13).

The hours of annual use have been modified based on information collected from the cited studies (3, 4, 6, and 7).

Repairs and maintenance as a percentage of new cost are estimated for the life of the equipment and include oil and lubricants (1, 4, and 6).

Estimates of Direct Costs

Direct costs include estimated costs of repairs and maintenance (R&M) for all machinery and include fuel costs for powered machinery (Appendix Tables 1, 2, and 3). Direct costs are estimated on an hourly basis and are then converted to a per-acre basis using the performance rate for the particular operation. R&M costs for towed equipment and powered equipment are estimated as follows:

$$RPH = \frac{RLC \times RP}{THL}$$

$$RPA = RPH \times PR$$

where:

RPH = R&M cost per hour of use
 RLC = Replacement cost of machine
 RP = R&M percentage (percent of RLC)
 THL = Total hours of machine life
 RPA = R&M cost per acre
 PR = Performance rate

Direct costs include an estimate of fuel cost based on average fuel consumption per hour of use for the power unit. Other components of direct costs include quantities of materials used in production multiplied by the price per unit of these inputs, custom rates, hourly wage rates, and interest charges on short-term capital (Appendix Tables 4, 5, and 6).

The labor wage rate per hour includes social security, accident and unemployment insurance, and some perquisites (11). Labor costs are estimated for four labor categories: operator labor and hand labor. Operator labor and hand labor represent estimates of labor required to perform the in-field tasks. Operator labor is that labor required to operate all power-driven equipment

Interest on operating capital is determined by using a short-term interest rate obtained from agricultural lenders and making a charge against capital outflows as the production process takes place. Interest is accumulated until the crop is harvested.

Estimates of Fixed Costs

Annual fixed cost estimates for machinery are based on a budgeting technique which computes the annual capital recovery charge (2, p. 143). When a combination of machines or equipment is required to perform a single operation, the total cost per acre for all equipment used in the operation is estimated. The fixed cost of machinery ownership is calculated by first computing the capital recovery factor and then using it to estimate the annual capital recovery charge.

$$CRF = \frac{IIR}{1 - (1 + IIR)^{-TYL}}$$

where:

CRF = Capital recovery factor
 IIR = Intermediate-term interest rate
 TYL = Total years of life

$$CRCPY = [(RLC - SV) \times CRF] + (SV \times IIR)$$

where:

CRCPY = Capital recovery charge per year
 RLC = Replacement cost
 SV = Salvage value (at end of useful life)

This value is then converted to its per-hour and per-acre equivalent values:

$$CRCPH = \frac{CRCPY}{HAU}$$

$$CRCPA = CRCPH \times PR$$

where:

CRCPH = Capital recovery charge per hour
 HAU = Hours of annual use
 CRCPA = Capital recovery charge per acre
 PR = Performance rate

Enterprise Budgets

Table 1.A Estimated resource use and costs for field operations, per acre
Conventional Alfalfa hay establishment, prepared
seedbed, Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Soil Testing	acre			0.33	Jul							0.3300	10.00	3.30	3.30
Lime (Spread)	ton			1.00	Jul							2.0000	59.00	118.00	118.00
Chisel Plow	15'	2WD 75	0.130	1.00	Aug	1.84	1.02	0.65	1.09	0.13	2.00				6.60
Disk Harrow	14'	2WD 75	0.140	2.00	Aug	3.94	2.20	2.10	4.28	0.28	4.29				16.81
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Aug	0.88	0.49	0.16	0.18	0.09	1.24				2.95
Pursuit	oz											3.0000	3.06	9.18	9.18
Clethodim	oz											8.0000	0.50	4.00	4.00
Surfactant	pt											0.3000	3.30	0.99	0.99
Custom Spread(Truck) appl				1.00	Sep							1.0000	7.50	7.50	7.50
Phosphate (46% P2O5)	cwt											1.0000	51.80	51.80	51.80
Potash (60% K2O)	cwt											1.3000	42.25	54.93	54.93
Boron Plus	gal											2.0000	34.45	68.90	68.90
Molybdenum	lb											1.0000	15.00	15.00	15.00
Disk Harrow	14'	2WD 75	0.140	1.00	Sep	1.97	1.10	1.05	2.14	0.14	2.14				8.40
Section Harrow	13'	2WD 75	0.119	1.00	Sep	1.68	0.94	0.12	0.17	0.11	1.82				4.73
Grain Drill	12'	2WD 75	0.157	1.00	Sep	2.21	1.23	1.66	3.06	0.31	3.82				11.98
Alfalfa Seed	lb											20.0000	4.46	89.20	89.20
Cultipacker	12'	2WD 75	0.124	1.00	Sep	1.75	0.97	0.22	0.29	0.12	1.90				5.13
TOTALS						14.27	7.95	5.96	11.21	1.20	17.21			422.80	479.40
INTEREST ON OPERATING CAPITAL															8.02
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															487.42

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Table 1.B Estimated costs per acre
Conventional Alfalfa hay establishment, prepared
seedbed, Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Phosphate (46% P2O5)	cwt	51.80	1.0000	51.80	_____
Potash (60% K2O)	cwt	42.25	1.3000	54.93	_____
Boron Plus	gal	34.45	2.0000	68.90	_____
Molybdenum	lb	15.00	1.0000	15.00	_____
HERBICIDE					
Pursuit	oz	3.06	3.0000	9.18	_____
Clethodim	oz	0.50	8.0000	4.00	_____
SEED/PLANTS					
Alfalfa Seed	lb	4.46	20.0000	89.20	_____
ADJUVANTS					
Surfactant	pt	3.30	0.3000	0.99	_____
CUSTOM FERT					
Custom Spread(Truck)	appl	7.50	1.0000	7.50	_____
SERVICE FEE					
Soil Testing	acre	10.00	0.3300	3.30	_____
CUSTOM LIME					
Lime (Spread)	ton	59.00	2.0000	118.00	_____
OPERATOR LABOR					
Tractors	hour	15.27	1.0155	15.51	_____
HAND LABOR					
Implements	hour	9.06	0.1884	1.70	_____
DIESEL FUEL					
Tractors	gal	3.29	3.9205	12.90	_____
REPAIR & MAINTENANCE					
Implements	acre	5.96	1.0000	5.96	_____
Tractors	acre	1.37	1.0000	1.37	_____
INTEREST ON OP. CAP.	acre	8.02	1.0000	8.02	_____

TOTAL DIRECT EXPENSES				468.26	_____
FIXED EXPENSES					
Implements	acre	11.21	1.0000	11.21	_____
Tractors	acre	7.95	1.0000	7.95	_____

TOTAL FIXED EXPENSES				19.16	_____

TOTAL SPECIFIED EXPENSES				487.42	_____

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.

Table 2.A Estimated resource use and costs for field operations, per acre
Conventional Alfalfa hay maintenance
Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST	
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST		
						-----dollars-----				dollars		-----dollars-----				
Soil Testing	acre			0.33	Nov							0.3300	10.00	3.30	3.30	
Lime (Spread)	ton			1.00	Nov							0.5000	59.00	29.50	29.50	
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Nov	0.88	0.49	0.16	0.18	0.09	1.24				2.95	
Metribuzin 75	lb											1.0000	14.73	14.73	14.73	
Custom Spread(Truck)	appl			1.00	Mar							1.0000	7.50	7.50	7.50	
Phosphate (46% P2O5)	cwt											2.0000	51.80	103.60	103.60	
Potash (60% K2O)	cwt											1.5000	42.25	63.38	63.38	
Boron Plus	gal											0.5000	34.45	17.23	17.23	
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Mar	0.88	0.49	0.16	0.18	0.09	1.24				2.95	
Pursuit	oz											3.0000	3.06	9.18	9.18	
Surfactant	pt											0.3000	3.30	0.99	0.99	
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Mar	0.88	0.49	0.16	0.18	0.09	1.24				2.95	
Mustang Max	oz											4.0000	0.97	3.88	3.88	
Hay Cut-Cond	9'	2WD 75	0.229	1.00	May	3.22	1.79	4.31	4.68	0.22	3.50				17.50	
Hay Tedder	17'	2WD 75	0.101	1.00	May	14.26	0.79	0.45	0.61	0.10	1.54				17.65	
Hay Rake-Double	17'	2WD 75	0.101	2.00	May	2.84	1.58	0.79	1.07	0.20	3.09				9.37	
Hay Baler	Square	2WD 75	0.229	1.00	May	3.22	1.79	3.47	4.71	0.22	3.50				16.69	
Twine	bun											0.0800	28.50	2.28	2.28	
Hay Trailer	20'	2WD 75	0.090	1.00	May	1.26	0.70	0.11	0.17	0.09	1.37				3.61	
Hay Haul (Conv)	ton											1.5000	25.00	37.50	37.50	
Spray (Broadcast)	27'	2WD 75	0.062	1.00	May	0.91	0.65	0.16	0.18	0.09	1.24				3.14	
Gramoxone SL 2.0	oz											12.0000	0.19	2.28	2.28	
Surfactant	pt											0.3000	3.30	0.99	0.99	
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Jun	0.91	0.65	0.16	0.18	0.09	1.24				3.14	
Mustang Max	oz											4.0000	0.97	3.88	3.88	
Hay Cut-Cond	9'	2WD 75	0.229	1.00	Jun	3.22	1.79	4.31	4.68	0.22	3.50				17.50	
Hay Tedder	17'	2WD 75	0.101	1.00	Jun	14.26	0.79	0.45	0.61	0.10	1.54				17.65	
Hay Rake-Double	17'	2WD 75	0.101	2.00	Jun	2.84	1.58	0.79	1.07	0.20	3.09				9.37	
Hay Baler	Square	2WD 75	0.229	1.00	Jun	3.22	1.79	3.47	4.71	0.22	3.50				16.69	
Twine	bun											0.0800	28.50	2.28	2.28	
Hay Trailer	20'	2WD 75	0.090	1.00	Jun	1.26	0.70	0.11	0.17	0.09	1.37				3.61	
Hay Haul (Conv)	ton											1.5000	25.00	37.50	37.50	
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Jun	0.88	0.49	0.16	0.18	0.09	1.24				2.95	
Gramoxone SL 2.0	oz											12.0000	0.19	2.28	2.28	
Surfactant	pt											0.3000	3.30	0.99	0.99	
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Jun	0.88	0.49	0.16	0.18	0.09	1.24				2.95	
Poast	pt											1.0000	14.56	14.56	14.56	
Crop Oil (veg)	pt											2.0000	2.90	5.80	5.80	
Custom Spread(Truck)	appl			1.00	Jul							1.0000	7.50	7.50	7.50	
Potash (60% K2O)	cwt											1.5000	42.25	63.38	63.38	
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Aug	0.88	0.49	0.16	0.18	0.09	1.24				2.95	
Mustang Max	oz											4.0000	0.97	3.88	3.88	
Hay Cut-Cond	9'	2WD 75	0.229	1.00	Aug	3.22	1.79	4.31	4.68	0.22	3.50				17.50	
Hay Tedder	17'	2WD 75	0.101	1.00	Aug	14.26	0.79	0.45	0.61	0.10	1.54				17.65	
Hay Rake-Double	17'	2WD 75	0.101	2.00	Aug	2.84	1.58	0.79	1.07	0.20	3.09				9.37	
Hay Baler	Square	2WD 75	0.229	1.00	Aug	3.22	1.79	3.47	4.71	0.22	3.50				16.69	
Twine	bun											0.0500	28.50	1.43	1.43	
Hay Trailer	20'	2WD 75	0.090	1.00	Aug	1.26	0.70	0.11	0.17	0.09	1.37				3.61	
Hay Haul (Conv)	ton											1.0000	25.00	25.00	25.00	
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Aug	0.91	0.65	0.16	0.18	0.09	1.24				3.14	
Gramoxone SL 2.0	oz											12.0000	0.19	2.28	2.28	
Surfactant	pt											0.3000	3.30	0.99	0.99	
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Sep	0.91	0.65	0.16	0.18	0.09	1.24				3.14	
Mustang Max	oz											4.0000	0.97	3.88	3.88	
Hay Cut-Cond	9'	2WD 75	0.229	1.00	Sep	3.22	1.79	4.31	4.68	0.22	3.50				17.50	
Hay Tedder	17'	2WD 75	0.101	1.00	Sep	14.26	0.79	0.45	0.61	0.10	1.54				17.65	
Hay Rake-Double	17'	2WD 75	0.101	2.00	Sep	2.84	1.58	0.79	1.07	0.20	3.09				9.37	
Hay Baler	Square	2WD 75	0.229	1.00	Sep	3.22	1.79	3.47	4.71	0.22	3.50				16.69	
Twine	bun											0.0500	28.50	1.43	1.43	
Hay Trailer	20'	2WD 75	0.090	1.00	Sep	1.26	0.70	0.11	0.17	0.09	1.37				3.61	
Hay Haul (Conv)	ton											1.0000	25.00	25.00	25.00	
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Sep	0.91	0.65	0.16	0.18	0.09	1.24				3.14	
Gramoxone SL 2.0	oz											12.0000	0.19	2.28	2.28	
Surfactant	pt											0.3000	3.30	0.99	0.99	
Prorated Est Cost	acre				Sep							1.0000			37.47	
TOTALS						109.03	32.79	38.28	46.94	4.44	65.64				501.67	831.82
INTEREST ON OPERATING CAPITAL															5.17	
UNALLOCATED LABOR																0.00
TOTAL SPECIFIED COST																836.99

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Table 2.B Estimated costs per acre
Conventional Alfalfa hay maintenance
Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Phosphate (46% P2O5)	cwt	51.80	2.0000	103.60	_____
Potash (60% K2O)	cwt	42.25	3.0000	126.75	_____
Boron Plus	gal	34.45	0.5000	17.23	_____
HERBICIDE					
Metribuzin 75	lb	14.73	1.0000	14.73	_____
Pursuit	oz	3.06	3.0000	9.18	_____
Gramoxone SL 2.0	oz	0.19	48.0000	9.12	_____
Poast	pt	14.56	1.0000	14.56	_____
INSECTICIDE					
Mustang Max	oz	0.97	16.0000	15.52	_____
HAUL					
Hay Haul (Conv)	ton	25.00	5.0000	125.00	_____
OTHER					
Twine	bun	28.50	0.2600	7.41	_____
ADJUVANTS					
Surfactant	pt	3.30	1.5000	4.95	_____
Crop Oil (veg)	pt	2.90	2.0000	5.80	_____
CUSTOM FERT					
Custom Spread(Truck)	appl	7.50	2.0000	15.00	_____
SERVICE FEE					
Soil Testing	acre	10.00	0.3300	3.30	_____
CUSTOM LIME					
Lime (Spread)	ton	59.00	0.5000	29.50	_____
OPERATOR LABOR					
Tractors	hour	15.27	4.0960	62.56	_____
HAND LABOR					
Implements	hour	9.06	0.3447	3.08	_____
DIESEL FUEL					
Tractors	gal	3.29	31.4238	103.40	_____
REPAIR & MAINTENANCE					
Implements	acre	38.28	1.0000	38.28	_____
Tractors	acre	5.63	1.0000	5.63	_____
INTEREST ON OP. CAP.	acre	5.17	1.0000	5.17	_____

TOTAL DIRECT EXPENSES				719.79	_____
FIXED EXPENSES					
Implements	acre	46.94	1.0000	46.94	_____
Tractors	acre	32.79	1.0000	32.79	_____
Prorated Est Cost	acre	37.47	1.0000	37.47	_____

TOTAL FIXED EXPENSES				117.20	_____

TOTAL SPECIFIED EXPENSES				836.99	_____

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.

Table 3.A Estimated resource use and costs for field operations, per acre
Bahia grass establishment, broadcast
Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST	
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST		
						-----dollars-----				dollars		-----dollars-----				
Chisel Plow	15'	2WD 75	0.130	1.00	Mar	1.84	1.02	0.65	1.09	0.13	2.00				6.60	
Soil Testing	acre			0.33	Apr							0.3300	10.00	3.30	3.30	
Lime (Spread)	ton			1.00	Apr								59.00			
Disk Harrow	14'	2WD 75	0.140	1.00	Apr	1.97	1.10	1.05	2.14	0.14	2.14				8.40	
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Apr	0.91	0.65	0.16	0.18	0.09	1.24				3.14	
Glyphosate 3lbs a.e.	pt											2.0000	1.81	3.62	3.62	
Surfactant	pt											1.0000	3.30	3.30	3.30	
Custom Spread(Truck)	appl			1.00	Apr							1.0000	7.50	7.50	7.50	
Phosphate (46% P2O5)	cwt											1.5000	51.80	77.70	77.70	
Potash (60% K2O)	cwt											1.0000	42.25	42.25	42.25	
Disk Harrow	14'	2WD 75	0.140	1.00	Apr	1.97	1.10	1.05	2.14	0.14	2.14				8.40	
Section Harrow	13'	2WD 75	0.119	1.00	Apr	1.68	0.94	0.12	0.17	0.11	1.82				4.73	
Cyclone Spin	750Lb	2WD 105	0.200	1.00	Apr	3.98	2.44	0.26	0.95	0.30	3.96				11.59	
Bahiagrass Seed	lb											20.0000	3.53	70.60	70.60	
Cultipacker	12'	2WD 75	0.124	1.00	Apr	1.75	0.97	0.22	0.29	0.12	1.90				5.13	
Custom Spread(Truck)	appl			1.00	Jun							1.0000	7.50	7.50	7.50	
Nitrogen	cwt											1.0700	34.22	36.62	36.62	
Rotary Mower	12'	2WD 75	0.098	1.00	Jun	1.38	0.77	1.12	0.76	0.09	1.50				5.53	
Custom Spread(Truck)	appl			1.00	Jul							1.0000	7.50	7.50	7.50	
Nitrogen	cwt											1.0700	34.22	36.62	36.62	
						-----	-----	-----	-----	-----	-----	-----			-----	
TOTALS						15.48	8.99	4.63	7.72	1.14	16.70				296.51	350.03
INTEREST ON OPERATING CAPITAL																7.04
UNALLOCATED LABOR																0.00
TOTAL SPECIFIED COST																357.07

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

This budget assumes 40 units of nitrogen being applied after emergence and 40 units applied after the first grazing cycle.

Table 3.B Estimated costs per acre
Bahia grass establishment, broadcast
Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Phosphate (46% P2O5)	cwt	51.80	1.5000	77.70	
Potash (60% K2O)	cwt	42.25	1.0000	42.25	
Nitrogen	cwt	34.22	2.1400	73.23	
HERBICIDE					
Glyphosate 3lbs a.e.	pt	1.81	2.0000	3.62	
SEED/PLANTS					
Bahia grass Seed	lb	3.53	20.0000	70.60	
ADJUVANTS					
Surfactant	pt	3.30	1.0000	3.30	
CUSTOM FERT					
Custom Spread (Truck)	appl	7.50	3.0000	22.50	
SERVICE FEE					
Soil Testing	acre	10.00	0.3300	3.30	
OPERATOR LABOR					
Tractors	hour	15.27	1.0163	15.51	
HAND LABOR					
Implements	hour	9.06	0.1313	1.19	
DIESEL FUEL					
Tractors	gal	3.29	4.2323	13.93	
REPAIR & MAINTENANCE					
Implements	acre	4.63	1.0000	4.63	
Tractors	acre	1.55	1.0000	1.55	
INTEREST ON OP. CAP.	acre	7.04	1.0000	7.04	
TOTAL DIRECT EXPENSES				340.36	
FIXED EXPENSES					
Implements	acre	7.72	1.0000	7.72	
Tractors	acre	8.99	1.0000	8.99	
TOTAL FIXED EXPENSES				16.71	
TOTAL SPECIFIED EXPENSES				357.07	

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.
This budget assumes 40 units of nitrogen being applied after emergence and 40 units applied after the first grazing cycle.

Table 4.A Estimated resource use and costs for field operations, per acre
Bahia grass establishment, drilled on prepared seed bed
Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Chisel Plow	15'	2WD 75	0.130	1.00	Mar	1.84	1.02	0.65	1.09	0.13	2.00				6.60
Soil Testing	acre			0.33	Apr							0.3300	10.00	3.30	3.30
Lime (Spread)	ton			0.33	Apr								59.00		
Disk Harrow	14'	2WD 75	0.140	1.00	Apr	1.97	1.10	1.05	2.14	0.14	2.14				8.40
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Apr	0.88	0.49	0.16	0.18	0.09	1.24				2.95
Glyphosate 3lbs a.e.	pt											2.0000	1.81	3.62	3.62
Surfactant	pt											1.0000	3.30	3.30	3.30
Custom Spread(Truck)	appl			1.00	Apr							1.0000	7.50	7.50	7.50
Phosphate (46% P2O5)	cwt											1.5000	51.80	77.70	77.70
Potash (60% K2O)	cwt											1.0000	42.25	42.25	42.25
Disk Harrow	14'	2WD 75	0.140	1.00	Apr	1.97	1.10	1.05	2.14	0.14	2.14				8.40
Section Harrow	13'	2WD 75	0.119	1.00	Apr	1.68	0.94	0.12	0.17	0.11	1.82				4.73
Grain Drill	12'	2WD 75	0.157	1.00	Apr	2.21	1.23	1.66	3.06	0.31	3.82				11.98
Bahiagrass Seed	lb											20.0000	3.53	70.60	70.60
Cultipacker	12'	2WD 75	0.124	1.00	Apr	1.75	0.97	0.22	0.29	0.12	1.90				5.13
Custom Spread(Truck)	appl			1.00	Jun							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.0700	34.22	36.62	36.62
Rotary Mower	12'	2WD 75	0.098	1.00	Jun	1.38	0.77	1.12	0.76	0.09	1.50				5.53
Custom Spread(Truck)	appl			1.00	Jul							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.0700	34.22	36.62	36.62
TOTALS						13.68	7.62	6.03	9.83	1.16	16.56			296.51	350.23
INTEREST ON OPERATING CAPITAL															8.14
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															358.37

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

This budget assumes 40 units of nitrogen being applied after emergence and 40 units applied after the first grazing cycle.

Table 4.B Estimated costs per acre
 Bahiagrass establishment, drilled on prepared seed bed
 Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Phosphate (46% P2O5)	cwt	51.80	1.5000	77.70	
Potash (60% K2O)	cwt	42.25	1.0000	42.25	
Nitrogen	cwt	34.22	2.1400	73.23	
HERBICIDE					
Glyphosate 3lbs a.e.	pt	1.81	2.0000	3.62	
SEED/PLANTS					
Bahiagrass Seed	lb	3.53	20.0000	70.60	
ADJUVANTS					
Surfactant	pt	3.30	1.0000	3.30	
CUSTOM FERT					
Custom Spread(Truck)	appl	7.50	3.0000	22.50	
SERVICE FEE					
Soil Testing	acre	10.00	0.3300	3.30	
OPERATOR LABOR					
Tractors	hour	15.27	0.9734	14.86	
HAND LABOR					
Implements	hour	9.06	0.1884	1.70	
DIESEL FUEL					
Tractors	gal	3.29	3.7580	12.37	
REPAIR & MAINTENANCE					
Implements	acre	6.03	1.0000	6.03	
Tractors	acre	1.31	1.0000	1.31	
INTEREST ON OP. CAP.	acre	8.14	1.0000	8.14	
TOTAL DIRECT EXPENSES				340.92	
FIXED EXPENSES					
Implements	acre	9.83	1.0000	9.83	
Tractors	acre	7.62	1.0000	7.62	
TOTAL FIXED EXPENSES				17.45	
TOTAL SPECIFIED EXPENSES				358.37	

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.
This budget assumes 40 units of nitrogen being applied after emergence and 40 units applied after the first grazing cycle.

Table 5.A Estimated resource use and costs for field operations, per acre
Bahia grass establishment, no-till
Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST	
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST		
						-----dollars-----				dollars		-----dollars-----				
Soil Testing	acre			0.33	Apr							0.3300	10.00	3.30	3.30	
Lime (Spread)	ton			0.33	Apr								59.00			
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Apr	0.88	0.49	0.16	0.18	0.09	1.24				2.95	
Glyphosate 3lbs a.e.	pt											2.0000	1.81	3.62	3.62	
Surfactant	pt											1.0000	3.30	3.30	3.30	
Custom Spread(Truck)	appl			1.00	Apr							1.0000	7.50	7.50	7.50	
Phosphate (46% P2O5)	cwt											1.5000	51.80	77.70	77.70	
Potash (60% K2O)	cwt											1.0000	42.25	42.25	42.25	
NT Grain Drill	12'	2WD 75	0.196	1.00	Apr	2.75	1.54	3.45	6.36	0.39	4.78				18.88	
Bahiagrass Seed	lb											20.0000	3.53	70.60	70.60	
Custom Spread(Truck)	appl			1.00	Jun							1.0000	7.50	7.50	7.50	
Nitrogen	cwt											1.0700	34.22	36.62	36.62	
Rotary Mower	12'	2WD 75	0.098	1.00	Jun	1.38	0.77	1.12	0.76	0.09	1.50				5.53	
Custom Spread(Truck)	appl			1.00	Jul							1.0000	7.50	7.50	7.50	
Nitrogen	cwt											1.0700	34.22	36.62	36.62	
						-----	-----	-----	-----	-----	-----				-----	
TOTALS						5.01	2.80	4.73	7.30	0.58	7.52				296.51	323.87
INTEREST ON OPERATING CAPITAL																7.61
UNALLOCATED LABOR																0.00
TOTAL SPECIFIED COST																331.48

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

This budget assumes 40 units of nitrogen being applied after emergence and 40 units applied after the first grazing cycle.

Table 5.B Estimated costs per acre
Bahagrass establishment, no-till
Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Phosphate (46% P2O5)	cwt	51.80	1.5000	77.70	
Potash (60% K2O)	cwt	42.25	1.0000	42.25	
Nitrogen	cwt	34.22	2.1400	73.23	
HERBICIDE					
Glyphosate 3lbs a.e.	pt	1.81	2.0000	3.62	
SEED/PLANTS					
Bahagrass Seed	lb	3.53	20.0000	70.60	
ADJUVANTS					
Surfactant	pt	3.30	1.0000	3.30	
CUSTOM FERT					
Custom Spread(Truck)	appl	7.50	3.0000	22.50	
SERVICE FEE					
Soil Testing	acre	10.00	0.3300	3.30	
OPERATOR LABOR					
Tractors	hour	15.27	0.3573	5.46	
HAND LABOR					
Implements	hour	9.06	0.2277	2.06	
DIESEL FUEL					
Tractors	gal	3.29	1.3793	4.54	
REPAIR & MAINTENANCE					
Implements	acre	4.73	1.0000	4.73	
Tractors	acre	0.47	1.0000	0.47	
INTEREST ON OP. CAP.	acre	7.61	1.0000	7.61	
TOTAL DIRECT EXPENSES				321.38	
FIXED EXPENSES					
Implements	acre	7.30	1.0000	7.30	
Tractors	acre	2.80	1.0000	2.80	
TOTAL FIXED EXPENSES				10.10	
TOTAL SPECIFIED EXPENSES				331.48	

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.
This budget assumes 40 units of nitrogen being applied after emergence and 40 units applied after the first grazing cycle.

Table 6.A Estimated resource use and costs for field operations, per acre
Seeded bermudagrass establishment, broadcast seed
Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Chisel Plow	15'	2WD 75	0.130	1.00	Mar	1.84	1.02	0.65	1.09	0.13	2.00				6.60
Soil Testing	acre			0.33	Apr							0.3300	10.00	3.30	3.30
Lime (Spread)	ton			1.00	Apr								59.00		
Disk Harrow	14'	2WD 75	0.140	1.00	Apr	1.97	1.10	1.05	2.14	0.14	2.14				8.40
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Apr	0.88	0.49	0.16	0.18	0.09	1.24				2.95
Glyphosate 3lbs a.e.	pt											2.0000	1.81	3.62	3.62
Surfactant	pt											1.0000	3.30	3.30	3.30
Custom Spread(Truck)	appl			1.00	Apr							1.0000	7.50	7.50	7.50
Phosphate (46% P2O5)	cwt											1.5000	51.80	77.70	77.70
Potash (60% K2O)	cwt											1.0000	42.25	42.25	42.25
Disk Harrow	14'	2WD 75	0.140	1.00	Apr	1.97	1.10	1.05	2.14	0.14	2.14				8.40
Section Harrow	13'	2WD 75	0.119	1.00	Apr	1.68	0.94	0.12	0.17	0.11	1.82				4.73
Cyclone Spin	750Lb	2WD 75	0.200	1.00	Apr	2.81	1.57	0.26	0.95	0.30	3.96				9.55
Common Bermuda Seed	lb											10.0000	5.33	53.30	53.30
Cultipacker	12'	2WD 75	0.124	1.00	Apr	1.75	0.97	0.22	0.29	0.12	1.90				5.13
Custom Spread(Truck)	appl			1.00	Jun							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.0700	34.22	36.62	36.62
Rotary Mower	12'	2WD 75	0.098	1.00	Jun	1.38	0.77	1.12	0.76	0.09	1.50				5.53
Custom Spread(Truck)	appl			1.00	Jul							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.0700	34.22	36.62	36.62
TOTALS						14.28	7.96	4.63	7.72	1.14	16.70			279.21	330.50
INTEREST ON OPERATING CAPITAL															6.60
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															337.10

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

This budget assumes 40 units of nitrogen being applied after emergence and 40 units applied after the first grazing cycle.

Table 6.B Estimated costs per acre
Seeded bermudagrass establishment, broadcast seed
Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Phosphate (46% P2O5)	cwt	51.80	1.5000	77.70	_____
Potash (60% K2O)	cwt	42.25	1.0000	42.25	_____
Nitrogen	cwt	34.22	2.1400	73.23	_____
HERBICIDE					
Glyphosate 3lbs a.e.	pt	1.81	2.0000	3.62	_____
SEED/PLANTS					
Common Bermuda Seed	lb	5.33	10.0000	53.30	_____
ADJUVANTS					
Surfactant	pt	3.30	1.0000	3.30	_____
CUSTOM FERT					
Custom Spread(Truck)	appl	7.50	3.0000	22.50	_____
SERVICE FEE					
Soil Testing	acre	10.00	0.3300	3.30	_____
OPERATOR LABOR					
Tractors	hour	15.27	1.0163	15.51	_____
HAND LABOR					
Implements	hour	9.06	0.1313	1.19	_____
DIESEL FUEL					
Tractors	gal	3.29	3.9235	12.91	_____
REPAIR & MAINTENANCE					
Implements	acre	4.63	1.0000	4.63	_____
Tractors	acre	1.37	1.0000	1.37	_____
INTEREST ON OP. CAP.	acre	6.60	1.0000	6.60	_____

TOTAL DIRECT EXPENSES				321.42	_____
FIXED EXPENSES					
Implements	acre	7.72	1.0000	7.72	_____
Tractors	acre	7.96	1.0000	7.96	_____

TOTAL FIXED EXPENSES				15.68	_____

TOTAL SPECIFIED EXPENSES				337.10	_____

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.
This budget assumes 40 units of nitrogen being applied after emergence and 40 units applied after the first grazing cycle.

Table 7.A Estimated resource use and costs for field operations, per acre
Seeded bermudagrass establishment, no-till
Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Soil Testing	acre			0.33	Apr							0.3300	10.00	3.30	3.30
Lime (Spread)	ton			0.33	Apr								59.00		
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Apr	0.88	0.49	0.16	0.18	0.09	1.24				2.95
Glyphosate 3lbs a.e.	pt											2.0000	1.81	3.62	3.62
Surfactant	pt											1.0000	3.30	3.30	3.30
Custom Spread(Truck)	appl			1.00	Apr							1.0000	7.50	7.50	7.50
Phosphate (46% P2O5)	cwt											1.5000	51.80	77.70	77.70
Potash (60% K2O)	cwt											1.0000	42.25	42.25	42.25
NT Grain Drill	12'	2WD 75	0.196	1.00	Apr	2.75	1.54	3.45	6.36	0.39	4.78				18.88
Common Bermuda Seed	lb											10.0000	5.33	53.30	53.30
Custom Spread(Truck)	appl			1.00	Jun							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.0700	34.22	36.62	36.62
Rotary Mower	12'	2WD 75	0.098	1.00	Jun	1.38	0.77	1.12	0.76	0.09	1.50				5.53
Custom Spread(Truck)	appl			1.00	Jul							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.0700	34.22	36.62	36.62
						-----		-----		-----		-----			-----
TOTALS						5.01	2.80	4.73	7.30	0.58	7.52			279.21	306.57
INTEREST ON OPERATING CAPITAL															7.15
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															313.72

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

This budget assumes 40 units of nitrogen being applied after emergence and 40 units applied after the first grazing cycle.

Table 7.B Estimated costs per acre
Seeded bermudagrass establishment, no-till
Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Phosphate (46% P2O5)	cwt	51.80	1.5000	77.70	
Potash (60% K2O)	cwt	42.25	1.0000	42.25	
Nitrogen	cwt	34.22	2.1400	73.23	
HERBICIDE					
Glyphosate 3lbs a.e.	pt	1.81	2.0000	3.62	
SEED/PLANTS					
Common Bermuda Seed	lb	5.33	10.0000	53.30	
ADJUVANTS					
Surfactant	pt	3.30	1.0000	3.30	
CUSTOM FERT					
Custom Spread(Truck)	appl	7.50	3.0000	22.50	
SERVICE FEE					
Soil Testing	acre	10.00	0.3300	3.30	
OPERATOR LABOR					
Tractors	hour	15.27	0.3573	5.46	
HAND LABOR					
Implements	hour	9.06	0.2277	2.06	
DIESEL FUEL					
Tractors	gal	3.29	1.3793	4.54	
REPAIR & MAINTENANCE					
Implements	acre	4.73	1.0000	4.73	
Tractors	acre	0.47	1.0000	0.47	
INTEREST ON OP. CAP.	acre	7.15	1.0000	7.15	
TOTAL DIRECT EXPENSES				303.62	
FIXED EXPENSES					
Implements	acre	7.30	1.0000	7.30	
Tractors	acre	2.80	1.0000	2.80	
TOTAL FIXED EXPENSES				10.10	
TOTAL SPECIFIED EXPENSES				313.72	

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.
This budget assumes 40 units of nitrogen being applied after emergence and 40 units applied after the first grazing cycle.

Table 8.A Estimated resource use and costs for field operations, per acre
Seeded bermudagrass, drill in prepared seed bed
Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Chisel Plow	15'	2WD 75	0.130	1.00	Mar	1.84	1.02	0.65	1.09	0.13	2.00				6.60
Soil Testing	acre			0.33	Apr							0.3300	10.00	3.30	3.30
Lime (Spread)	ton			1.00	Apr								59.00		
Disk Harrow	14'	2WD 75	0.140	1.00	Apr	1.97	1.10	1.05	2.14	0.14	2.14				8.40
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Apr	0.88	0.49	0.16	0.18	0.09	1.24				2.95
Glyphosate 3lbs a.e.	pt											2.0000	1.81	3.62	3.62
Surfactant	pt											1.0000	3.30	3.30	3.30
Custom Spread(Truck)	appl			1.00	Apr							1.0000	7.50	7.50	7.50
Phosphate (46% P2O5)	cwt											1.5000	51.80	77.70	77.70
Potash (60% K2O)	cwt											1.0000	42.25	42.25	42.25
Disk Harrow	14'	2WD 75	0.140	1.00	Apr	1.97	1.10	1.05	2.14	0.14	2.14				8.40
Section Harrow	13'	2WD 75	0.119	1.00	Apr	1.68	0.94	0.12	0.17	0.11	1.82				4.73
Grain Drill	12'	2WD 130	0.157	1.00	Apr	4.04	3.35	1.66	3.06	0.31	3.82				15.93
Common Bermuda Seed	lb											10.0000	5.33	53.30	53.30
Cultipacker	12'	2WD 75	0.124	1.00	Apr	1.75	0.97	0.22	0.29	0.12	1.90				5.13
Custom Spread(Truck)	appl			1.00	Jun							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.0700	34.22	36.62	36.62
Rotary Mower	12'	2WD 75	0.098	1.00	Jun	1.38	0.77	1.12	0.76	0.09	1.50				5.53
Custom Spread(Truck)	appl			1.00	Jul							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.0700	34.22	36.62	36.62
TOTALS						15.51	9.74	6.03	9.83	1.16	16.56			279.21	336.88
INTEREST ON OPERATING CAPITAL															6.66
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															343.54

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

This budget assumes 40 units of nitrogen being applied after emergence and 40 units applied after the first grazing cycle.

Table 8.B Estimated costs per acre
Seeded bermudagrass, drill in prepared seed bed
Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Phosphate (46% P2O5)	cwt	51.80	1.5000	77.70	
Potash (60% K2O)	cwt	42.25	1.0000	42.25	
Nitrogen	cwt	34.22	2.1400	73.23	
HERBICIDE					
Glyphosate 3lbs a.e.	pt	1.81	2.0000	3.62	
SEED/PLANTS					
Common Bermuda Seed	lb	5.33	10.0000	53.30	
ADJUVANTS					
Surfactant	pt	3.30	1.0000	3.30	
CUSTOM FERT					
Custom Spread(Truck)	appl	7.50	3.0000	22.50	
SERVICE FEE					
Soil Testing	acre	10.00	0.3300	3.30	
OPERATOR LABOR					
Tractors	hour	15.27	0.9734	14.86	
HAND LABOR					
Implements	hour	9.06	0.1884	1.70	
DIESEL FUEL					
Tractors	gal	3.29	4.2029	13.83	
REPAIR & MAINTENANCE					
Implements	acre	6.03	1.0000	6.03	
Tractors	acre	1.68	1.0000	1.68	
INTEREST ON OP. CAP.	acre	6.66	1.0000	6.66	
TOTAL DIRECT EXPENSES				323.97	
FIXED EXPENSES					
Implements	acre	9.83	1.0000	9.83	
Tractors	acre	9.74	1.0000	9.74	
TOTAL FIXED EXPENSES				19.57	
TOTAL SPECIFIED EXPENSES				343.54	

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.
This budget assumes 40 units of nitrogen being applied after emergence and 40 units applied after the first grazing cycle

Table 9.A Estimated resource use and costs for field operations, per acre
 Permanent summer pasture maintenance (i.e. bahiagrass,
 bermudagrass, dallisgrass, mixed grasses),Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Soil Testing	acre			0.33	Apr							0.3300	10.00	3.30	3.30
Custom Spread(Truck)	appl			1.00	Apr							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.0700	34.22	36.62	36.62
Phosphate (46% P2O5)	cwt											1.0000	51.80	51.80	51.80
Potash (60% K2O)	cwt											1.0000	42.25	42.25	42.25
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Apr	0.88	0.49	0.16	0.18	0.09	1.24				2.95
GrazonNext	pt											1.5000	6.00	9.00	9.00
Surfactant	pt											1.0000	3.30	3.30	3.30
Custom Spread(Truck)	appl			1.00	Jun							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.0700	34.22	36.62	36.62
Rotary Mower	12'	2WD 75	0.098	1.00	Aug	1.38	0.77	1.12	0.76	0.09	1.50				5.53
Lime (Spread)	ton			1.00	Aug								59.00		
Prorated Est Cost	acre				Aug							1.0000			27.55
						-----	-----	-----	-----	-----	-----			-----	-----
TOTALS						2.26	1.26	1.28	0.94	0.19	2.74			197.89	233.92
INTEREST ON OPERATING CAPITAL															5.10
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															239.02

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

This budget assumes 40 units of nitrogen being applied after emergence and 40 units applied after the first grazing cycle.

Table 9.B Estimated costs per acre
 Permanent summer pasture maintenance (i.e. bahiagrass,
 bermudagrass, dallisgrass, mixed grasses), Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Nitrogen	cwt	34.22	2.1400	73.23	_____
Phosphate (46% P2O5)	cwt	51.80	1.0000	51.80	_____
Potash (60% K2O)	cwt	42.25	1.0000	42.25	_____
HERBICIDE					
GrazonNext	pt	6.00	1.5000	9.00	_____
ADJUVANTS					
Surfactant	pt	3.30	1.0000	3.30	_____
CUSTOM FERT					
Custom Spread (Truck)	appl	7.50	2.0000	15.00	_____
SERVICE FEE					
Soil Testing	acre	10.00	0.3300	3.30	_____
OPERATOR LABOR					
Tractors	hour	15.27	0.1608	2.46	_____
HAND LABOR					
Implements	hour	9.06	0.0313	0.28	_____
DIESEL FUEL					
Tractors	gal	3.29	0.6210	2.05	_____
REPAIR & MAINTENANCE					
Implements	acre	1.28	1.0000	1.28	_____
Tractors	acre	0.21	1.0000	0.21	_____
INTEREST ON OP. CAP.	acre	5.10	1.0000	5.10	_____

TOTAL DIRECT EXPENSES				209.27	_____
FIXED EXPENSES					
Implements	acre	0.94	1.0000	0.94	_____
Tractors	acre	1.26	1.0000	1.26	_____
Prorated Est Cost	acre	27.55	1.0000	27.55	_____

TOTAL FIXED EXPENSES				29.75	_____

TOTAL SPECIFIED EXPENSES				239.02	_____

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.
This budget assumes 40 units of nitrogen being applied after emergence and 40 units applied after the first grazing cycle

Table 10.A Estimated resource use and costs for field operations, per acre
 Permanent summer grass-white clover pasture maintenance
 Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Rotary Mower	12'	2WD 75	0.098	1.00	Jun	1.38	0.77	1.12	0.76	0.09	1.50				5.53
Soil Testing	acre			0.33	Jun							0.3300	10.00	3.30	3.30
Lime (Spread)	ton			1.00	Jun								59.00		
Rotary Mower	12'	2WD 75	0.098	1.00	Sep	1.38	0.77	1.12	0.76	0.09	1.50				5.53
Tailgate Seeder		2WD 50	0.200	1.00	Sep	1.84	0.85	0.33	0.36	0.20	3.05				6.43
White Clover Seed	lb											3.0000	4.20	12.60	12.60
Custom Spread(Truck)	appl			1.00	Oct							1.0000	7.50	7.50	7.50
Nitrogen	cwt											0.3000	34.22	10.27	10.27
Phosphate (46% P2O5)	cwt											1.0000	51.80	51.80	51.80
Potash (60% K2O)	cwt											1.0000	42.25	42.25	42.25
Prorated Est Cost	acre				Oct							1.0000			27.55
						-----	-----	-----	-----	-----	-----	-----			-----
TOTALS						4.60	2.39	2.57	1.88	0.39	6.05			127.72	172.76
INTEREST ON OPERATING CAPITAL															2.06
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															174.82

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

Table 10.B Estimated costs per acre
 Permanent summer grass-white clover pasture maintenance
 Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Nitrogen	cwt	34.22	0.3000	10.27	_____
Phosphate (46% P2O5)	cwt	51.80	1.0000	51.80	_____
Potash (60% K2O)	cwt	42.25	1.0000	42.25	_____
SEED/PLANTS					
White Clover Seed	lb	4.20	3.0000	12.60	_____
CUSTOM FERT					
Custom Spread (Truck)	appl	7.50	1.0000	7.50	_____
SERVICE FEE					
Soil Testing	acre	10.00	0.3300	3.30	_____
OPERATOR LABOR					
Tractors	hour	15.27	0.3964	6.05	_____
DIESEL FUEL					
Tractors	gal	3.29	1.2729	4.19	_____
REPAIR & MAINTENANCE					
Implements	acre	2.57	1.0000	2.57	_____
Tractors	acre	0.41	1.0000	0.41	_____
INTEREST ON OP. CAP.	acre	2.06	1.0000	2.06	_____

TOTAL DIRECT EXPENSES				143.00	_____
FIXED EXPENSES					
Implements	acre	1.88	1.0000	1.88	_____
Tractors	acre	2.39	1.0000	2.39	_____
Prorated Est Cost	acre	27.55	1.0000	27.55	_____

TOTAL FIXED EXPENSES				31.82	_____

TOTAL SPECIFIED EXPENSES				174.82	_____

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices

Table 11.A Estimated resource use and costs for field operations, per acre
Mixed grass hay maintenance
Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST	
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST		
						-----dollars-----				dollars		-----dollars-----				
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Mar	0.88	0.49	0.16	0.18	0.09	1.24				2.95	
GrazonNext	pt											1.5000	6.00	9.00	9.00	
Surfactant	pt											1.0000	3.30	3.30	3.30	
Custom Spread(Truck)	appl			1.00	Apr							1.0000	7.50	7.50	7.50	
Nitrogen	cwt											1.3500	34.22	46.20	46.20	
Phosphate (46% P2O5)	cwt											1.0000	51.80	51.80	51.80	
Potash (60% K2O)	cwt											1.5000	42.25	63.38	63.38	
Hay Disc Mower	8'	2WD 75	0.257	1.00	Jun	3.62	2.02	2.05	2.22	0.25	3.94				13.85	
Hay Rake	8.5'	2WD 50	0.202	2.00	Jun	3.71	1.71	1.43	1.94	0.40	6.18				14.97	
Hay Baler	Lg Round	2WD 75	0.211	1.00	Jun	2.97	1.66	6.53	7.88	0.21	3.23				22.27	
Twine	bun											0.0400	28.50	1.14	1.14	
Hay Mover	1B Lift	2WD 50	0.300	1.00	Jun	2.76	1.27	0.06	0.13	0.30	4.58				8.80	
Custom Spread(Truck)	appl			1.00	Jun							1.0000	7.50	7.50	7.50	
Nitrogen	cwt											1.3500	34.22	46.20	46.20	
Hay Disc Mower	8'	2WD 75	0.257	1.00	Jul	3.62	2.02	2.05	2.22	0.25	3.94				13.85	
Hay Rake	8.5'	2WD 50	0.202	2.00	Jul	3.71	1.71	1.43	1.94	0.40	6.18				14.97	
Hay Baler	Lg Round	2WD 75	0.211	1.00	Jul	2.97	1.66	6.53	7.88	0.21	3.23				22.27	
Twine	bun											0.0400	28.50	1.14	1.14	
Hay Mover	1B Lift	2WD 75	0.300	1.00	Jul	4.21	2.35	0.06	0.13	0.30	4.58				11.33	
Custom Spread(Truck)	appl			1.00	Jul							1.0000	7.50	7.50	7.50	
Nitrogen	cwt											1.3500	34.22	46.20	46.20	
Hay Baler	Lg Round	2WD 75	0.211	1.00	Oct	2.97	1.66	6.53	7.88	0.21	3.23				22.27	
Twine	bun											0.0200	28.50	0.57	0.57	
Hay Disc Mower	8'	2WD 75	0.257	1.00	Oct	3.62	2.02	2.05	2.22	0.25	3.94				13.85	
Hay Rake	8.5'	2WD 50	0.202	2.00	Oct	3.71	1.71	1.43	1.94	0.40	6.18				14.97	
Hay Mover	1B Lift	2WD 75	0.300	1.00	Oct	4.21	2.35	0.06	0.13	0.30	4.58				11.33	
Soil Testing	acre			0.33	Oct							0.3300	10.00	3.30	3.30	
Lime (Spread)	ton			1.00	Oct								59.00			
Prorated Est Cost	acre				Oct							1.0000			27.45	
						-----	-----	-----	-----	-----	-----				-----	
TOTALS						42.96	22.63	30.37	36.69	3.61	55.03				294.73	509.86
INTEREST ON OPERATING CAPITAL																7.40
UNALLOCATED LABOR																0.00
TOTAL SPECIFIED COST																517.26

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

This budget assumes 50 units of nitrogen being applied after emergence and 50 units applied after each cutting of hay.

Table 11.B Estimated costs per acre
Mixed grass hay maintenance
Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Nitrogen	cwt	34.22	4.0500	138.59	_____
Phosphate (46% P2O5)	cwt	51.80	1.0000	51.80	_____
Potash (60% K2O)	cwt	42.25	1.5000	63.38	_____
HERBICIDE					
GrazonNext	pt	6.00	1.5000	9.00	_____
OTHER					
Twine	bun	28.50	0.1000	2.85	_____
ADJUVANTS					
Surfactant	pt	3.30	1.0000	3.30	_____
CUSTOM FERT					
Custom Spread(Truck)	appl	7.50	3.0000	22.50	_____
SERVICE FEE					
Soil Testing	acre	10.00	0.3300	3.30	_____
OPERATOR LABOR					
Tractors	hour	15.27	3.5839	54.75	_____
HAND LABOR					
Implements	hour	9.06	0.0313	0.28	_____
DIESEL FUEL					
Tractors	gal	3.29	11.8883	39.10	_____
REPAIR & MAINTENANCE					
Implements	acre	30.37	1.0000	30.37	_____
Tractors	acre	3.86	1.0000	3.86	_____
INTEREST ON OP. CAP.	acre	7.40	1.0000	7.40	_____

TOTAL DIRECT EXPENSES				430.49	_____
FIXED EXPENSES					
Implements	acre	36.69	1.0000	36.69	_____
Tractors	acre	22.63	1.0000	22.63	_____
Prorated Est Cost	acre	27.45	1.0000	27.45	_____

TOTAL FIXED EXPENSES				86.77	_____

TOTAL SPECIFIED EXPENSES				517.26	_____

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.
This budget assumes 50 units of nitrogen being applied after emergence and 50 units applied after each cutting of hay

Table 12.A Estimated resource use and costs for field operations, per acre
Hybrid bermudagrass establishment, 1 cutting of hay
Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Chisel Plow	15'	2WD 75	0.130	1.00	Mar	1.84	1.02	0.65	1.09	0.13	2.00				6.60
Soil Testing	acre			0.33	Apr							0.3300	10.00	3.30	3.30
Lime (Spread)	ton			1.00	Apr								59.00		
Disk Harrow	14'	2WD 75	0.140	2.00	Apr	3.94	2.20	2.10	4.28	0.28	4.29				16.81
Custom Spread(Truck)	appl			1.00	Apr							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.3500	34.22	46.20	46.20
Phosphate (46% P2O5)	cwt											1.5000	51.80	77.70	77.70
Potash (60% K2O)	cwt											1.0000	42.25	42.25	42.25
Custom Sprig	acre			1.00	May							1.0000	100.00	100.00	100.00
Cultipacker	12'	2WD 75	0.124	1.00	May	1.75	0.97	0.22	0.29	0.12	1.90				5.13
Spray (Broadcast)	27'	2WD 75	0.062	1.00	May	0.88	0.49	0.16	0.18	0.09	1.24				2.95
Diuron 4L	pt											3.0000	3.50	10.50	10.50
Custom Spread(Truck)	appl			1.00	Jun							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.3500	34.22	46.20	46.20
Hay Disc Mower	8'	2WD 75	0.257	1.00	Aug	3.62	2.02	2.05	2.22	0.25	3.94				13.85
Hay Tedder	17'	2WD 75	0.101	1.00	Aug	14.26	0.79	0.45	0.61	0.10	1.54				17.65
Hay Rake-Double	17'	2WD 75	0.101	1.00	Aug	1.42	0.79	0.39	0.54	0.10	1.54				4.68
Hay Baler	Lg Round	2WD 75	0.211	1.00	Aug	2.97	1.66	6.53	7.88	0.21	3.23				22.27
Twine	bun											0.0300	28.50	0.86	0.86
						-----	-----	-----	-----	-----	-----				-----
TOTALS						30.68	9.94	12.55	17.09	1.30	19.68			342.01	431.95
INTEREST ON OPERATING CAPITAL															8.17
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															440.12

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

This budget assumes 50 units of nitrogen being applied after emergence and 50 units applied after hay cutting.

Table 12.B Estimated costs per acre
 Hybrid bermudagrass establishment, 1 cutting of hay
 Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Nitrogen	cwt	34.22	2.7000	92.39	_____
Phosphate (46% P2O5)	cwt	51.80	1.5000	77.70	_____
Potash (60% K2O)	cwt	42.25	1.0000	42.25	_____
HERBICIDE					
Diuron 4L	pt	3.50	3.0000	10.50	_____
OTHER					
Twine	bun	28.50	0.0300	0.86	_____
CUSTOM FERT					
Custom Spread(Truck)	appl	7.50	2.0000	15.00	_____
SERVICE FEE					
Soil Testing	acre	10.00	0.3300	3.30	_____
CUSTOM PLANT					
Custom Sprig	acre	100.00	1.0000	100.00	_____
OPERATOR LABOR					
Tractors	hour	15.27	1.2702	19.40	_____
HAND LABOR					
Implements	hour	9.06	0.0313	0.28	_____
DIESEL FUEL					
Tractors	gal	3.29	8.8064	28.96	_____
REPAIR & MAINTENANCE					
Implements	acre	12.55	1.0000	12.55	_____
Tractors	acre	1.72	1.0000	1.72	_____
INTEREST ON OP. CAP.	acre	8.17	1.0000	8.17	_____

TOTAL DIRECT EXPENSES				413.09	_____
FIXED EXPENSES					
Implements	acre	17.09	1.0000	17.09	_____
Tractors	acre	9.94	1.0000	9.94	_____

TOTAL FIXED EXPENSES				27.03	_____

TOTAL SPECIFIED EXPENSES				440.12	_____

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.
This budget assumes 50 units of nitrogen being applied after emergence and 50 units applied after hay cutting

Table 13.A Estimated resource use and costs for field operations, per acre
Hybrid bermudagrass hay maintenance
Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Mar	0.88	0.49	0.16	0.18	0.09	1.24				2.95
GrazonNext	pt											1.5000	6.00	9.00	9.00
Surfactant	pt											1.0000	3.30	3.30	3.30
Custom Spread(Truck)	appl			1.00	Apr							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.3500	34.22	46.20	46.20
Phosphate (46% P2O5)	cwt											1.5000	51.80	77.70	77.70
Potash (60% K2O)	cwt											2.0000	42.25	84.50	84.50
Hay Disc Mower	8'	2WD 75	0.257	1.00	Jun	3.62	2.02	2.05	2.22	0.25	3.94				13.85
Hay Tedder	17'	2WD 75	0.101	1.00	Jun	14.26	0.79	0.45	0.61	0.10	1.54				17.65
Hay Rake-Double	17'	2WD 75	0.101	2.00	Jun	2.84	1.58	0.79	1.07	0.20	3.09				9.37
Hay Baler	Lg Round	2WD 75	0.211	1.00	Jun	2.97	1.66	6.53	7.88	0.21	3.23				22.27
Twine	bun											0.0600	28.50	1.71	1.71
Hay Mover	1B Lift	2WD 75	0.300	1.00	Jun	4.21	2.35	0.06	0.13	0.30	4.58				11.33
Custom Spread(Truck)	appl			1.00	Jun							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.3500	34.22	46.20	46.20
Hay Disc Mower	8'	2WD 75	0.257	1.00	Jul	3.62	2.02	2.05	2.22	0.25	3.94				13.85
Hay Tedder	17'	2WD 75	0.101	1.00	Jul	14.26	0.79	0.45	0.61	0.10	1.54				17.65
Hay Rake-Double	17'	2WD 75	0.101	2.00	Jul	2.84	1.58	0.79	1.07	0.20	3.09				9.37
Hay Baler	Lg Round	2WD 75	0.211	1.00	Jul	2.97	1.66	6.53	7.88	0.21	3.23				22.27
Twine	bun											0.0600	28.50	1.71	1.71
Hay Mover	1B Lift	2WD 75	0.300	1.00	Jul	4.21	2.35	0.06	0.13	0.30	4.58				11.33
Custom Spread(Truck)	appl			1.00	Jul							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.3500	34.22	46.20	46.20
Soil Testing	acre			1.00	Aug							1.0000	10.00	10.00	10.00
Lime (Spread)	ton			1.00	Aug								59.00		
Hay Disc Mower	8'	2WD 75	0.257	1.00	Aug	3.62	2.02	2.05	2.22	0.25	3.94				13.85
Hay Tedder	17'	2WD 75	0.101	1.00	Aug	14.26	0.79	0.45	0.61	0.10	1.54				17.65
Hay Rake-Double	17'	2WD 75	0.101	2.00	Aug	2.84	1.58	0.79	1.07	0.20	3.09				9.37
Hay Baler	Lg Round	2WD 75	0.211	1.00	Aug	2.97	1.66	6.53	7.88	0.21	3.23				22.27
Twine	bun											0.0300	28.50	0.86	0.86
Hay Mover	1B Lift	2WD 75	0.300	1.00	Aug	4.21	2.35	0.06	0.13	0.30	4.58				11.33
Custom Spread(Truck)	appl			1.00	Aug							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.3500	34.22	46.20	46.20
Potash (60% K2O)	cwt											1.0000	42.25	42.25	42.25
Hay Disc Mower	8'	2WD 75	0.257	1.00	Sep	3.62	2.02	2.05	2.22	0.25	3.94				13.85
Hay Tedder	17'	2WD 75	0.101	1.00	Sep	14.26	0.79	0.45	0.61	0.10	1.54				17.65
Hay Rake-Double	17'	2WD 75	0.101	2.00	Sep	2.84	1.58	0.79	1.07	0.20	3.09				9.37
Hay Baler	Lg Round	2WD 75	0.211	1.00	Sep	2.97	1.66	6.53	7.88	0.21	3.23				22.27
Twine	bun											0.0300	28.50	0.86	0.86
Hay Mover	1B Lift	2WD 75	0.300	1.00	Sep	4.21	2.35	0.06	0.13	0.30	4.58				11.33
Prorated Est Cost	acre				Sep							1.0000			33.83
TOTALS						112.48	34.09	39.68	47.82	4.38	66.76			446.69	781.35
INTEREST ON OPERATING CAPITAL															10.71
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															792.06

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

This budget assumes 50 units of nitrogen being applied after emergence and 50 units applied after each cutting of hay.

Table 13.B Estimated costs per acre
Hybrid bermudagrass hay maintenance
Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Nitrogen	cwt	34.22	5.4000	184.79	_____
Phosphate (46% P2O5)	cwt	51.80	1.5000	77.70	_____
Potash (60% K2O)	cwt	42.25	3.0000	126.75	_____
HERBICIDE					
GrazonNext	pt	6.00	1.5000	9.00	_____
OTHER					
Twine	bun	28.50	0.1800	5.13	_____
ADJUVANTS					
Surfactant	pt	3.30	1.0000	3.30	_____
CUSTOM FERT					
Custom Spread(Truck)	appl	7.50	4.0000	30.00	_____
SERVICE FEE					
Soil Testing	acre	10.00	1.0000	10.00	_____
OPERATOR LABOR					
Tractors	hour	15.27	4.3532	66.48	_____
HAND LABOR					
Implements	hour	9.06	0.0313	0.28	_____
DIESEL FUEL					
Tractors	gal	3.29	32.4168	106.64	_____
REPAIR & MAINTENANCE					
Implements	acre	39.68	1.0000	39.68	_____
Tractors	acre	5.84	1.0000	5.84	_____
INTEREST ON OP. CAP.	acre	10.71	1.0000	10.71	_____

TOTAL DIRECT EXPENSES				676.32	_____
FIXED EXPENSES					
Implements	acre	47.82	1.0000	47.82	_____
Tractors	acre	34.09	1.0000	34.09	_____
Prorated Est Cost	acre	33.83	1.0000	33.83	_____

TOTAL FIXED EXPENSES				115.74	_____

TOTAL SPECIFIED EXPENSES				792.06	_____

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.
This budget assumes 50 units of nitrogen being applied after emergence and 50 units applied after each cutting of hay

Table 14.A Estimated resource use and costs for field operations, per acre
Tall fescue-white clover pasture establishment,
prepared seedbed, Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Soil Testing	acre			0.33	Aug							0.3300	10.00	3.30	3.30
Lime (Spread)	ton			1.00	Aug								59.00		
Chisel Plow	15'	2WD 75	0.130	1.00	Aug	1.84	1.02	0.65	1.09	0.13	2.00				6.60
Custom Spread(Truck)	appl			1.00	Sep							1.0000	7.50	7.50	7.50
Phosphate (46% P2O5)	cwt											1.5000	51.80	77.70	77.70
Potash (60% K2O)	cwt											1.0000	42.25	42.25	42.25
Disk Harrow	14'	2WD 75	0.140	2.00	Sep	3.94	2.20	2.10	4.28	0.28	4.29				16.81
Section Harrow	13'	2WD 75	0.119	1.00	Sep	1.68	0.94	0.12	0.17	0.11	1.82				4.73
Grain Drill	12'	2WD 75	0.157	1.00	Sep	2.21	1.23	1.66	3.06	0.31	3.82				11.98
Fescue Seed	lb											20.0000	3.00	60.00	60.00
Cultipacker	12'	2WD 75	0.124	1.00	Sep	1.75	0.97	0.22	0.29	0.12	1.90				5.13
Tailgate Seeder		2WD 50	0.200	1.00	Sep	1.84	0.85	0.33	0.36	0.20	3.05				6.43
White Clover Seed	lb											3.0000	4.20	12.60	12.60
Custom Spread(Truck)	appl			1.00	Oct							1.0000	7.50	7.50	7.50
Nitrogen	cwt											0.3000	34.22	10.27	10.27
Custom Spread(Truck)	appl			1.00	Apr							1.0000	7.50	7.50	7.50
Nitrogen	cwt											0.3000	34.22	10.27	10.27
TOTALS						13.26	7.21	5.08	9.25	1.16	16.88			238.89	290.57
INTEREST ON OPERATING CAPITAL															5.95
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															296.52

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

Table 14.B Estimated costs per acre
Tall fescue-white clover pasture establishment,
prepared seedbed, Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Phosphate (46% P2O5)	cwt	51.80	1.5000	77.70	_____
Potash (60% K2O)	cwt	42.25	1.0000	42.25	_____
Nitrogen	cwt	34.22	0.6000	20.53	_____
SEED/PLANTS					
Fescue Seed	lb	3.00	20.0000	60.00	_____
White Clover Seed	lb	4.20	3.0000	12.60	_____
CUSTOM FERT					
Custom Spread (Truck)	appl	7.50	3.0000	22.50	_____
SERVICE FEE					
Soil Testing	acre	10.00	0.3300	3.30	_____
OPERATOR LABOR					
Tractors	hour	15.27	1.0126	15.46	_____
HAND LABOR					
Implements	hour	9.06	0.1571	1.42	_____
DIESEL FUEL					
Tractors	gal	3.29	3.6516	12.01	_____
REPAIR & MAINTENANCE					
Implements	acre	5.08	1.0000	5.08	_____
Tractors	acre	1.25	1.0000	1.25	_____
INTEREST ON OP. CAP.	acre	5.95	1.0000	5.95	_____

TOTAL DIRECT EXPENSES				280.06	_____
FIXED EXPENSES					
Implements	acre	9.25	1.0000	9.25	_____
Tractors	acre	7.21	1.0000	7.21	_____

TOTAL FIXED EXPENSES				16.46	_____

TOTAL SPECIFIED EXPENSES				296.52	_____

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

Table 15.A Estimated resource use and costs for field operations, per acre
Tall fescue-white clover pasture establishment,
novel/endophyte free, sod-seeding, Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST	
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST		
						-----dollars-----				dollars		-----dollars-----				
Soil Testing	acre			0.33	Aug							0.3300	10.00	3.30	3.30	
Lime (Spread)	ton			1.00	Aug								59.00			
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Sep	0.88	0.49	0.16	0.18	0.09	1.24				2.95	
Glyphosate 3lbs a.e. pt												2.5000	1.81	4.53	4.53	
Custom Spread(Truck) appl				1.00	Sep							1.0000	7.50	7.50	7.50	
Nitrogen	cwt											0.3000	34.22	10.27	10.27	
Phosphate (46% P2O5) cwt												1.5000	51.80	77.70	77.70	
Potash (60% K2O) cwt												1.0000	42.25	42.25	42.25	
Grain Drill	12'	2WD 75	0.157	1.00	Sep	2.21	1.23	1.66	3.06	0.31	3.82				11.98	
Fescue Seed	lb											20.0000	3.00	60.00	60.00	
Grain Drill	12'	2WD 75	0.157	1.00	Sep	2.21	1.23	1.66	3.06	0.31	3.82				11.98	
White Clover Seed	lb											3.0000	4.20	12.60	12.60	
Custom Spread(Truck) appl				1.00	Apr							1.0000	7.50	7.50	7.50	
Nitrogen	cwt											0.3000	34.22	10.27	10.27	
						-----	-----	-----	-----	-----	-----	-----			-----	
TOTALS						5.30	2.95	3.48	6.30	0.72	8.88			235.92		262.83
INTEREST ON OPERATING CAPITAL																5.52
UNALLOCATED LABOR																0.00
TOTAL SPECIFIED COST																268.35

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

Table 15.B Estimated costs per acre
Tall fescue-white clover pasture establishment,
novel/endophyte free, sod-seeding, Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Nitrogen	cwt	34.22	0.6000	20.53	_____
Phosphate (46% P2O5)	cwt	51.80	1.5000	77.70	_____
Potash (60% K2O)	cwt	42.25	1.0000	42.25	_____
HERBICIDE					
Glyphosate 3lbs a.e.	pt	1.81	2.5000	4.53	_____
SEED/PLANTS					
Fescue Seed	lb	3.00	20.0000	60.00	_____
White Clover Seed	lb	4.20	3.0000	12.60	_____
CUSTOM FERT					
Custom Spread(Truck)	appl	7.50	2.0000	15.00	_____
SERVICE FEE					
Soil Testing	acre	10.00	0.3300	3.30	_____
OPERATOR LABOR					
Tractors	hour	15.27	0.3769	5.76	_____
HAND LABOR					
Implements	hour	9.06	0.3456	3.12	_____
DIESEL FUEL					
Tractors	gal	3.29	1.4552	4.80	_____
REPAIR & MAINTENANCE					
Implements	acre	3.48	1.0000	3.48	_____
Tractors	acre	0.50	1.0000	0.50	_____
INTEREST ON OP. CAP.	acre	5.52	1.0000	5.52	_____

TOTAL DIRECT EXPENSES				259.10	_____
FIXED EXPENSES					
Implements	acre	6.30	1.0000	6.30	_____
Tractors	acre	2.95	1.0000	2.95	_____

TOTAL FIXED EXPENSES				9.25	_____

TOTAL SPECIFIED EXPENSES				268.35	_____

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

Table 16.A Estimated resource use and costs for field operations, per acre
Tall fescue-white clover pasture maintenance
novel-endophyte free, Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Rotary Mower	12'	2WD 75	0.098	1.00	Aug	1.38	0.77	1.12	0.76	0.09	1.50				5.53
Soil Testing	acre			0.33	Aug							0.3300	10.00	3.30	3.30
Lime (Spread)	ton			1.00	Aug								59.00		
Tailgate Seeder		2WD 50	0.200	1.00	Oct	1.84	0.85	0.33	0.36	0.20	3.05				6.43
White Clover Seed	lb											2.0000	4.20	8.40	8.40
Custom Spread(Truck)	appl			1.00	Oct							1.0000	7.50	7.50	7.50
Phosphate (46% P2O5)	cwt											1.5000	51.80	77.70	77.70
Potash (60% K2O)	cwt											1.0000	42.25	42.25	42.25
Nitrogen	cwt											0.3000	34.22	10.27	10.27
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Mar	0.88	0.49	0.16	0.18	0.09	1.24				2.95
2,4-D amine	pt											1.5000	2.64	3.96	3.96
Custom Spread(Truck)	appl			1.00	Apr							1.0000	7.50	7.50	7.50
Nitrogen	cwt											0.3000	34.22	10.27	10.27
Prorated Est Cost	acre				Oct							1.0000			20.63
						-----	-----	-----	-----	-----	-----	-----			-----
TOTALS						4.10	2.11	1.61	1.30	0.39	5.79			171.15	206.69
INTEREST ON OPERATING CAPITAL															3.25
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															209.94

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

Table 16.B Estimated costs per acre
Tall fescue-white clover pasture maintenance
novel-endophyte free, Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Phosphate (46% P2O5)	cwt	51.80	1.5000	77.70	_____
Potash (60% K2O)	cwt	42.25	1.0000	42.25	_____
Nitrogen	cwt	34.22	0.6000	20.53	_____
HERBICIDE					
2,4-D amine	pt	2.64	1.5000	3.96	_____
SEED/PLANTS					
White Clover Seed	lb	4.20	2.0000	8.40	_____
CUSTOM FERT					
Custom Spread(Truck)	appl	7.50	2.0000	15.00	_____
SERVICE FEE					
Soil Testing	acre	10.00	0.3300	3.30	_____
OPERATOR LABOR					
Tractors	hour	15.27	0.3608	5.51	_____
HAND LABOR					
Implements	hour	9.06	0.0313	0.28	_____
DIESEL FUEL					
Tractors	gal	3.29	1.1358	3.74	_____
REPAIR & MAINTENANCE					
Implements	acre	1.61	1.0000	1.61	_____
Tractors	acre	0.36	1.0000	0.36	_____
INTEREST ON OP. CAP.	acre	3.25	1.0000	3.25	_____

TOTAL DIRECT EXPENSES				185.90	_____
FIXED EXPENSES					
Implements	acre	1.30	1.0000	1.30	_____
Tractors	acre	2.11	1.0000	2.11	_____
Prorated Est Cost	acre	20.63	1.0000	20.63	_____

TOTAL FIXED EXPENSES				24.04	_____

TOTAL SPECIFIED EXPENSES				209.94	_____

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

Table 17.A Estimated resource use and costs for field operations, per acre
 No-till renovation of old K-31 tall fescue pasture with
 novel endophyte/endophyte free tall fescue, Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Soil Testing	acre			0.33	Mar							0.3300	10.00	3.30	3.30
Lime (Spread)	ton			1.00	Mar								59.00		
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Apr	0.88	0.49	0.16	0.18	0.09	1.24				2.95
Glyphosate 3lbs a.e.	pt											2.5000	1.81	4.53	4.53
Surfactant	pt											0.4000	3.30	1.32	1.32
NT Grain Drill	12'	2WD 75	0.196	1.00	May	2.75	1.54	3.45	6.36	0.39	4.78				18.88
SS, PM, FS Seed	lb											25.0000	1.36	34.00	34.00
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Sep	0.88	0.49	0.16	0.18	0.09	1.24				2.95
Glyphosate 3lbs a.e.	pt											2.5000	1.81	4.53	4.53
NT Grain Drill	12'	2WD 75	0.196	1.00	Sep	2.75	1.54	3.45	6.36	0.39	4.78				18.88
White Clover Seed	lb											3.0000	4.20	12.60	12.60
NT Grain Drill	12'	2WD 75	0.196	1.00	Sep	2.75	1.54	3.45	6.36	0.39	4.78				18.88
Fescue Seed	lb											20.0000	3.00	60.00	60.00
Custom Spread(Truck)	appl			1.00	Oct							1.0000	7.50	7.50	7.50
Nitrogen	cwt											0.5000	34.22	17.11	17.11
Phosphate (46% P2O5)	cwt											1.5000	51.80	77.70	77.70
Potash (60% K2O)	cwt											1.0000	42.25	42.25	42.25
Custom Spread(Truck)	appl			1.00	Apr							1.0000	7.50	7.50	7.50
Nitrogen	cwt											0.5000	34.22	17.11	17.11
						-----	-----	-----	-----	-----	-----	-----			-----
TOTALS						10.01	5.60	10.67	19.44	1.36	16.82			289.45	351.99
INTEREST ON OPERATING CAPITAL															2.92
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															354.91

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

Research suggests tall fescue renovation to novel endophyte fescue will
 require 2 years glyphosate applications to completely eliminate existing stand.

SS = Sorghum x Sudan Hybrid, PM = Pearl Millet.

Table 17.B Estimated costs per acre
 No-till renovation of old K-31 tall fescue pasture with
 novel endophyte/endophyte free tall fescue, Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Nitrogen	cwt	34.22	1.0000	34.22	
Phosphate (46% P2O5)	cwt	51.80	1.5000	77.70	
Potash (60% K2O)	cwt	42.25	1.0000	42.25	
HERBICIDE					
Glyphosate 3lbs a.e.	pt	1.81	5.0000	9.05	
SEED/PLANTS					
SS, PM, FS Seed	lb	1.36	25.0000	34.00	
White Clover Seed	lb	4.20	3.0000	12.60	
Fescue Seed	lb	3.00	20.0000	60.00	
ADJUVANTS					
Surfactant	pt	3.30	0.4000	1.32	
CUSTOM FERT					
Custom Spread(Truck)	appl	7.50	2.0000	15.00	
SERVICE FEE					
Soil Testing	acre	10.00	0.3300	3.30	
OPERATOR LABOR					
Tractors	hour	15.27	0.7146	10.92	
HAND LABOR					
Implements	hour	9.06	0.6519	5.90	
DIESEL FUEL					
Tractors	gal	3.29	2.7588	9.07	
REPAIR & MAINTENANCE					
Implements	acre	10.67	1.0000	10.67	
Tractors	acre	0.94	1.0000	0.94	
INTEREST ON OP. CAP.	acre	2.92	1.0000	2.92	

TOTAL DIRECT EXPENSES				329.87	
FIXED EXPENSES					
Implements	acre	19.44	1.0000	19.44	
Tractors	acre	5.60	1.0000	5.60	

TOTAL FIXED EXPENSES				25.04	

TOTAL SPECIFIED EXPENSES				354.91	

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

Research suggests tall fescue renovation to novel endophyte fescue will require 2 years glyphosate applications to completely eliminate existing stand.

Table 18.A Estimated resource use and costs for field operations, per acre
 Ryegrass annual pasture, prepared seedbed
 Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Soil Testing	acre			0.33	Aug							0.3300	10.00	3.30	3.30
Lime (Spread)	ton			1.00	Aug								59.00		
Chisel Plow	15'	2WD 75	0.130	1.00	Aug	1.84	1.02	0.65	1.09	0.13	2.00				6.60
Disk Harrow	14'	2WD 75	0.140	2.00	Aug	3.94	2.20	2.10	4.28	0.28	4.29				16.81
Custom Spread(Truck)	appl			1.00	Sep							1.0000	7.50	7.50	7.50
Phosphate (46% P2O5)	cwt											1.5000	51.80	77.70	77.70
Potash (60% K2O)	cwt											1.0000	42.25	42.25	42.25
Ryegrass Seed	lb											25.0000	1.13	28.25	28.25
Section Harrow	13'	2WD 75	0.119	1.00	Sep	1.68	0.94	0.12	0.17	0.11	1.82				4.73
Cultipacker	12'	2WD 75	0.124	1.00	Sep	1.75	0.97	0.22	0.29	0.12	1.90				5.13
Custom Spread(Truck)	appl			1.00	Oct							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.0000	34.22	34.22	34.22
Custom Spread(Truck)	appl			1.00	Dec							1.0000	7.50	7.50	7.50
Nitrogen	cwt											2.0000	34.22	68.44	68.44
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Dec	0.88	0.49	0.16	0.18	0.09	1.24				2.95
2,4-D amine	pt											1.0000	2.64	2.64	2.64
Custom Spread(Truck)	appl			1.00	Mar							1.0000	7.50	7.50	7.50
Nitrogen	cwt											2.0000	34.22	68.44	68.44
TOTALS						10.09	5.62	3.25	6.01	0.74	11.25			355.24	391.46
INTEREST ON OPERATING CAPITAL															6.47
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															397.93

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

Table 18.B Estimated costs per acre
 Ryegrass annual pasture, prepared seedbed
 Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Phosphate (46% P2O5)	cwt	51.80	1.5000	77.70	_____
Potash (60% K2O)	cwt	42.25	1.0000	42.25	_____
Nitrogen	cwt	34.22	5.0000	171.10	_____
HERBICIDE					
2,4-D amine	pt	2.64	1.0000	2.64	_____
SEED/PLANTS					
Ryegrass Seed	lb	1.13	25.0000	28.25	_____
CUSTOM FERT					
Custom Spread(Truck)	appl	7.50	4.0000	30.00	_____
SERVICE FEE					
Soil Testing	acre	10.00	0.3300	3.30	_____
OPERATOR LABOR					
Tractors	hour	15.27	0.7181	10.97	_____
HAND LABOR					
Implements	hour	9.06	0.0313	0.28	_____
DIESEL FUEL					
Tractors	gal	3.29	2.7723	9.12	_____
REPAIR & MAINTENANCE					
Implements	acre	3.25	1.0000	3.25	_____
Tractors	acre	0.97	1.0000	0.97	_____
INTEREST ON OP. CAP.	acre	6.47	1.0000	6.47	_____

TOTAL DIRECT EXPENSES				386.30	_____
FIXED EXPENSES					
Implements	acre	6.01	1.0000	6.01	_____
Tractors	acre	5.62	1.0000	5.62	_____

TOTAL FIXED EXPENSES				11.63	_____

TOTAL SPECIFIED EXPENSES				397.93	_____

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

Table 19.A Estimated resource use and costs for field operations, per acre
 No-till ryegrass into volunteer summer grasses
 Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Soil Testing	acre			0.33	Aug							0.3300	10.00	3.30	3.30
Lime (Spread)	ton			1.00	Aug								59.00		
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Aug	0.88	0.49	0.16	0.18	0.09	1.24				2.95
Glyphosate 3lbs a.e. pt												2.0000	1.81	3.62	3.62
Custom Spread(Truck) appl				1.00	Sep							1.0000	7.50	7.50	7.50
Phosphate (46% P2O5) cwt												1.0000	51.80	51.80	51.80
Potash (60% K2O) cwt												1.0000	42.25	42.25	42.25
NT Grain Drill	12'	2WD 75	0.196	1.00	Sep	2.75	1.54	3.45	6.36	0.39	4.78				18.88
Ryegrass Seed	lb											35.0000	1.13	39.55	39.55
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Sep	0.88	0.49	0.16	0.18	0.09	1.24				2.95
Mustang Max	oz											0.1900	0.97	0.18	0.18
Custom Spread(Truck) appl				1.00	Oct							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.0000	34.22	34.22	34.22
Custom Spread(Truck) appl				1.00	Dec							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.0000	34.22	34.22	34.22
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Dec	0.88	0.49	0.16	0.18	0.09	1.24				2.95
Gramoxone SL 2.0	oz											1.0000	0.19	0.19	0.19
Custom Spread(Truck) appl				1.00	Mar							1.0000	7.50	7.50	7.50
Nitrogen	cwt											2.0000	34.22	68.44	68.44
TOTALS						5.39	3.01	3.93	6.90	0.67	8.50			307.77	335.50
INTEREST ON OPERATING CAPITAL															5.54
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															341.04

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

Table 19.B Estimated costs per acre
 No-till ryegrass into volunteer summer grasses
 Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Phosphate (46% P2O5)	cwt	51.80	1.0000	51.80	_____
Potash (60% K2O)	cwt	42.25	1.0000	42.25	_____
Nitrogen	cwt	34.22	4.0000	136.88	_____
HERBICIDE					
Glyphosate 3lbs a.e.	pt	1.81	2.0000	3.62	_____
Gramoxone SL 2.0	oz	0.19	1.0000	0.19	_____
INSECTICIDE					
Mustang Max	oz	0.97	0.1900	0.18	_____
SEED/PLANTS					
Ryegrass Seed	lb	1.13	35.0000	39.55	_____
CUSTOM FERT					
Custom Spread(Truck)	appl	7.50	4.0000	30.00	_____
SERVICE FEE					
Soil Testing	acre	10.00	0.3300	3.30	_____
OPERATOR LABOR					
Tractors	hour	15.27	0.3844	5.88	_____
HAND LABOR					
Implements	hour	9.06	0.2904	2.62	_____
DIESEL FUEL					
Tractors	gal	3.29	1.4842	4.89	_____
REPAIR & MAINTENANCE					
Implements	acre	3.93	1.0000	3.93	_____
Tractors	acre	0.50	1.0000	0.50	_____
INTEREST ON OP. CAP.	acre	5.54	1.0000	5.54	_____

TOTAL DIRECT EXPENSES				331.13	_____
FIXED EXPENSES					
Implements	acre	6.90	1.0000	6.90	_____
Tractors	acre	3.01	1.0000	3.01	_____

TOTAL FIXED EXPENSES				9.91	_____

TOTAL SPECIFIED EXPENSES				341.04	_____

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

Table 20.A Estimated resource use and costs for field operations, per acre
Overseeded annual ryegrass pasture maintenance,
Broadcast, Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST	
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST		
						-----dollars-----				dollars		-----dollars-----				
Soil Testing	acre			0.33	Aug							0.3300	10.00	3.30	3.30	
Lime (Spread)	ton			1.00	Aug								59.00			
Rotary Mower	12'	2WD 75	0.098	1.00	Aug	1.38	0.77	1.12	0.76	0.09	1.50				5.53	
Disk Harrow	14'	2WD 75	0.140	1.00	Oct	1.97	1.10	1.05	2.14	0.14	2.14				8.40	
Custom Spread + Seed appl				1.00	Oct							1.0000	5.00	5.00	5.00	
Phosphate (46% P2O5)	cwt											2.0000	51.80	103.60	103.60	
Potash (60% K2O)	cwt											1.5000	42.25	63.38	63.38	
Ryegrass Seed	lb											30.0000	1.13	33.90	33.90	
Section Harrow	13'	2WD 75	0.119	1.00	Oct	1.68	0.94	0.12	0.17	0.11	1.82				4.73	
Custom Spread(Truck)	appl			1.00	Dec							1.0000	7.50	7.50	7.50	
Nitrogen	cwt											0.9000	34.22	30.80	30.80	
Custom Spread(Truck)	appl			1.00	Mar							1.0000	7.50	7.50	7.50	
Nitrogen	cwt											1.2000	34.22	41.06	41.06	
Prorated Est Cost	acre				Jun							1.0000			30.59	
						-----	-----	-----	-----	-----	-----				-----	
TOTALS						5.03	2.81	2.29	3.07	0.35	5.46				296.04	345.29
INTEREST ON OPERATING CAPITAL																5.17
UNALLOCATED LABOR																0.00
TOTAL SPECIFIED COST																350.46

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

Table 20.B Estimated costs per acre
Overseeded annual ryegrass pasture maintenance,
Broadcast, Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Phosphate (46% P2O5)	cwt	51.80	2.0000	103.60	_____
Potash (60% K2O)	cwt	42.25	1.5000	63.38	_____
Nitrogen	cwt	34.22	2.1000	71.86	_____
SEED/PLANTS					
Ryegrass Seed	lb	1.13	30.0000	33.90	_____
CUSTOM FERT					
Custom Spread (Truck)	appl	7.50	2.0000	15.00	_____
SERVICE FEE					
Soil Testing	acre	10.00	0.3300	3.30	_____
CUSTOM PLANT					
Custom Spread + Seed	appl	5.00	1.0000	5.00	_____
OPERATOR LABOR					
Tractors	hour	15.27	0.3579	5.46	_____
DIESEL FUEL					
Tractors	gal	3.29	1.3819	4.55	_____
REPAIR & MAINTENANCE					
Implements	acre	2.29	1.0000	2.29	_____
Tractors	acre	0.48	1.0000	0.48	_____
INTEREST ON OP. CAP.	acre	5.17	1.0000	5.17	_____

TOTAL DIRECT EXPENSES				313.99	_____
FIXED EXPENSES					
Implements	acre	3.07	1.0000	3.07	_____
Tractors	acre	2.81	1.0000	2.81	_____
Prorated Est Cost	acre	30.59	1.0000	30.59	_____

TOTAL FIXED EXPENSES				36.47	_____

TOTAL SPECIFIED EXPENSES				350.46	_____

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

Table 21.A Estimated resource use and costs for field operations, per acre
Sorghum x Sudan (SS), Pearl Millet (PM),
Forage Sorghum (FS) annual hay, Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Soil Testing	acre			0.33	Apr							0.3300	10.00	3.30	3.30
Lime (Spread)	ton			1.00	Apr								59.00		
Chisel Plow	15'	2WD 75	0.130	1.00	Apr	1.84	1.02	0.65	1.09	0.13	2.00				6.60
Disk Harrow	14'	2WD 75	0.140	2.00	Apr	3.94	2.20	2.10	4.28	0.28	4.29				16.81
Custom Spread(Truck)	appl			1.00	Apr							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.5000	34.22	51.33	51.33
Phosphate (46% P2O5)	cwt											1.0000	51.80	51.80	51.80
Potash (60% K2O)	cwt											1.0000	42.25	42.25	42.25
Grain Drill	12'	2WD 75	0.157	1.00	May	2.21	1.23	1.66	3.06	0.31	3.82				11.98
SS, PM, FS Seed	lb											30.0000	1.36	40.80	40.80
Spray (Broadcast)	27'	2WD 75	0.062	1.00	May	0.88	0.49	0.16	0.18	0.09	1.24				2.95
2,4-D amine	pt											1.5000	2.64	3.96	3.96
Hay Cut-Cond	9'	2WD 75	0.229	1.00	Jun	3.22	1.79	4.31	4.68	0.22	3.50				17.50
Hay Rake	8.5'	2WD 50	0.202	2.00	Jun	3.71	1.71	1.43	1.94	0.40	6.18				14.97
Hay Baler	Lg Round	2WD 75	0.211	1.00	Jun	2.97	1.66	6.53	7.88	0.21	3.23				22.27
Twine	bun											0.0800	28.50	2.28	2.28
Hay Mover	1B Lift	2WD 75	0.300	1.00	Jun	4.21	2.35	0.06	0.13	0.30	4.58				11.33
Custom Spread(Truck)	appl			1.00	Jun							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.5000	34.22	51.33	51.33
Hay Cut-Cond	9'	2WD 75	0.229	1.00	Jul	3.22	1.79	4.31	4.68	0.22	3.50				17.50
Hay Rake	8.5'	2WD 50	0.202	2.00	Jul	3.71	1.71	1.43	1.94	0.40	6.18				14.97
Hay Baler	Lg Round	2WD 75	0.211	1.00	Jul	2.97	1.66	6.53	7.88	0.21	3.23				22.27
Twine	bun											0.0600	28.50	1.71	1.71
Hay Mover	1B Lift	2WD 75	0.300	1.00	Jul	4.21	2.35	0.06	0.13	0.30	4.58				11.33
Custom Spread(Truck)	appl			1.00	Aug							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.5000	34.22	51.33	51.33
Potash (60% K2O)	cwt											1.0000	42.25	42.25	42.25
Hay Cut-Cond	9'	2WD 75	0.229	1.00	Aug	3.22	1.79	4.31	4.68	0.22	3.50				17.50
Hay Rake	8.5'	2WD 50	0.202	2.00	Aug	3.71	1.71	1.43	1.94	0.40	6.18				14.97
Hay Baler	Lg Round	2WD 75	0.211	1.00	Aug	2.97	1.66	6.53	7.88	0.21	3.23				22.27
Twine	bun											0.0400	28.50	1.14	1.14
Hay Mover	1B Lift	2WD 75	0.300	1.00	Aug	4.21	2.35	0.06	0.13	0.30	4.58				11.33
Hay Cut-Cond	9'	2WD 75	0.229	1.00	Sep	3.22	1.79	4.31	4.68	0.22	3.50				17.50
Hay Rake	8.5'	2WD 50	0.202	2.00	Sep	3.71	1.71	1.43	1.94	0.40	6.18				14.97
Hay Baler	Lg Round	2WD 75	0.211	1.00	Sep	2.97	1.66	6.53	7.88	0.21	3.23				22.27
Twine	bun											0.0300	28.50	0.86	0.86
Hay Mover	1B Lift	2WD 75	0.300	1.00	Sep	4.21	2.35	0.06	0.13	0.30	4.58				11.33
TOTALS						65.31	34.98	53.89	67.13	5.40	81.31			366.84	669.46
INTEREST ON OPERATING CAPITAL															11.11
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															680.57

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

2,4-D applied when sorghum/sudan is 4 to 6 inches tall.

Table 21.B Estimated costs per acre
Sorghum x Sudan (SS), Pearl Millet (PM),
Forage Sorghum (FS) annual hay, Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Nitrogen	cwt	34.22	4.5000	153.99	_____
Phosphate (46% P2O5)	cwt	51.80	1.0000	51.80	_____
Potash (60% K2O)	cwt	42.25	2.0000	84.50	_____
HERBICIDE					
2,4-D amine	pt	2.64	1.5000	3.96	_____
SEED/PLANTS					
SS, PM, FS Seed	lb	1.36	30.0000	40.80	_____
OTHER					
Twine	bun	28.50	0.2100	5.99	_____
CUSTOM FERT					
Custom Spread(Truck)	appl	7.50	3.0000	22.50	_____
SERVICE FEE					
Soil Testing	acre	10.00	0.3300	3.30	_____
OPERATOR LABOR					
Tractors	hour	15.27	5.2119	79.61	_____
HAND LABOR					
Implements	hour	9.06	0.1884	1.70	_____
DIESEL FUEL					
Tractors	gal	3.29	18.0384	59.34	_____
REPAIR & MAINTENANCE					
Implements	acre	53.89	1.0000	53.89	_____
Tractors	acre	5.97	1.0000	5.97	_____
INTEREST ON OP. CAP.	acre	11.11	1.0000	11.11	_____

TOTAL DIRECT EXPENSES				578.46	_____
FIXED EXPENSES					
Implements	acre	67.13	1.0000	67.13	_____
Tractors	acre	34.98	1.0000	34.98	_____

TOTAL FIXED EXPENSES				102.11	_____

TOTAL SPECIFIED EXPENSES				680.57	_____

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.
2,4-D applied when sorghum/sudan is 4 to 6 inches tall.

Table 22.A Estimated resource use and costs for field operations, per acre
Sorghum x Sudan (SS), Pearl Millet (PM),
Forage Sorghum (FS) annual pasture, Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Soil Testing	acre			0.33	Apr							0.3300	10.00	3.30	3.30
Lime (Spread)	ton			1.00	Apr								59.00		
Chisel Plow	15'	2WD 75	0.130	1.00	Apr	1.84	1.02	0.65	1.09	0.13	2.00				6.60
Custom Spread(Truck)	appl			1.00	May							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.0000	34.22	34.22	34.22
Phosphate (46% P2O5)	cwt											1.0000	51.80	51.80	51.80
Potash (60% K2O)	cwt											1.0000	42.25	42.25	42.25
Disk Harrow	14'	2WD 75	0.140	2.00	May	3.94	2.20	2.10	4.28	0.28	4.29				16.81
Spray (Broadcast)	27'	2WD 75	0.062	1.00	May	0.88	0.49	0.16	0.18	0.09	1.24				2.95
2,4-D amine	pt											1.5000	2.64	3.96	3.96
Grain Drill	12'	2WD 75	0.157	1.00	May	2.21	1.23	1.66	3.06	0.31	3.82				11.98
SS, PM, FS Seed	lb											30.0000	1.36	40.80	40.80
Custom Spread(Truck)	appl			1.00	Jul							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.0000	34.22	34.22	34.22
TOTALS						8.87	4.94	4.57	8.61	0.81	11.35			225.55	263.89
INTEREST ON OPERATING CAPITAL															5.60
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															269.49

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

2,4-D applied when sorghum/sudan is 4 to 6 inches tall.

Table 22.B Estimated costs per acre
Sorghum x Sudan (SS), Pearl Millet (PM),
Forage Sorghum (FS) annual pasture, Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Nitrogen	cwt	34.22	2.0000	68.44	_____
Phosphate (46% P2O5)	cwt	51.80	1.0000	51.80	_____
Potash (60% K2O)	cwt	42.25	1.0000	42.25	_____
HERBICIDE					
2,4-D amine	pt	2.64	1.5000	3.96	_____
SEED/PLANTS					
SS, PM, FS Seed	lb	1.36	30.0000	40.80	_____
CUSTOM FERT					
Custom Spread(Truck)	appl	7.50	2.0000	15.00	_____
SERVICE FEE					
Soil Testing	acre	10.00	0.3300	3.30	_____
OPERATOR LABOR					
Tractors	hour	15.27	0.6313	9.65	_____
HAND LABOR					
Implements	hour	9.06	0.1884	1.70	_____
DIESEL FUEL					
Tractors	gal	3.29	2.4374	8.02	_____
REPAIR & MAINTENANCE					
Implements	acre	4.57	1.0000	4.57	_____
Tractors	acre	0.85	1.0000	0.85	_____
INTEREST ON OP. CAP.	acre	5.60	1.0000	5.60	_____

TOTAL DIRECT EXPENSES				255.94	_____
FIXED EXPENSES					
Implements	acre	8.61	1.0000	8.61	_____
Tractors	acre	4.94	1.0000	4.94	_____

TOTAL FIXED EXPENSES				13.55	_____

TOTAL SPECIFIED EXPENSES				269.49	_____

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.
2,4-D applied when sorghum/sudan is 4 to 6 inches tall.

Table 23.A Estimated resource use and costs for field operations, per acre
Sorghum silage
Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Lime (Spread)	ton			1.00	Sep								59.00		
Chisel Plow	15'	2WD 75	0.130	2.00	Apr	3.68	2.05	1.31	2.17	0.26	4.00				13.21
Spin Spreader	5 Ton	2WD 75	0.042	1.00	May	0.59	0.33	0.34	0.67	0.08	1.02				2.95
Nitrogen	cwt											1.0700	34.22	36.62	36.62
Phosphate (46% P2O5)	cwt											1.5000	51.80	77.70	77.70
Potash (60% K2O)	cwt											2.0000	42.25	84.50	84.50
Field Cultivate	12'	2WD 75	0.124	1.00	May	1.75	0.97	0.40	1.64	0.12	1.90				6.66
Disk Bed (Hipper)	4R-38	2WD 75	0.147	1.00	May	2.08	1.16	0.39	0.99	0.14	2.25				6.87
Row Cond	13'	2WD 75	0.119	1.00	May	1.68	0.94	0.78	1.10	0.11	1.82				6.32
Plant & Pre Rigid	4R-38	2WD 75	0.153	1.00	May	2.16	1.20	1.78	3.27	0.30	3.74				12.15
Forage Sorghum Seed	lb											6.0000	0.86	5.16	5.16
Bicep 11 Magnum	qt											2.0000	11.80	23.60	23.60
Cultivate	4R-38	2WD 75	0.162	1.00	May	2.28	1.27	0.69	1.77	0.16	2.48				8.49
Spin Spreader	5 Ton	2WD 75	0.042	1.00	May	0.59	0.33	0.34	0.67	0.08	1.02				2.95
Nitrogen	cwt											2.6500	34.22	90.68	90.68
Cultivate	4R-38	2WD 75	0.162	1.00	Jun	2.28	1.27	0.69	1.77	0.16	2.48				8.49
Silage Harvester	2-Row	2WD 75	0.510	1.00	Sep	7.17	3.99	15.24	16.53	0.51	7.79				50.72
Silage Wagon 12T	12-Ton	2WD 75	0.510	1.00	Sep	7.17	3.99	3.49	7.49	0.51	7.79				29.93
TOTALS						31.43	17.50	25.45	38.07	2.47	36.29			318.26	467.00
INTEREST ON OPERATING CAPITAL															1.33
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															468.33

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

Table 23.B Estimated costs per acre
Sorghum silage
Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Nitrogen	cwt	34.22	3.7200	127.30	_____
Phosphate (46% P2O5)	cwt	51.80	1.5000	77.70	_____
Potash (60% K2O)	cwt	42.25	2.0000	84.50	_____
HERBICIDE					
Bicep 11 Magnum	qt	11.80	2.0000	23.60	_____
SEED/PLANTS					
Forage Sorghum Seed	lb	0.86	6.0000	5.16	_____
OPERATOR LABOR					
Tractors	hour	15.27	2.2365	34.14	_____
HAND LABOR					
Implements	hour	9.06	0.2379	2.15	_____
DIESEL FUEL					
Tractors	gal	3.29	8.6340	28.40	_____
REPAIR & MAINTENANCE					
Implements	acre	25.45	1.0000	25.45	_____
Tractors	acre	3.03	1.0000	3.03	_____
INTEREST ON OP. CAP.	acre	1.33	1.0000	1.33	_____

TOTAL DIRECT EXPENSES				412.76	_____
FIXED EXPENSES					
Implements	acre	38.07	1.0000	38.07	_____
Tractors	acre	17.50	1.0000	17.50	_____

TOTAL FIXED EXPENSES				55.57	_____

TOTAL SPECIFIED EXPENSES				468.33	_____

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

Table 24.A Estimated resource use and costs for field operations, per acre
 Ryegrass, Small Grains (oat, cereal rye, triticale),
 Annual Clover, Brassica mix annual pasture, prepared seedbed, Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Soil Testing	acre			0.33	Aug							0.3300	10.00	3.30	3.30
Lime (Spread)	ton			1.00	Aug								59.00		
Chisel Plow	15'	2WD 75	0.130	1.00	Aug	1.84	1.02	0.65	1.09	0.13	2.00				6.60
Disk Harrow	14'	2WD 75	0.140	1.00	Aug	1.97	1.10	1.05	2.14	0.14	2.14				8.40
Custom Spread(Truck)	appl			1.00	Sep							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.0700	34.22	36.62	36.62
Phosphate (46% P2O5)	cwt											1.0000	51.80	51.80	51.80
Potash (60% K2O)	cwt											1.0000	42.25	42.25	42.25
Section Harrow	13'	2WD 75	0.119	1.00	Sep	1.68	0.94	0.12	0.17	0.11	1.82				4.73
Grain Drill	12'	2WD 75	0.157	1.00	Sep	2.21	1.23	1.66	3.06	0.31	3.82				11.98
Ryegrass Seed	lb											18.0000	1.13	20.34	20.34
Small Grains Seed	lb											60.0000	0.42	25.20	25.20
Brassica Seed	lb											2.0000	1.55	3.10	3.10
Crimson Clover Seed	lb											15.0000	1.80	27.00	27.00
						-----	-----	-----	-----	-----	-----	-----			-----
TOTALS						7.70	4.29	3.48	6.46	0.70	9.78			217.11	248.82
INTEREST ON OPERATING CAPITAL															6.01
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															254.83

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

Table 24.B Estimated costs per acre
 Ryegrass, Small Grains (oat, cereal rye, triticale),
 Annual Clover, Brassica mix annual pasture, prepared seedbed,
 Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Nitrogen	cwt	34.22	1.0700	36.62	_____
Phosphate (46% P2O5)	cwt	51.80	1.0000	51.80	_____
Potash (60% K2O)	cwt	42.25	1.0000	42.25	_____
SEED/PLANTS					
Ryegrass Seed	lb	1.13	18.0000	20.34	_____
Small Grains Seed	lb	0.42	60.0000	25.20	_____
Brassica Seed	lb	1.55	2.0000	3.10	_____
Crimson Clover Seed	lb	1.80	15.0000	27.00	_____
CUSTOM FERT					
Custom Spread(Truck)	appl	7.50	1.0000	7.50	_____
SERVICE FEE					
Soil Testing	acre	10.00	0.3300	3.30	_____
OPERATOR LABOR					
Tractors	hour	15.27	0.5478	8.36	_____
HAND LABOR					
Implements	hour	9.06	0.1571	1.42	_____
DIESEL FUEL					
Tractors	gal	3.29	2.1149	6.96	_____
REPAIR & MAINTENANCE					
Implements	acre	3.48	1.0000	3.48	_____
Tractors	acre	0.74	1.0000	0.74	_____
INTEREST ON OP. CAP.	acre	6.01	1.0000	6.01	_____

TOTAL DIRECT EXPENSES				244.08	_____
FIXED EXPENSES					
Implements	acre	6.46	1.0000	6.46	_____
Tractors	acre	4.29	1.0000	4.29	_____

TOTAL FIXED EXPENSES				10.75	_____

TOTAL SPECIFIED EXPENSES				254.83	_____

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

Table 25.A Estimated resource use and costs for field operations, per acre
 Ryegrass-Small grains annual pasture, prepared seedbed
 Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST	
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST		
						-----dollars-----				dollars		-----dollars-----				
Soil Testing	acre			0.33	Aug							0.3300	10.00	3.30	3.30	
Lime (Spread)	ton			1.00	Aug								59.00			
Chisel Plow	15'	2WD 75	0.130	1.00	Aug	1.84	1.02	0.65	1.09	0.13	2.00				6.60	
Disk Harrow	14'	2WD 75	0.140	1.00	Aug	1.97	1.10	1.05	2.14	0.14	2.14				8.40	
Custom Spread(Truck)	appl			1.00	Sep							1.0000	7.50	7.50	7.50	
Nitrogen	cwt											1.0700	34.22	36.62	36.62	
Phosphate (46% P2O5)	cwt											1.0000	51.80	51.80	51.80	
Potash (60% K2O)	cwt											1.0000	42.25	42.25	42.25	
Section Harrow	13'	2WD 75	0.119	1.00	Sep	1.68	0.94	0.12	0.17	0.11	1.82				4.73	
Grain Drill	12'	2WD 75	0.157	1.00	Sep	2.21	1.23	1.66	3.06	0.31	3.82				11.98	
Ryegrass Seed	lb											20.0000	1.13	22.60	22.60	
Small Grains Seed	lb											70.0000	0.42	29.40	29.40	
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Mar	0.88	0.49	0.16	0.18	0.09	1.24				2.95	
2,4-D amine	pt											1.5000	2.64	3.96	3.96	
						-----	-----	-----	-----	-----	-----	-----			-----	
TOTALS						8.58	4.78	3.64	6.64	0.79	11.02				197.43	232.09
INTEREST ON OPERATING CAPITAL																5.08
UNALLOCATED LABOR																0.00
TOTAL SPECIFIED COST																237.17

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

Table 25.B Estimated costs per acre
 Ryegrass-Small grains annual pasture, prepared seedbed
 Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Nitrogen	cwt	34.22	1.0700	36.62	_____
Phosphate (46% P2O5)	cwt	51.80	1.0000	51.80	_____
Potash (60% K2O)	cwt	42.25	1.0000	42.25	_____
HERBICIDE					
2,4-D amine	pt	2.64	1.5000	3.96	_____
SEED/PLANTS					
Ryegrass Seed	lb	1.13	20.0000	22.60	_____
Small Grains Seed	lb	0.42	70.0000	29.40	_____
CUSTOM FERT					
Custom Spread(Truck)	appl	7.50	1.0000	7.50	_____
SERVICE FEE					
Soil Testing	acre	10.00	0.3300	3.30	_____
OPERATOR LABOR					
Tractors	hour	15.27	0.6105	9.32	_____
HAND LABOR					
Implements	hour	9.06	0.1884	1.70	_____
DIESEL FUEL					
Tractors	gal	3.29	2.3569	7.76	_____
REPAIR & MAINTENANCE					
Implements	acre	3.64	1.0000	3.64	_____
Tractors	acre	0.82	1.0000	0.82	_____
INTEREST ON OP. CAP.	acre	5.08	1.0000	5.08	_____

TOTAL DIRECT EXPENSES				225.75	_____
FIXED EXPENSES					
Implements	acre	6.64	1.0000	6.64	_____
Tractors	acre	4.78	1.0000	4.78	_____

TOTAL FIXED EXPENSES				11.42	_____

TOTAL SPECIFIED EXPENSES				237.17	_____

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

Table 26.A Estimated resource use and costs for field operations, per acre
Crabgrass establishment, broadcast
Mississippi, 2023

OPERATION/ OPERATING INPUT	SIZE/ UNIT	POWER UNIT SIZE	PERF RATE	TIMES OVER	MTH	POWER UNIT COST		EQUIPMENT COST		ALLOC LABOR		OPERATING/DURABLE INPUT			TOTAL COST
						DIRECT	FIXED	DIRECT	FIXED	HOURS	COST	AMOUNT	PRICE	COST	
						-----dollars-----				dollars		-----dollars-----			
Chisel Plow	15'	2WD 75	0.130	1.00	Mar	1.84	1.02	0.65	1.09	0.13	2.00				6.60
Soil Testing	acre			0.33	Apr							0.3300	10.00	3.30	3.30
Lime (Spread)	ton			1.00	Apr								59.00		
Disk Harrow	14'	2WD 75	0.140	1.00	Apr	1.97	1.10	1.05	2.14	0.14	2.14				8.40
Spray (Broadcast)	27'	2WD 75	0.062	1.00	Apr	0.91	0.65	0.16	0.18	0.09	1.24				3.14
Glyphosate 3lbs a.e.	pt											2.0000	1.81	3.62	3.62
Surfactant	pt											1.0000	3.30	3.30	3.30
Custom Spread(Truck)	appl			1.00	Apr							1.0000	7.50	7.50	7.50
Phosphate (46% P2O5)	cwt											1.5000	51.80	77.70	77.70
Potash (60% K2O)	cwt											1.0000	42.25	42.25	42.25
Disk Harrow	14'	2WD 75	0.140	1.00	Apr	1.97	1.10	1.05	2.14	0.14	2.14				8.40
Section Harrow	13'	2WD 75	0.119	1.00	Apr	1.68	0.94	0.12	0.17	0.11	1.82				4.73
Cyclone Spin	750Lb	2WD 105	0.200	1.00	Apr	3.98	2.44	0.26	0.95	0.30	3.96				11.59
Crabgrass seed	lb											20.0000	6.63	132.60	132.60
Cultipacker	12'	2WD 75	0.124	1.00	Apr	1.75	0.97	0.22	0.29	0.12	1.90				5.13
Custom Spread(Truck)	appl			1.00	Jun							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.0700	34.22	36.62	36.62
Rotary Mower	12'	2WD 75	0.098	1.00	Jun	1.38	0.77	1.12	0.76	0.09	1.50				5.53
Custom Spread(Truck)	appl			1.00	Jul							1.0000	7.50	7.50	7.50
Nitrogen	cwt											1.0700	34.22	36.62	36.62
TOTALS						15.48	8.99	4.63	7.72	1.14	16.70			358.51	412.03
INTEREST ON OPERATING CAPITAL															8.48
UNALLOCATED LABOR															0.00
TOTAL SPECIFIED COST															420.51

Note: Cost of production estimates are based on 2021 input prices.

Fertilization and lime decisions should be based on soil test recommendations.

Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.

This budget assumes 40 units of nitrogen being applied after emergence and 40 units applied after the first grazing cycle.

Table 26.B Estimated costs per acre
Crabgrass establishment, broadcast
Mississippi, 2023

ITEM	UNIT	PRICE	QUANTITY	AMOUNT	YOUR FARM
		dollars		dollars	
DIRECT EXPENSES					
FERTILIZER					
Phosphate (46% P2O5)	cwt	51.80	1.5000	77.70	_____
Potash (60% K2O)	cwt	42.25	1.0000	42.25	_____
Nitrogen	cwt	34.22	2.1400	73.23	_____
HERBICIDE					
Glyphosate 3lbs a.e.	pt	1.81	2.0000	3.62	_____
SEED/PLANTS					
Crabgrass seed	lb	6.63	20.0000	132.60	_____
ADJUVANTS					
Surfactant	pt	3.30	1.0000	3.30	_____
CUSTOM FERT					
Custom Spread(Truck)	appl	7.50	3.0000	22.50	_____
SERVICE FEE					
Soil Testing	acre	10.00	0.3300	3.30	_____
OPERATOR LABOR					
Tractors	hour	15.27	1.0163	15.51	_____
HAND LABOR					
Implements	hour	9.06	0.1313	1.19	_____
DIESEL FUEL					
Tractors	gal	3.29	4.2323	13.93	_____
REPAIR & MAINTENANCE					
Implements	acre	4.63	1.0000	4.63	_____
Tractors	acre	1.55	1.0000	1.55	_____
INTEREST ON OP. CAP.	acre	8.48	1.0000	8.48	_____
TOTAL DIRECT EXPENSES				403.80	_____
FIXED EXPENSES					
Implements	acre	7.72	1.0000	7.72	_____
Tractors	acre	8.99	1.0000	8.99	_____
TOTAL FIXED EXPENSES				16.71	_____
TOTAL SPECIFIED EXPENSES				420.51	_____

Note: Cost of production estimates are based on 2021 input prices.
Fertilization and lime decisions should be based on soil test recommendations.
Nitrogen price in an average of Urea, Ammonium Nitrate, and Ammonium Sulfate prices.
This budget assumes 40 units of nitrogen being applied after emergence and 40 units applied after the first grazing cycle.

Appendix

Appendix Table 1. Tractors/Harvesters: estimated purchase price, annual use, useful life, fuel use, and direct and fixed cost per hour, Mississippi, 2023

Item Name	Size	Purchase Price	Annual Use	Useful Life	Fuel Use	Labor	Fuel	R&M	Total Direct	Fixed	Total Cost
		dollars	hours	years	gal/hr	-----\$/hour-----					
Tractor(40-59hp)CAB	2WD 50	32,100	600	8	2.57	15.27	8.46	1.00	24.74	5.82	30.56
Tractor(40-59hp)CAB	MFWD 50	42,600	600	8	2.57	15.27	8.46	1.33	25.06	7.73	32.80
Tractor(40-59hp)RB	2WD 50	23,300	600	8	2.57	15.27	8.46	0.72	24.46	4.23	28.69
Tractor(40-59hp)RB	MFWD 50	30,500	600	8	2.57	15.27	8.46	0.95	24.69	5.53	30.22
Tractor(60-89hp)CAB	2WD 75	56,700	600	8	3.86	15.27	12.70	1.77	29.74	10.29	40.03
Tractor(60-89hp)CAB	MFWD 75	60,500	600	8	3.86	15.27	12.70	1.89	29.86	10.98	40.84
Tractor(60-89hp)RB	2WD 75	43,100	600	8	3.86	15.27	12.70	1.34	29.31	7.82	37.14
Tractor(60-89hp)RB	MFWD 75	43,800	600	8	3.86	15.27	12.70	1.36	29.33	7.95	37.29
Tractor(90-119hp)CB	2WD 105	74,700	600	8	5.40	15.27	17.78	2.33	35.38	13.56	48.95
Tractor(90-119hp)CB	MFWD 105	94,500	600	8	5.40	15.27	17.78	2.95	36.00	17.16	53.16
Tractor(90-119hp)RB	2WD 105	67,100	600	8	5.40	15.27	17.78	2.09	35.14	12.18	47.33
Tractor(90-119hp)RB	MFWD 105	75,300	600	8	5.40	15.27	17.78	2.35	35.40	13.67	49.07
Tractor(120-139hp)CB	2WD 130	117,400	600	8	6.69	15.27	22.01	3.66	40.95	21.32	62.27
Tractor(120-139hp)CB	MFWD 130	131,100	600	8	6.69	15.27	22.01	4.09	41.38	23.80	65.19
Tractor(140-159hp)CB	2WD 150	116,100	600	8	7.72	15.27	25.40	3.62	44.29	21.08	65.38
Tractor(140-159hp)CB	MFWD 150	143,000	600	8	7.72	15.27	25.40	4.46	45.14	25.97	71.11

Notes:

Labor: Includes allocated labor from power unit.

Total Direct: Does not include interest on operating capital.

Appendix Table 2 Implements: estimated purchase price, annual use, useful life, performance rate, and direct and fixed cost per acre, Mississippi, 2023

Item Name	Size	Power Unit	Purchase Price	Annual Use	Useful Life	Perf Rate	Labor	Fuel	---R&M--- Imp. P.U.	Total Direct	--Fixed-- Imp. P.U.	Total Cost
			dollars	hours	years	hr/ac	-----\$/acre-----					
Chisel Plow	15'	2WD 130	13,800	150	12	0.130	1.99	2.88	0.65 0.48	6.01	1.08 2.79	9.89
Cult & Post	4R-38	2WD 105	21,300	150	10	0.162	3.21	2.88	0.92 0.34	7.36	2.35 1.97	11.69
Cult & Post	6R-30	MFWD 150	25,100	150	10	0.137	2.72	3.49	0.92 0.61	7.75	2.34 3.57	13.66
Cult & Post	6R-38	MFWD 150	25,900	150	10	0.108	2.14	2.75	0.74 0.48	6.14	1.91 2.81	10.87
Cult & Post	8R-30	MFWD 150	30,400	150	10	0.103	2.04	2.61	0.83 0.46	5.95	2.13 2.67	10.76
Cultipacker	12'	2WD 105	7,470	300	12	0.124	1.90	2.21	0.21 0.26	4.59	0.28 1.51	6.39
Cultipacker	20'	MFWD 150	12,500	300	12	0.074	1.14	1.89	0.22 0.33	3.59	0.29 1.93	5.82
Cultivate	4R-38	2WD 105	16,000	150	10	0.162	2.47	2.88	0.69 0.34	6.40	1.76 1.97	10.14
Cultivate	6R-30	MFWD 150	19,700	150	10	0.137	2.09	3.49	0.72 0.61	6.92	1.84 3.57	12.34
Cultivate	6R-38	MFWD 150	20,600	150	10	0.108	1.65	2.75	0.59 0.48	5.49	1.52 2.81	9.83
Cultivate	8R-30	MFWD 150	25,100	150	10	0.103	1.57	2.61	0.69 0.46	5.34	1.75 2.67	9.78
Cyclone Spin	750lb	2WD 105	1,759	50	8	0.200	3.96	3.55	0.26 0.41	8.19	0.95 2.43	11.59
Disk & Incorporate	14'	2WD 130	32,200	200	10	0.147	2.91	3.24	1.42 0.54	8.12	2.41 3.14	13.68
Disk & Incorporate	24'	MFWD 150	52,200	200	10	0.085	1.70	2.18	1.34 0.38	5.61	2.28 2.23	10.13
Disk & Incorporate	32'	MFWD 150	67,900	200	10	0.064	1.27	1.63	1.31 0.28	4.51	2.23 1.67	8.41
Disk Bed (Hipper)	4R-38	MFWD 150	10,500	160	10	0.147	2.25	3.75	0.38 0.65	7.05	0.98 3.83	11.87
Disk Bed (Hipper)	6R-38	MFWD 150	16,200	160	10	0.098	1.50	2.50	0.39 0.44	4.85	1.01 2.56	8.43
Disk Bed (Hipper)	8R-30	MFWD 150	20,800	160	10	0.093	1.43	2.38	0.48 0.41	4.71	1.24 2.43	8.39
Disk Harrow	14'	2WD 130	26,900	180	10	0.140	2.14	3.08	1.04 0.51	6.79	2.13 2.99	11.92
Disk Harrow	24'	MFWD 150	46,900	180	10	0.081	1.24	2.07	1.06 0.36	4.76	2.17 2.12	9.06
Disk Harrow	32'	MFWD 150	62,600	180	10	0.061	0.93	1.55	1.06 0.27	3.83	2.17 1.59	7.60
Fert Appl (Liquid)	4R-38	MFWD 150	19,000	150	8	0.154	3.06	3.92	1.95 0.69	9.64	2.13 4.01	15.79
Fert Appl (Liquid)	6R-30	MFWD 150	19,800	150	8	0.130	2.59	3.32	1.72 0.58	8.23	1.88 3.40	13.51
Fert Appl (Liquid)	6R-38	MFWD 150	19,800	150	8	0.103	2.04	2.62	1.36 0.46	6.49	1.48 2.68	10.67
Fert Appl (Liquid)	8R-30	MFWD 150	20,100	150	8	0.098	1.94	2.49	1.31 0.43	6.19	1.43 2.55	10.17
Field Cult & Inc	12'	2WD 150	18,200	100	10	0.124	2.46	3.16	0.56 0.45	6.64	2.30 2.62	11.57
Field Cult & Inc	24'	MFWD 150	37,200	100	10	0.062	1.23	1.58	0.57 0.27	3.66	2.36 1.61	7.64
Field Cultivate	12'	2WD 150	12,900	100	10	0.124	1.90	3.16	0.40 0.45	5.91	1.63 2.62	10.17
Field Cultivate	24'	MFWD 150	31,800	100	10	0.062	0.95	1.58	0.49 0.27	3.30	2.01 1.61	6.93
Front Loader	.5 yd	2WD 75	6,160	100	10	0.120	1.83	1.52	0.44 0.16	3.96	0.84 0.93	5.74
Grain Drill	12'	2WD 130	28,200	150	8	0.157	3.82	3.45	1.66 0.57	9.52	3.06 3.35	15.93
Hay Baler	Lg Round	2WD 105	54,900	200	8	0.211	3.23	3.76	6.53 0.44	13.96	7.87 2.57	24.42
Hay Baler	Med Rnd	2WD 75	39,700	200	8	0.211	3.23	2.68	4.72 0.28	10.92	5.69 1.65	18.27
Hay Baler	Square	2WD 50	30,300	200	8	0.229	3.49	1.94	3.47 0.16	9.07	4.70 0.96	14.75
Hay Cut-Cond	9'	2WD 105	30,100	200	8	0.229	3.49	4.07	4.31 0.48	12.36	4.67 2.79	19.83
Hay Cut-Cond	12'	2WD 105	41,200	200	8	0.171	2.62	3.05	4.42 0.36	10.46	4.80 2.09	17.36
Hay Disc Mower	8'	2WD 75	12,700	200	8	0.257	3.93	3.27	2.04 0.34	9.60	2.22 2.01	13.84
Hay Disc Mower	10'	2WD 50	13,000	200	8	0.206	3.14	1.74	1.67 0.15	6.72	1.81 0.87	9.41
Hay Mover	1B Lift	2WD 50	770	200	10	0.300	4.58	2.54	0.05 0.21	7.39	0.13 1.26	8.79
Hay Rake	8.5'	2WD 50	7,092	200	8	0.202	3.08	1.71	0.71 0.14	5.66	0.97 0.85	7.49
Hay Rake-Double	17'	2WD 75	7,804	200	8	0.101	1.54	1.28	0.39 0.13	3.35	0.53 0.79	4.68
Hay Tedder	17'	2WD 105	8,854	200	8	0.101	1.54	1.79	0.44 0.21	4.00	0.60 1.23	5.84
Hay Trailer	20'	2WD 75	4,434	200	15	0.090	1.37	1.14	0.10 0.12	2.74	0.17 0.70	3.62
NT Grain Drill	12'	2WD 130	46,900	150	8	0.196	4.77	4.32	3.45 0.72	13.27	6.36 4.18	23.83
NT Plant & Pre Rigid	4R-38	2WD 130	34,800	150	8	0.153	3.74	3.38	2.00 0.56	9.69	3.69 3.27	16.67
NT Plant & Pre Rigid	6R-30	MFWD 150	43,600	150	8	0.130	3.16	3.30	2.12 0.58	9.18	3.92 3.38	16.48
NT Plant & Pre Rigid	6R-38	MFWD 150	42,700	150	8	0.102	2.50	2.61	1.64 0.45	7.21	3.03 2.66	12.91
NT Plant Rigid	4R-38	2WD 130	29,500	150	8	0.148	3.60	3.25	1.63 0.54	9.04	3.01 3.15	15.21
NT Plant Rigid	6R-30	MFWD 150	38,300	150	8	0.125	3.05	3.18	1.80 0.56	8.59	3.31 3.25	15.16
NT Plant Rigid	6R-38	MFWD 150	37,300	150	8	0.098	2.40	2.51	1.38 0.44	6.74	2.55 2.57	11.86
Plant & Pre Rigid	4R-38	2WD 130	30,800	150	8	0.153	3.74	3.38	1.77 0.56	9.46	3.27 3.27	16.01
Plant & Pre Rigid	6R-30	MFWD 150	37,500	150	8	0.126	3.07	3.20	1.77 0.56	8.62	3.27 3.27	15.17
Plant & Pre Rigid	6R-38	MFWD 150	36,600	150	8	0.102	2.50	2.61	1.41 0.45	6.98	2.59 2.66	12.24
Plant Rigid	4R-38	2WD 130	25,400	150	8	0.148	3.60	3.25	1.41 0.54	8.81	2.59 3.15	14.57
Plant Rigid	6R-30	MFWD 150	32,200	150	8	0.125	3.05	3.18	1.51 0.56	8.30	2.78 3.25	14.35
Plant Rigid	6R-38	MFWD 150	31,200	150	8	0.098	2.40	2.51	1.15 0.44	6.52	2.13 2.57	11.22
Rotary Mower	7'	MFWD 130	4,500	185	10	0.168	2.57	3.70	0.61 0.68	7.58	0.41 4.00	12.00
Rotary Mower	12'	2WD 150	14,100	185	10	0.098	1.49	2.49	1.12 0.35	5.47	0.76 2.07	8.30
Rotary Mower	15'	MFWD 150	21,800	185	10	0.078	1.19	1.99	1.38 0.35	4.93	0.94 2.04	7.91
Row Cond	13'	2WD 130	8,670	100	10	0.119	1.82	2.62	0.77 0.43	5.66	1.09 2.54	9.31
Row Cond	21'	2WD 150	14,200	100	10	0.078	1.19	1.99	0.27 0.28	3.75	1.13 1.65	6.55
Row Cond & Inc	13'	2WD 130	13,400	100	10	0.126	2.51	2.79	0.42 0.46	6.19	1.73 2.70	10.63
Row Cond & Inc	21'	2WD 150	19,500	100	10	0.078	1.55	1.99	0.38 0.28	4.21	1.56 1.65	7.43
Section Harrow	13'	2WD 105	2,845	200	10	0.119	1.82	2.12	0.11 0.25	4.31	0.17 1.45	5.94
Silage Harvester	2-Row	2WD 105	47,793	200	8	0.510	7.79	9.07	15.23 1.06	33.17	16.53 6.21	55.92
Silage Harvester 3-R	3-Row	2WD 105	66,600	200	8	0.336	5.14	5.98	14.01 0.78	25.93	15.20 4.56	45.70
Silage Wagon	10-Ton	2WD 75	11,838	200	15	0.510	7.79	6.47	1.20 0.68	16.16	2.59 3.99	22.75
Silage Wagon 12T	12-Ton	2WD 105	34,182	200	15	0.510	7.79	9.07	3.48 1.19	21.54	7.49 6.92	35.95
Spin Spreader	5 Ton	MFWD 150	14,500	100	8	0.042	1.02	1.06	0.34 0.18	2.62	0.66 1.09	4.38
Spray (Broadcast)	27'	MFWD 150	5,300	200	8	0.062	1.24	1.59	0.15 0.28	3.26	0.18 1.62	5.07
Spray (Spot)	27'	MFWD 150	5,300	200	8	0.062	1.24	1.59	0.15 0.28	3.26	0.18 1.62	5.07
Subsoiler	3 Shank	MFWD 150	6,500	100	15	0.020	0.31	0.51	0.04 0.09	0.96	0.10 0.53	1.60
Tailgate Seeder		2WD 50	1,315	100	8	0.200	3.05	1.69	0.32 0.14	5.22	0.35 0.84	6.42

Notes:

Labor: Includes labor from Power unit plus additional labor from the implement.

Total Direct: Does not include interest on operating capital.

Appendix Table 3. Operating inputs: estimated prices, Mississippi, 2023

ITEM NAME	UNIT	PRICE	ITEM NAME	UNIT	PRICE
dollars			dollars		
ADJUVANTS			Gramoxone Inteon	oz	0.17
Crop Oil (veg)	pt	2.90	Gramoxone SL 2.0	oz	0.19
Surfactant	pt	3.30	Grazon P+D	pt	4.50
CUSTOM FERT			GrazonNext	pt	6.00
App Fert by Air	cwt	7.50	Metribuzin 75	lb	14.73
App Fert by Air(Min)	appl	7.50	Pendimethalin	pt	5.69
Custom Spread(Truck)	appl	7.50	Poast	pt	14.56
CUSTOM LIME			Poast Plus	pt	9.49
Lime (Spread)	ton	59.00	Pursuit	oz	3.06
CUSTOM PLANT			Remedy Ultra	pt	11.72
Custom Spread + Seed	appl	5.00	Roundup Original	pt	4.12
Custom Sprig	acre	100.00	Roundup Power Max	pt	9.10
Plant by Air	cwt	7.50	Roundup Power Max	oz	0.57
CUSTOM SPRAY			Ultra Blazer	pt	7.50
App by Air (10 gal)	appl	9.30	Weedmaster	pt	5.53
App by Air (2 gal)	appl	3.00	INSECTICIDE		
App by Air (3 gal)	appl	5.60	Baythroid XL	oz	1.04
App by Air (5 gal)	appl	7.00	Blackhawk 36 WG	oz	9.06
FERTILIZER			Coragen	oz	8.40
Boron Plus	gal	34.45	Intrepid 2F	oz	2.11
Fert 10-34-0	cwt	31.05	Lannate LV	pt	9.30
Fert 13-13-13	cwt	30.00	Malathion 57 EC	pt	6.43
Fert 33-0-0-12S	cwt	31.40	Mustang Max	oz	0.97
Molybdenum	lb	15.00	Prevathon	oz	0.64
Nitrogen	cwt	34.22	Sevin XLR Plus	qt	16.01
Phosphate (46% P2O5)	cwt	51.80	OTHER		
Potash (60% K2O)	cwt	42.25	Twine	bun	28.50
UAN (32% N)	cwt	31.38	SEED/PLANTS		
UAN + Sulfur (28%)	cwt	31.38	Alfalfa Seed	lb	4.46
Urea, Solid (46% N)	cwt	39.88	Bahiagrass Seed	lb	3.53
HAUL			Brassica Seed	lb	1.55
Hay Haul (Conv)	ton	25.00	Common Bermuda Seed	lb	5.33
HERBICIDE			Corn Seed RR2	thous	3.25
2,4-D amine	pt	2.64	Crabgrass seed	lb	6.63
2,4-D ester	pt	2.41	Crimson Clover Seed	lb	1.80
2,4-DB	pt	5.08	Dallisgrass Seed	lb	10.95
AAtrex 4L	pt	1.90	Fescue Seed	lb	3.00
Accent SP 75%	oz	31.94	Forage Sorghum Seed	lb	0.86
Atrazine 4L	pt	1.67	MaxQ Fescue Seed	lb	5.12
Balan	lb	1.04	Millet Seed	lb	1.01
Banvel	pt	4.81	Red Clover Seed	lb	2.35
Basagran	pt	5.43	Ryegrass Seed	lb	1.13
Bicep 1l Magnum	qt	11.80	Small Grains Seed	lb	0.42
Buctril 4EC	pt	4.28	SS, PM, FS Seed	lb	1.36
Clethodim	oz	0.50	SS, PM, Seed	lb	1.36
Dicamba	pt	6.35	Wheat Seed	lb	0.28
Diuron 4L	pt	3.50	White Clover Seed	lb	4.20
Dual II Magnum	pt	11.15	SERVICE FEE		
Dual Magnum	pt	10.02	Soil Testing	acre	10.00
Glyphosate 3lbs a.e.	pt	1.81			

Appendix Table 4. Estimated fuel prices
and interest rates, Mississippi, 2023

ITEM NAME	UNIT	PRICE
		dollars
FUEL TYPES		
Diesel Fuel	gal	3.29
Gasoline	gal	3.38
INTEREST RATES		
Short-term	%	4.00
Intermediate-term	%	4.50

Appendix Table 5. Labor names, units and wage rates,
Mississippi, 2023.

Item name	Unit	Wage Rate
OPERATOR LABOR	hour	15.27
HAND LABOR	hour	9.06

Literature Cited

1. Agricultural Engineers Yearbook of Standards. American Society of Agricultural Engineers, St. Joseph, Michigan.
2. Boehlje, M.D. and V.R. Eidman. *Farm Management*. New York: John Wiley and Sons, 1984.
3. Bolton, Bill, J.B. Penn, Fred T. Cooke Jr., and Arthur M. Heagler. "Days Suitable for Fieldwork, Mississippi River Delta Cotton Area." D.A.E. Research Report No. 384, Louisiana State University, November 1968."
4. Budgets for Major Farm Enterprises in the Mississippi River Delta of Arkansas, Louisiana, and Mississippi." D.A.E. Circular No. 281, Department of Agricultural Economics and Agribusiness, Agricultural Experiment Station, Louisiana State University, June 1961
5. Caillavet, DeWitt F. "An Economic Assessment of Production Alternatives Resulting From Changes in the Machinery Complement of Representative Farms in the Delta Area of Mississippi." Master of Science Thesis, Department of Agricultural Economics, Mississippi State University, May 1984.
6. Cooke, Fred T. Jr., J.M. Anderson, and Arthur M. Heagler. "Crop Budgets and Planning Data for Major Farm Enterprises in the Yazoo-Mississippi Delta." Mississippi Agricultural and Forestry Experiment Station Bulletin 794, July 1972.
7. Cooke, Fred T. Jr., J.M. Anderson, D.W. Parvin Jr., A.M. Heagler, Kenneth Paxton, Shelby Holders Jr., and James G. Hamill. "Crop Budgets and Planning Data for Major Farm Enterprises in the Mississippi-Louisiana Delta, 1975." Mississippi Agricultural and Forestry Experiment Station Bulletin 834, May 1975.
8. "Corn, Grain Sorghum & Wheat 2022 Planning Budgets." Budget Report No. 2021-03, Department of Agricultural Economics, Mississippi State University, November 2021.
9. "Costs of Producing Selected Crops in the U.S., 1974." Senate Committee Project No. 63-092, Committee on Agriculture and Forestry, U.S. Senate, January 8, 1976.
10. "Cotton 2022 Planning Budgets." Budget Report No. 2021-01, Department of Agricultural Economics, Mississippi State University, November 2021.
11. Cox, Laura Rebecca. "Overhead Labor Cost in the Delta Area of Mississippi." Master of Science Thesis, Department of Agricultural Economics, Mississippi State University, October 1982.
12. "Forage 2022 Planning Budgets." Budget Report No. 2021-08, Department of Agricultural Economics, Mississippi State University, April 2021.
13. Laughlin, David H. and Robert K. Mehrle. "An Economic Evaluation: Straight Versus Contour Levee Rice Production Practices in Mississippi." Mississippi Agricultural and Forestry Experiment Station Bulletin 1063. December 1996.
14. Laughlin, David H. and Stan Spurlock. "User's Guide for the Mississippi State Budget Generator Version 6.0 for Windows." AEC Staff Report No. 2003-01, Department of Agricultural Economics, Mississippi State University, March 2003.
15. "Peanuts 2022 Planning Budgets." Budget Report No. 2021-07, Department of Agricultural Economics, Mississippi State University, November 2021.
16. "Rice 2022 Planning Budgets." Budget Report No. 2021-04, Department of Agricultural Economics, Mississippi State University, November 2021.
17. "Soybeans 2022 Planning Budgets." Budget Report No. 2021-02, Department of Agricultural Economics, Mississippi State University, November 2021.
18. "Vegetables 2018 Planning Budgets." Budget Report No. 2017-09, Department of Agricultural Economics, Mississippi State University December 2017.



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