

Tennessee Forage Budgets



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This publication contains short-term planning budgets for the most prevalent forage enterprises in Tennessee. Guideline tobacco, livestock and field crop budgets are published in separate publications.

Fertilizer Recommendations

The fertilizer recommendations in the forage budgets are generally for soils that represent a medium soil test. Farmers should have their soils tested to get maximum return from money spent for fertilizer. As forage programs are planned, fertilizer applications must be adjusted to soil test recommendations.

Trade Names and Pesticide Caution

Use of trade or brand names in this publication is for clarity and information; it does not imply approval of the product to the exclusion of others which may be of similar, suitable composition, nor does it guarantee or warrant the product.

Pesticides recommended in the publication were registered for the prescribed uses when these budgets were printed. Pesticide registrations are continuously being reviewed. Should registration of a recommended pesticide be canceled, it will no longer be recommended by the University of Tennessee.

To protect people and the environment, pesticides should be used safely. This is everyone's responsibility, especially the user. Read and follow label directions carefully before you buy, mix, apply, store or dispose of a pesticide. According to laws regulating pesticides, they must be used only as directed by the label.

Applicability and Precision

These budgets are intended as guides only. Adjustments can and should be made when needed to represent specific farm situations. The computer program used to construct these budgets internally calculates totals to the 7th decimal place. Totals for a column may not equal the total of rounded numbers.

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Tennessee Forage Budgets

Forage producers in Tennessee can produce a wide range of forage crops. Annual crops may be grown for three to six months as winter or summer forages. Perennial crops may be planted that produce forages for five years or longer. Many forage crops can be grazed, cut for hay or chopped for silage. This publication presents estimated forage crop establishment and production costs for many of these options, assuming above-average levels of management. These budgets should be viewed as examples of feasible forage-crop production methods. They are not necessarily the best ways of growing forage, nor are they to be considered as recommendations.

Methods and Assumptions

Each forage budget includes variable expenses, fixed expenses and labor expenses. Perennial forage crop budgets also include establishment costs. Fixed expenses in the budgets account for annual depreciation and interest costs associated with machinery, equipment and fences. The costs of owning or renting land are not included.

Most forages are produced on the same farms where they are fed to livestock. This causes very little market information to be available for forage crops, making it difficult to obtain typical or average prices for forages other than grass and alfalfa hay. Yield data are also limited, because many forage crops are not measured or weighed before they are fed. As a result, prices and yields are not shown in the forage crop budgets. However, break-even prices are calculated for silage and hay crops at yield levels representative of crops in Tennessee. Break-even prices represent cost-based estimates of forage-crop values.

Establishment Costs and Methods

All the costs of establishing annual forage crops are included in the annual forage crop budgets, because they produce forage for less than one year. Establishment costs for perennial crops must be spread over their productive lives, so that each year of production “repays” a portion of the costs to establish them. This is accomplished by constructing forage crop establishment budgets, then *amortizing* establishment costs for perennial crops. The total establishment cost for each perennial forage crop is treated as a loan that must be repaid, in equal annual payments with interest, during the productive life of the crop. The interest charge represents the cost of borrowing money to finance the establishment cost, if the funds are obtained from a lender. If an owner provides the funds to pay for establishment of a perennial crop, then the interest charge represents the earnings given up by not investing the money in some other activity, such as feeding livestock or purchasing shares in a mutual fund. Amortized establishment costs are included as fixed expenses in perennial forage crop budgets.

Several methods can be used to prepare seedbeds and establish forage crops. The best method to use is influenced by many factors, including soil conservation requirements, costs, soil types, crop rotations and equipment availability. These forage budgets present cost estimates for two establishment methods – traditional and no-till.

Traditional establishment is assumed to include plowing, diskng and/or cultimulching before planting. *No-till establishment* eliminates all tillage operations. Seed is planted using sod planters or no-till drills. No-till establishment is usually performed by applying a burn-down

contact herbicide to stubble or a standing prior crop, then planting into the remaining crop residue. Adjustments should be made to the budgets to reflect establishment methods that differ from those used in the budgets. Each perennial forage production budget includes the amortized cost of establishing the crop using no-till planting. To determine production costs using traditional tillage, substitute the amortized cost from the traditional establishment budget in the forage production budget being analyzed.

Pasture Budgets

Two types of pasture budgets are included. Budgets for forage crops that are managed intensively using rotational grazing are referred to as *intensive grazing* budgets. *Continuous grazing* budgets represent the costs of pastures at lower levels of labor, management and production.

In the past, most livestock producers have managed continuous grazing systems, using primarily perennial grass or grass and clover forage crops. Many of the pastures included in continuous grazing systems have been in production for 20 years or more. Establishment and fencing costs are assumed to have been fully recovered for these pastures, so these costs are not included in the continuous grazing budgets. Thus, budgets for continuous grazing include only the costs to maintain perennial forage stands at low-to-moderate levels of production, plus minimal costs for annual fence repairs and maintenance.

For intensive grazing budgets, forage is assumed to be grown in fields sub-divided into smaller grazing paddocks. Following a short period of intensive grazing, each paddock will have a period of rest for forage regrowth. Pastures are grazed when the forage is at a high-quality stage of growth, resulting in increased efficiency in forage production and utilization.

Fence costs vary depending on the materials used, field size and paddock arrangement. In these budgets, fencing cost for intensively grazed crops is estimated based on a 10-acre field, with a high-tensile perimeter fence and polytape used for divider fence. Both the perimeter and divider fence are electrified. A 20-year life for the perimeter fence and a five-year life for the divider fence are assumed. Annual fixed costs for the fence are \$20.29 per acre, which includes \$12.50/acre in depreciation and interest charges for perimeter fences, and \$7.79/acre in depreciation and interest expenses for temporary divider fences. Annual fence repair costs are \$5.56/acre for perimeter fences and \$1.30/acre for temporary divider fences.

Hay and Silage Budgets

Large, 1,000 lb. round bales are used in harvesting all hay crops except alfalfa and bermudagrass, which are harvested as small, rectangular bales weighing about 50 lbs. Costs of removing hay from the field are included as stacking or hauling expenses. The budgets do not estimate the costs of storing or feeding hay.

The raw product for silage comes from the field as green chop. For finished silage, the green chop must be hauled from the field and blown into a silo, dumped in a trench or bunker and packed, or packed into a bag. It must be allowed to go through a fermentation period before reaching proper feeding condition. The silage budgets show expenditures for chopping, hauling and then blowing green chop into upright silos. Again, the budgets do not include storage or feeding costs for silage.

Machinery

All machinery and equipment used in the budgets is listed in the table on page 4. List prices were obtained from manufacturers during August 2005. Machinery ownership and operating costs are calculated following procedures developed in “Machinery Cost Calculation Methods,” AE&RD No. 13, 1998. This publication is available from the authors, or can be obtained online at <http://economics.ag.utk.edu>.

Depreciation and interest costs are estimated assuming all machinery and equipment is six years old. Interest expenses are calculated using an 8 percent interest rate. Fuel costs are based on a diesel price of \$2.10/gallon. All machinery costs are estimated on an hourly basis, then allocated to each budget according to the hours of use of each piece of machinery used in the budget.

Two tables are included with each budget. The first table summarizes the approximate month in which every cultural operation for the forage crop is performed. It also shows the machinery used in each operation, and the estimated time it takes to perform the operations based on speed of operation, width of machinery and field efficiency. Labor hours for operations assume that every hour of machinery operation requires 1.25 hours of labor. This labor hour adjustment accounts for time spent locating, hooking up, adjusting and transporting machinery. Labor cost is \$8.50 per hour, including wages, taxes and payroll overhead costs. This cost represents either a cash cost for hired labor or a non-cash opportunity cost for labor provided by the owner or farm family.

The second table accompanying each budget shows estimated costs per acre for each machine used in the budget. These costs are calculated using the costs per hour reported in the machinery table (page 4) multiplied by the hours of machinery use shown in the estimated machinery and labor requirements table. Variable costs, fixed costs and total costs are shown for each machine and for the entire forage budget on a per-acre basis. Note that labor expense is not included in these machinery costs.

Machinery and Equipment Table

Description	List Price	Annual Hours	Year Manufactured	Age	Speed	Width	Efficiency Factor	Variable Cost \$/hour	Fixed Cost \$/hour	Total Cost \$/hour
Bale Wagon, Pull Type	\$ 15,000	100	2001	6	7.0	9.00	75	\$ 3.26	\$ 11.01	\$ 14.26
Baler, Round, 5 x 4	\$ 20,300	125	2001	6	3.5	9.00	65	\$ 13.31	\$ 9.53	\$ 22.83
Baler, Square	\$ 16,600	100	2001	6	3.5	9.00	75	\$ 4.87	\$ 9.83	\$ 14.70
Boom Sprayer, 20'	\$ 3,000	100	2001	6	6.5	30.00	65	\$ 0.74	\$ 2.18	\$ 2.92
Broadcast Spreader	\$ 800	60	2001	6	7.0	15.00	70	\$ 0.49	\$ 1.01	\$ 1.51
Chisel Plow, 9'	\$ 3,000	100	2001	6	5.0	9.00	85	\$ 0.99	\$ 1.39	\$ 2.38
Corn Header, 2-row	\$ 7,000	175	2001	6	2.5	5.00	60	\$ 1.81	\$ 3.22	\$ 5.04
Corn Planter, 4-row	\$ 14,000	80	2001	6	4.0	12.66	65	\$ 4.58	\$ 11.33	\$ 15.92
Cultimulcher, 12'	\$ 9,000	100	2001	6	5.0	12.00	80	\$ 2.97	\$ 4.40	\$ 7.37
Cultipacker-Seeder, 10'	\$ 4,000	100	2001	6	5.0	8.33	70	\$ 1.67	\$ 2.64	\$ 4.31
Disk, 12'	\$ 8,200	100	2001	6	5.0	12.00	80	\$ 1.86	\$ 5.37	\$ 7.23
Forage Blower	\$ 3,000	100	2001	6	6.0	7.00	70	\$ 0.84	\$ 2.17	\$ 3.01
Forage Chopper	\$ 20,800	175	2001	6	3.0	7.00	70	\$ 5.39	\$ 6.03	\$ 11.42
Forage Wagon #1	\$ 12,500	100	2001	6	6.0	7.00	70	\$ 2.71	\$ 9.08	\$ 11.79
Forage Wagon #2	\$ 12,500	100	2001	6	6.0	7.00	70	\$ 2.71	\$ 9.08	\$ 11.79
Front-End Loader/Spear	\$ 5,700	125	2001	6	3.5	9.00	65	\$ 1.32	\$ 3.24	\$ 4.57
Grain Drill, 10'	\$ 4,000	75	2001	6	5.0	14.00	70	\$ 1.22	\$ 3.61	\$ 4.83
Harrow, 10'	\$ 1,200	100	2001	6	7.0	10.00	85	\$ 0.38	\$ 0.77	\$ 1.15
Mower-Conditioner, 9'	\$ 20,100	125	2001	6	4.0	7.00	80	\$ 5.11	\$ 7.62	\$ 12.73
No-Till Corn Planter, 4-row	\$ 10,000	80	2001	6	4.0	12.00	65	\$ 3.27	\$ 8.18	\$ 11.45
No-Till Drill, 10'	\$ 21,000	120	2001	6	3.0	9.00	65	\$ 10.74	\$ 11.28	\$ 22.02
No-Till Drill, Rental	\$ 120	2001	6	3.0	9.00	65	\$ 0.00	\$ 0.24	\$ 0.24	\$ 0.24
Plow, 4-Bottom	\$ 3,000	100	2001	6	3.5	4.67	85	\$ 1.11	\$ 1.48	\$ 2.59
Rake, 18'	\$ 3,200	125	2001	6	6.0	9.00	80	\$ 0.70	\$ 1.41	\$ 2.11
Rotary Mower, 10'	\$ 6,000	100	2001	6	4.0	10.00	80	\$ 3.43	\$ 2.95	\$ 6.38
Tedder, 10'	\$ 2,400	100	2001	6	6.0	17.00	80	\$ 0.53	\$ 1.29	\$ 1.82
Tractor, 100 hp	\$ 61,000	666	2001	6				\$ 14.27	\$ 6.22	\$ 20.50
Tractor, 60 hp	\$ 29,000	666	2001	6				\$ 8.10	\$ 2.43	\$ 10.53
Tractor, 70 hp	\$ 35,000	666	2001	6				\$ 9.53	\$ 2.92	\$ 12.45
Windrow Header	\$ 3,500	100	2001	6	2.5	9.00	60	\$ 0.65	\$ 1.98	\$ 2.63
Manure Spreader	\$ 3,400	100	2001	6	4.0	10.00	90	\$ 0.05	\$ 2.53	\$ 2.58

Alfalfa, Traditional Establishment
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm	
Variable Expenses							
Alfalfa Seed ¹	Pre-inoculated	lb	20.00	\$ 3.09	\$ 61.80	_____	
Fertilizer	N	lb	15.00	\$ 0.48	\$ 7.20	_____	
	P2O5	lb	60.00	\$ 0.34	\$ 20.40	_____	
	K2O	lb	190.00	\$ 0.23	\$ 43.70	_____	
	Boron	lb	2.00	\$ 2.38	\$ 4.76	_____	
Lime	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____	
Weed Control	Custom Application	ton	2.00	\$ 21.00	\$ 42.00	_____	
Post-Emerge	2,4-DB	pt	4.00	\$ 4.26	\$ 17.04	_____	
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____	
	Poast Plus ²	pt	1.50	\$ 6.50	\$ 9.75	_____	
	Crop Oil	pt	2.00	\$ 1.73	\$ 3.46	_____	
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____	
Twine		bale	80.00	\$ 0.04	\$ 3.31	_____	
Machinery							
Fuel		acre	1.00	\$ 23.28	\$ 23.28	_____	
Oil & Filter		acre	1.00	\$ 3.49	\$ 3.49	_____	
Repairs & Maintenance		acre	1.00	\$ 19.07	\$ 19.07	_____	
Interest on Operating Capital	6 Months			acre \$ 274.25	8.0%	\$ 10.97	_____
					Total Variable Expenses	\$ 285.22	_____
Fixed Expenses							
Machinery							
Depreciation		acre	1.00	\$ 14.34	\$ 14.34	_____	
Interest		acre	1.00	\$ 17.95	\$ 17.95	_____	
Housing & Insurance		acre	1.00	\$ 1.79	\$ 1.79	_____	
					Total Fixed Expenses	\$ 34.08	_____
Labor Expenses							
Labor ³		hour	3.98	\$ 8.50	\$ 33.79	_____	
					Total Establishment Expenses	\$ 353.10	_____
Credit for hay ⁴		ton	2.00	\$ 90.00	\$ 180.00	_____	
					Net Establishment Expenses	\$ 173.10	_____
Prorated Share		year	4.00	8.0%	\$ 52.26	_____	

Footnotes:

¹Seed variety selection should be based on harvest method (grazing, hay or haylage).

²Poast Plus is included for control of crabgrass, which is a common problem. If johnsongrass is a problem, Select may be used.

³Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

⁴A partial crop is harvested during the establishment period. The value of this crop is used to partially offset establishment costs. The balance, plus interest, is recovered over the stand-life of 4 years.

**Alfalfa, Traditional Establishment
Estimated Machinery and Labor Requirements per Acre**

Month	Operation	Power Unit	Implement	Hours per Acre
				Machine Labor
Mar	Chisel	Tractor, 100 hp	Chisel Plow, 9'	0.22
Mar	Disk, 2X	Tractor, 100 hp	Disk, 12'	0.34
Mar	Fertilize & Lime	Custom	Custom	---
Apr	Disk & Cultimulch	Tractor, 100 hp	Disk, 12'	0.17
Apr	Plant	Tractor, 100 hp	Cultimulcher, 12'	0.21
May	Post-Emerge (2-4, DB)	Custom	Cultipacker-Seeder, 10'	0.35
May	Post-Emerge (Poast Plus)	Custom	Custom	---
Jul	Mow	Tractor, 70 hp	Mower-Conditioner, 9'	0.37
Jul	Rake, 18'	Tractor, 70 hp	Rake, 18'	0.19
Jul	Bale	Tractor, 70 hp	Baler, Square	0.35
Jul	Stack & Move	Tractor, 70 hp	Bale Wagon, Pull Type	0.17
Aug	Mow	Tractor, 70 hp	Mower-Conditioner, 9'	0.22
Aug	Rake, 18'	Tractor, 70 hp	Rake, 18'	0.37
Aug	Bale	Tractor, 70 hp	Baler, Square	0.19
Aug	Stack & Move	Tractor, 70 hp	Bale Wagon, Pull Type	0.35
				Total 3.98

Estimated Machinery Expenses per Acre

Machine	Variable Cost			Fixed Cost			Total Fixed Costs	
	Hours per Acre	Fuel	Oil & Filter	Total	Variable Costs	Depreciation		
Tractor, 100 hp	1.01	9.33	1.40	3.75	14.48	2.72	3.41	
Tractor, 70 hp	2.17	13.95	2.09	4.59	20.63	2.78	3.31	
Chisel Plow, 9'	0.22	0.00	0.00	0.21	0.21	0.09	0.19	
Disk, 12'	0.52	0.00	0.00	0.96	0.96	1.25	1.31	
Cultimulcher, 12'	0.17	0.00	0.00	0.51	0.51	0.21	0.47	
Cultipacker-Seeder, 10'	0.28	0.00	0.00	0.47	0.47	0.26	0.43	
Mower-Conditioner, 9'	0.74	0.00	0.00	3.76	3.76	2.03	3.31	
Rake, 18'	0.38	0.00	0.00	0.27	0.27	0.22	0.25	
Baler, Square	0.70	0.00	0.00	3.40	3.40	3.08	3.38	
Bale Wagon, Pull Type	0.35	0.00	0.00	1.14	1.14	1.70	1.88	
Total	\$ 23.28	\$ 3.49	\$ 19.07	\$ 45.83	\$ 14.34	\$ 17.95	\$ 1.79	
Total Machinery Cost							\$ 79.91	

Alfalfa, No-Till Establishment
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Alfalfa Seed ¹	Pre-inoculated	lb	20.00	\$ 3.09	\$ 61.80	_____
Fertilizer	N	lb	15.00	\$ 0.48	\$ 7.20	_____
	P2O5	lb	60.00	\$ 0.34	\$ 20.40	_____
	K2O	lb	190.00	\$ 0.23	\$ 43.70	_____
Lime	Boron	lb	2.00	\$ 2.38	\$ 4.76	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Weed Control	Custom Application	ton	2.00	\$ 21.00	\$ 42.00	_____
Burndown	Gramoxone Max	pt	1.50	\$ 4.91	\$ 7.37	_____
	Surfactant	pt	0.50	\$ 1.63	\$ 0.82	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Post-Emerge	2,4-DB	pt	4.00	\$ 4.26	\$ 17.04	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
	Poast Plus ²	pt	1.50	\$ 6.50	\$ 9.75	_____
	Crop Oil	pt	2.00	\$ 1.73	\$ 3.46	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Twine		bale	80.00	\$ 0.04	\$ 3.31	_____
Machinery						
Fuel		acre	1.00	\$ 15.85	\$ 15.85	_____
Oil & Filter		acre	1.00	\$ 2.55	\$ 2.55	_____
Repairs & Maintenance		acre	1.00	\$ 19.21	\$ 19.21	_____
Interest on Operating Capital	6 Months	acre	\$ 238.29	8.0%	\$ 9.53	_____
				Total Variable Expenses	\$ 288.73	_____
Fixed Expenses						
Machinery						
Depreciation		acre	1.00	\$ 12.33	\$ 12.33	_____
Interest		acre	1.00	\$ 16.00	\$ 16.00	_____
Housing & Insurance		acre	1.00	\$ 1.55	\$ 1.55	_____
				Total Fixed Expenses	\$ 29.87	_____
Labor Expenses						
Labor ³		hour	3.30	\$ 8.50	\$ 28.01	_____
				Total Establishment Expenses	\$ 346.62	_____
Credit for hay ⁴		ton	2.00	\$ 90.00	\$ 180.00	_____
				Net Establishment Expenses	\$ 166.62	_____
Prorated Share		year	4.00	8.0%	\$ 50.31	_____

Footnotes:

¹Seed variety selection should be based on harvest method (grazing, hay or haylage).

²Poast Plus is included for control of crabgrass, which is a common problem. If johnsongrass is a problem, Select may be used.

³Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

⁴A partial crop is harvested during the establishment period. The value of this crop is used to partially offset establishment costs. The balance, plus interest, is recovered over the stand-life of 4 years.

**Alfalfa, No-Till Establishment
Estimated Machinery and Labor Requirements per Acre**

Month	Operation	Power Unit	Implement	Hours per Acre Machine Labor
Mar	Fertilize & Lime Burndown (Gramoxone Max)	Custom	Custom	---
Apr	Plant	Custom	No-Till Drill, 10'	0.47 0.59
Apr	Post-Emerge (2-4,DB)	Tractor, 70 hp	Custom	---
May	Post-Emerge (Poast Plus)	Custom	Custom	---
May	Mow	Tractor, 70 hp	Mower-Conditioner, 9'	0.37 0.46
Jul	Rake, 18'	Tractor, 70 hp	Rake, 18'	0.19 0.24
Jul	Bale	Tractor, 70 hp	Baler, Square	0.35 0.44
Jul	Stack & Move	Tractor, 70 hp	Bale Wagon, Pull Type	0.17 0.22
Aug	Mow	Tractor, 70 hp	Mower-Conditioner, 9'	0.37 0.46
Aug	Rake, 18'	Tractor, 70 hp	Rake, 18'	0.19 0.24
Aug	Bale	Tractor, 70 hp	Baler, Square	0.35 0.44
Aug	Stack & Move	Tractor, 70 hp	Bale Wagon, Pull Type	0.17 0.22
			Total	3.30

Machine	Estimated Machinery Expenses per Acre					Total Fixed Costs	
	Estimated Machinery Expenses per Acre			Variable Costs	Total		
	Hours per Acre	Fuel	Oil & Filter				
Tractor, 70 hp	2.64	15.85	2.55	5.59	23.99	3.38 4.02 0.30 7.71	
No-Till Drill, 10'	0.47	0.00	0.00	5.05	5.05	1.91 3.15 0.24 5.30	
Mower-Conditioner, 9'	0.74	0.00	0.00	3.76	3.76	2.03 3.31 0.27 5.62	
Rake, 18'	0.38	0.00	0.00	0.27	0.27	0.22 0.25 0.07 0.54	
Baler, Square	0.70	0.00	0.00	3.40	3.40	3.08 3.38 0.40 6.87	
Bale Wagon, Pull Type	0.35	0.00	0.00	1.14	1.14	1.70 1.88 0.26 3.84	
Total		\$ 15.85	\$ 2.55	\$ 19.21	\$ 37.60	\$ 12.33 \$ 16.00 \$ 1.55 \$ 29.87	
Total Machinery Cost						\$ 67.48	

Alfalfa, Hay
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses¹						
Fertilizer	P2O5	lb	60.00	\$ 0.34	\$ 20.40	_____
	K2O	lb	190.00	\$ 0.23	\$ 43.70	_____
	Boron	lb	2.00	\$ 2.38	\$ 4.76	_____
Lime ²	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Insect Control ³	Custom Application	ton	0.67	\$ 21.00	\$ 14.07	_____
Weed Control	Furadan 4F	pt	2.00	\$ 9.23	\$ 18.46	_____
Post-Emerge	Poast Plus ⁴	pt	1.50	\$ 6.50	\$ 9.75	_____
	Crop Oil	pt	2.00	\$ 1.73	\$ 3.46	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Dormant Spray	2,4-DB ⁵	pt	1.00	\$ 4.26	\$ 4.26	_____
	Custom Application	acre	0.25	\$ 5.00	\$ 1.25	_____
	Gramoxone Max	pt	1.00	\$ 4.91	\$ 4.91	_____
	Surfactant	pt	0.50	\$ 1.63	\$ 0.82	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Twine		bale	140.00	\$ 0.04	\$ 5.79	_____
Machinery						
Fuel		acre	1.00	\$ 28.96	\$ 28.96	_____
Oil & Filter		acre	1.00	\$ 4.34	\$ 4.34	_____
Repairs & Maintenance		acre	1.00	\$ 26.78	\$ 26.78	_____
Interest on Operating Capital	6 months	acre	\$ 206.72	8.0%	\$ 8.27	_____
					Total Variable Expenses	\$ 214.98 _____
Fixed Expenses						
Establishment Cost	Prorated over 4 years	acre	1.00	\$ 50.31	\$ 50.31	_____
Machinery						
Depreciation		acre	1.00	\$ 19.94	\$ 19.94	_____
Interest		acre	1.00	\$ 24.66	\$ 24.66	_____
Housing & Insurance		acre	1.00	\$ 2.21	\$ 2.21	_____
					Total Fixed Expenses	\$ 97.11 _____
Labor Expenses						
Labor ⁶		hour	5.62	\$ 8.50	\$ 47.80	_____
					Total Budgeted Expenses	\$ 359.89 _____

Footnotes:

¹A hay preservative may be needed, please include the expense.

²Lime is applied at the rate of 2 tons every 3 years.

³Other materials may be used at slightly less cost, but do not appear as effective.

⁴Poast Plus is included for control of crabgrass, which is a common problem. If johnsongrass is a problem, Select may be used.

⁵Applied once every four years.

⁶Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

**Alfalfa, Hay
Estimated Machinery and Labor Requirements per Acre**

Month	Operation	Power Unit	Implement	Machine Labor	Hours per Acre
Feb	Fertilize	Custom	Custom	---	---
Mar	Insect Control	Tractor, 70 hp	Boom Sprayer, 20'	0.07	0.08
May	Post-Emerge (2-4,DB)	Custom	Custom	---	---
May	Post-Emerge (Roast Plus)	Custom	Mower-Conditioner, 9'	0.37	0.46
May	Mow	Tractor, 70 hp	Tedder, 10'	0.10	0.13
May	Tedder, 10'	Tractor, 70 hp	Rake, 18'	0.19	0.24
May	Rake, 18'	Tractor, 70 hp	Baler, Square	0.35	0.44
May	Bale	Tractor, 70 hp	Bale Wagon, Pull Type	0.17	0.22
May	Stack & Move	Tractor, 70 hp	Mower-Conditioner, 9'	0.37	0.46
Jun	Mow	Tractor, 70 hp	Rake, 18'	0.19	0.24
Jun	Rake, 18'	Tractor, 70 hp	Baler, Square	0.35	0.44
Jun	Bale	Tractor, 70 hp	Bale Wagon, Pull Type	0.17	0.22
Jun	Stack & Move	Tractor, 70 hp	Mower-Conditioner, 9'	0.37	0.46
Jul	Mow	Tractor, 70 hp	Rake, 18'	0.19	0.24
Jul	Rake, 18'	Tractor, 70 hp	Baler, Square	0.35	0.44
Jul	Bale	Tractor, 70 hp	Bale Wagon, Pull Type	0.17	0.22
Jul	Stack & Move	Tractor, 70 hp	Mower-Conditioner, 9'	0.37	0.46
Sep	Mow	Tractor, 70 hp	Rake, 18'	0.19	0.24
Sep	Rake, 18'	Tractor, 70 hp	Baler, Square	0.35	0.44
Sep	Bale	Tractor, 70 hp	Bale Wagon, Pull Type	0.17	0.22
Sep	Stack & Move	Tractor, 70 hp	Custom	---	---
Oct	Lime	Custom	Custom	---	---
Dec	Spray (Gramoxone Max)	Custom	Custom	---	---
Total					5.62

Machine	Estimated Machinery Expenses per Acre						Total Fixed Costs
	Hours per Acre	Variable Cost			Fixed Cost		
		Fuel	Oil & Filter	Repairs	Variable Costs	Depreciation	Interest
Tractor, 70 hp	4.50	28.96	4.34	9.54	42.85	5.77	6.86
Boom Sprayer, 20'	0.07	0.00	0.00	0.05	0.05	0.06	0.07
Mower-Conditioner, 9'	1.47	0.00	0.00	7.53	7.53	4.07	6.62
Tedder, 10'	0.10	0.00	0.00	0.05	0.05	0.04	0.07
Rake, 18'	0.76	0.00	0.00	0.54	0.54	0.44	0.50
Baler, Square	1.40	0.00	0.00	6.80	6.80	6.17	6.76
Bale Wagon, Pull Type	0.70	0.00	0.00	2.27	2.27	3.39	3.77
Total Machinery Cost		\$ 28.96	\$ 4.34	\$ 26.78	\$ 60.09	\$ 19.94	\$ 24.66
							\$ 106.89

Break-even Analysis

	Yield/Acre	Break-even Price/Ton
Below-Average Yield	2.5 tons	\$ 85.99
Average Yield	3.5 tons	\$ 61.42
Above-Average Yield	4.5 tons	\$ 47.77
Below-Average Yield	2.5 tons	\$ 143.96
Average Yield	3.5 tons	\$ 102.83
Above-Average Yield	4.5 tons	\$ 79.98

**Alfalfa, Intensive Grazing
Estimated Expenses per Acre**

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Fertilizer	P2O5	lb	60.00	\$ 0.34	\$ 20.40	_____
	K2O	lb	190.00	\$ 0.23	\$ 43.70	_____
	Boron	lb	2.00	\$ 2.38	\$ 4.76	_____
Lime ¹	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Insect Control ²	Custom Application	ton	0.67	\$ 21.00	\$ 14.07	_____
Weed Control	Furadan 4F	pt	2.00	\$ 9.23	\$ 18.46	_____
Post-Emerge	Poast Plus ³	pt	1.50	\$ 2.04	\$ 3.06	_____
	Crop Oil	pt	2.00	\$ 1.73	\$ 3.46	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Dormant Spray	2,4-DB ⁴	pt	1.00	\$ 2.05	\$ 2.05	_____
	Custom Application	acre	0.25	\$ 5.00	\$ 1.25	_____
	Gramoxone Max	pt	1.00	\$ 4.91	\$ 4.91	_____
	Surfactant	pt	0.50	\$ 1.63	\$ 0.82	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Machinery						
Fuel		acre	1.00	\$ 3.20	\$ 3.20	_____
Oil & Filter		acre	1.00	\$ 0.48	\$ 0.48	_____
Repairs & Maintenance		acre	1.00	\$ 2.84	\$ 2.84	_____
Fence Repairs		acre	1.00	\$ 6.86	\$ 6.86	_____
Interest on Operating Capital	6 months	acre	\$ 145.32	8.0%	\$ 5.81	_____
					Total Variable Expenses	\$ 151.13 _____
Fixed Expenses						
Establishment Cost	Prorated over 4 years	acre	1.00	\$ 50.31	\$ 50.31	_____
Machinery						
Depreciation		acre	1.00	\$ 1.21	\$ 1.21	_____
Interest		acre	1.00	\$ 1.67	\$ 1.67	_____
Housing & Insurance	Machinery & Equipment	acre	1.00	\$ 0.19	\$ 0.19	_____
Fencing						
Depreciation	Perimeter Fence	acre	1.00	\$ 6.94	\$ 6.94	_____
Depreciation	Divider Fence	acre	1.00	\$ 6.50	\$ 6.50	_____
Interest	Perimeter Fence	acre	1.00	\$ 5.56	\$ 5.56	_____
Interest	Divider Fence	acre	1.00	\$ 1.30	\$ 1.30	_____
					Total Fixed Expenses	\$ 73.68 _____
Labor Expenses						
Labor ^{5,6}		hour	0.73	\$ 8.50	\$ 6.17	_____
					Total Budgeted Expenses	\$ 230.98 _____

Footnotes:

¹Lime is applied at the rate of 2 tons every 3 years.

²Other materials may be used at slightly less cost, but do not appear as effective.

³Poast Plus is included for control of crabgrass, which is a common problem. If johnsongrass is a problem, Select may be used.

⁴Applied once every four years.

⁵Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

⁶Labor for managing livestock grazing is not included in this budget. Hours devoted to moving cattle and fences should be included in livestock enterprise analyses.

Alfalfa, Intensive Grazing
Estimated Machinery and Labor Requirements per Acre

Month	Operation	Power Unit	Implement	Hours per Acre
			Machine	Labor
Feb	Fertilize	Custom	Custom	---
Mar	Insect Control	Tractor, 60 hp	Boom Sprayer, 20'	0.07
May	Post-Emerge (Poast Plus)	Custom	Custom	0.08
May	Post-Emerge (2,4-DB)	Custom	Custom	---
Jun	Mow	Tractor, 60 hp	Rotary Mower, 10'	---
Aug	Mow	Tractor, 60 hp	Rotary Mower, 10'	0.32
Oct	Lime	Custom	Custom	0.26
Dec	Spray (Gramoxone Max)	Custom	Custom	0.32
				0.26

				0.73
			Total	0.73

Machine	Estimated Machinery Expenses per Acre					Total	
	Variable Cost		Fixed Cost		Housing & Insurance		
	Hours per Acre	Oil & Filter	Repairs	Depreciation			
Tractor, 60 hp	0.58	3.20	0.48	1.02	4.71	0.62	
Rotary Mower, 10'	0.52	0.00	0.00	1.77	1.77	0.53	
16 Boom Sprayer, 20'	0.07	0.00	0.00	0.05	0.05	0.06	
Total	\$ 3.20	\$ 0.48	\$ 2.84	\$ 6.52	\$ 1.21	\$ 1.67	
Total Machinery Cost					\$ 0.19	\$ 3.07	
						\$ 9.60	

Alfalfa, Hay Crop Silage
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Fertilizer	P2O5	lb	60.00	\$ 0.34	\$ 20.40	_____
	K2O	lb	190.00	\$ 0.23	\$ 43.70	_____
	Boron	lb	2.00	\$ 2.38	\$ 4.76	_____
Lime ¹	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Insect Control ²	Custom Application	ton	0.67	\$ 21.00	\$ 14.07	_____
Weed Control	Furadan 4F	pt	2.00	\$ 9.23	\$ 18.46	_____
Post-Emerge	Poast Plus ³	pt	1.50	\$ 6.50	\$ 9.75	_____
	Crop Oil	pt	2.00	\$ 1.73	\$ 3.46	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Dormant Spray	2,4-DB ⁴	pt	1.00	\$ 4.26	\$ 4.26	_____
	Custom Application	acre	0.25	\$ 5.00	\$ 1.25	_____
	Gramoxone Max	pt	1.00	\$ 4.91	\$ 4.91	_____
	Surfactant	pt	0.50	\$ 1.63	\$ 0.82	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Machinery						
Fuel		acre	1.00	\$ 45.01	\$ 45.01	_____
Oil & Filter		acre	1.00	\$ 6.75	\$ 6.75	_____
Repairs & Maintenance		acre	1.00	\$ 47.54	\$ 47.54	_____
Interest on Operating Capital	6 months	acre	\$ 240.13	8.0%	\$ 9.61	_____
				Total Variable Expenses	\$ 249.74	_____
Fixed Expenses						
Establishment Cost	Prorated over 4 years	acre	1.00	\$ 50.31	\$ 50.31	_____
Machinery						
Depreciation		acre	1.00	\$ 39.93	\$ 39.93	_____
Interest		acre	1.00	\$ 32.17	\$ 32.17	_____
Housing & Insurance		acre	1.00	\$ 4.11	\$ 4.11	_____
				Total Fixed Expenses	\$ 126.51	_____
Labor Expenses						
Labor ⁵		hour	7.54	\$ 8.50	\$ 64.05	_____
				Total Budgeted Expenses	\$ 440.30	_____

Footnotes:

¹Lime is applied at the rate of 2 tons every 3 years.

²Other materials may be used at slightly less cost, but do not appear as effective.

³Poast Plus is included for control of crabgrass, which is a common problem. If johnsongrass is a problem, Select may be used.

⁴Applied once every four years.

⁵Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

Alfalfa, Hay Crop Silage
Estimated Machinery and Labor Requirements per Acre

Month	Operation	Power Unit	Implement	Hours per Acre
				Machine Labor
Feb	Fertilize	Custom	Custom	---
Mar	Insect Control	Tractor, 70 hp	Boom Sprayer, 20'	0.07
Apr	Post-Emerge (24,DB)	Custom	Custom	0.08
May	Post-Emerge (Roast Plus)	Custom	Custom	---
May	Mow	Tractor, 70 hp	Mower-Conditioner, 9'	0.37
May	Chop	Tractor, 100 hp	Forage Chopper	0.46
May	Haul	Tractor, 70 hp	Windrow Header	0.56
May	Store	Tractor, 70 hp	Forage Wagon #1	0.70
Jun	Mow	Tractor, 70 hp	Forage Wagon #2	0.35
Jun	Chop	Tractor, 100 hp	Forage Blower	0.28
Jun	Haul	Tractor, 70 hp	Windrow Header	0.28
Jun	Store	Tractor, 70 hp	Forage Wagon #1	0.35
Jul	Mow	Tractor, 70 hp	Forage Wagon #2	0.37
Jul	Chop	Tractor, 100 hp	Forage Blower	0.46
Jul	Haul	Tractor, 70 hp	Windrow Header	0.56
Jul	Store	Tractor, 70 hp	Forage Wagon #1	0.70
Sep	Mow	Tractor, 70 hp	Forage Wagon #2	0.35
Sep	Chop	Tractor, 100 hp	Forage Blower	0.28
Sep	Haul	Tractor, 70 hp	Windrow Header	0.28
Sep	Store	Tractor, 70 hp	Forage Wagon #1	0.35
			Total	7.54

Machine	Hours per Acre	Estimated Machinery Expenses per Acre				Total Fixed Cost	Housing & Insurance	Total Fixed Costs			
		Variable Cost		Total Variable Costs	Depreciation						
		Fuel	Oil & Filter								
Tractor, 100 hp	2.24	20.65	3.10	8.30	32.05	7.54	0.09	0.31			
Tractor, 70 hp	3.78	24.36	3.65	8.02	36.04	5.77	0.14	5.91			
Boom Sprayer, 20'	0.07	0.00	0.00	0.05	0.05	0.06	0.07	0.14			
Mower-Conditioner, 9'	1.47	0.00	0.00	7.53	7.53	4.07	6.62	0.55			
Forage Chopper	2.24	0.00	0.00	12.10	12.10	6.00	6.87	13.53			
Windrow Header	2.24	0.00	0.00	1.46	1.46	1.77	2.02	4.45			
Forage Wagon #1	2.24	0.00	0.00	6.09	6.09	9.08	10.09	20.38			
Forage Wagon #2	1.12	0.00	0.00	3.04	3.04	4.54	5.05	10.19			
Forage Blower	1.12	0.00	0.00	0.94	0.94	1.09	1.21	2.43			
Total Machinery Cost		\$ 45.01	\$ 6.75	\$ 47.54	\$ 99.30	\$ 39.93	\$ 32.17	\$ 4.11			
								\$ 175.50			

	Break-even Analysis			Break-even Price/Ton	
	Below-Average Yield		Yield/Acre		
	Average Yield	Above-Average Yield			
Break-even Price over Total Variable Expenses:	5.6	9.0	12.4	\$ 44.60	
	tons	tons	tons	\$ 27.75	
				\$ 20.14	
Break-even Price over Total Budgeted Expenses:	5.6	9.0	12.4	\$ 78.62	
	tons	tons	tons	\$ 48.92	
				\$ 35.51	

Cool Season Grass, Traditional Establishment
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Seed ¹	Fescue or Orchardgrass	lb	15.00	\$ 1.00	\$ 15.00	_____
Fertilizer	N	lb	30.00	\$ 0.48	\$ 14.40	_____
	P2O5	lb	60.00	\$ 0.34	\$ 20.40	_____
	K2O	lb	60.00	\$ 0.23	\$ 13.80	_____
Lime	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Machinery	Custom Application	ton	2.00	\$ 21.00	\$ 42.00	_____
Fuel		acre	1.00	\$ 15.97	\$ 15.97	_____
Oil & Filter		acre	1.00	\$ 2.40	\$ 2.40	_____
Repairs & Maintenance		acre	1.00	\$ 9.87	\$ 9.87	_____
Interest on Operating Capital	6 Months	acre	\$ 138.84	8.0%	\$ 5.55	_____
				Total Variable Expenses	\$ 144.39	_____
Fixed Expenses						
Machinery						
Depreciation		acre	1.00	\$ 7.18	\$ 7.18	_____
Interest		acre	1.00	\$ 9.62	\$ 9.62	_____
Housing & Insurance		acre	1.00	\$ 0.92	\$ 0.92	_____
				Total Fixed Expenses	\$ 17.73	_____
Labor Expenses						
Labor ²		hour	2.17	\$ 8.50	\$ 18.45	_____
				Total Establishment Expenses	\$ 180.56	_____
Prorated Share		year	6.00	8.0%	\$ 39.06	_____

Footnotes:

¹Seed variety selection should be based on harvest method (grazing, hay or haylage).

²Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

Cool Season Grass, Traditional Establishment
Estimated Machinery and Labor Requirements per Acre

Month	Operation	Power Unit	Implement	Hours per Acre
			Machine	Labor
Aug	Plow	Tractor, 100 hp	Plow, 4-Bottom	0.59
	Fertilize & Lime	Custom	Custom	0.74
Aug	Disk, 3X	Tractor, 100 hp	Disk, 12'	---
Aug	Cultimulch, 2X	Tractor, 100 hp	Cultimulcher, 12'	0.52
Aug	Plant	Tractor, 100 hp	Grain Drill, 10'	0.43
Sep			Cultipacker-Seeder, 10'	0.34
				0.28
			Total	0.35
			Total	2.17

Machine	Estimated Machinery Expenses per Acre					Total Fixed Cost	Housing & Insurance	Total Fixed Costs		
	Variable Cost		Total		Depreciation					
	Hours per Acre	Fuel	Oil & Filter	Repairs	Interest					
Tractor, 100 hp	1.74	15.97	2.40	6.42	24.78	4.66	5.83	0.31		
Plow, 4-Bottom	0.59	0.00	0.00	0.66	0.66	0.24	0.54	0.10		
Disk, 12'	0.52	0.00	0.00	0.96	0.96	1.25	1.31	0.21		
Cultipacker-Seeder, 10'	0.28	0.00	0.00	0.47	0.47	0.26	0.43	0.05		
Cultimulcher, 12'	0.34	0.00	0.00	1.02	1.02	0.42	0.93	0.16		
Grain Drill, 10'	0.28	0.00	0.00	0.35	0.35	0.35	0.58	0.09		
Total		\$15.97	\$2.40	\$9.87	\$28.24	\$7.18	\$9.62	\$0.92		
Total Machinery Cost							\$17.73			
								\$45.96		

Cool Season Grass, No-Till Establishment
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Seed ¹	Fescue or Orchardgrass	lb	15.00	\$ 1.00	\$ 15.00	_____
No-Till Drill, Rental		acre	1.00	\$ 8.00	\$ 8.00	_____
Fertilizer	N	lb	30.00	\$ 0.48	\$ 14.40	_____
	P2O5	lb	60.00	\$ 0.34	\$ 20.40	_____
	K2O	lb	60.00	\$ 0.23	\$ 13.80	_____
Lime	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Weed Control	Custom Application	ton	2.00	\$ 21.00	\$ 42.00	_____
Burndown ²	Gramoxone Max	pt	1.50	\$ 4.91	\$ 7.37	_____
	Surfactant	pt	0.50	\$ 1.63	\$ 0.82	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Machinery		acre	1.00	\$ 3.03	\$ 3.03	_____
Fuel		acre	1.00	\$ 0.45	\$ 0.45	_____
Oil & Filter		acre	1.00	\$ 1.00	\$ 1.00	_____
Repairs & Maintenance		acre				_____
Interest on Operating Capital	6 Months	acre	\$ 131.78	8.0%	\$ 5.27	_____
					Total Variable Expenses	\$ 141.53
Fixed Expenses						
Machinery						_____
Depreciation		acre	1.00	\$ 0.60	\$ 0.60	_____
Interest		acre	1.00	\$ 0.72	\$ 0.72	_____
Housing & Insurance		acre	1.00	\$ 0.05	\$ 0.05	_____
					Total Fixed Expenses	\$ 1.37
Labor Expenses						
Labor ³		hour	0.59	\$ 8.50	\$ 4.99	_____
					Total Establishment Expenses	\$ 147.90
Prorated Share		year	6.00	8.0%	\$ 31.99	_____

Footnotes:

¹Seed variety selection should be based on harvest method (grazing, hay or haylage).

²Other herbicides may also be required, depending on the weeds present prior to establishment.

³Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

**Cool Season Grass, No-Till Establishment
Estimated Machinery and Labor Requirements per Acre**

Month	Operation	Power Unit	Implement	Hours per Acre
Sep	Burndown (Gramoxone Max)	Custom	Custom	---
Sep	Fertilize & Lime	Custom	Custom	---
Sep	Plant	Tractor, 70 hp	No-Till Drill, Rental	0.47
				Total 0.59

Machine	Estimated Machinery Expenses per Acre					Total Fixed Cost Fixed Costs	
	Hours per Acre	Variable Cost			Total		
		Fuel	Oil & Filter	Repairs			
Tractor, 70 hp	0.47	3.03	0.45	1.00	4.48	0.60	
Total		\$ 3.03	\$ 0.45	\$ 1.00	\$ 4.48	\$ 0.60	
Total Machinery Cost						\$ 5.85	

Cool Season Grass, Hay
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Fertilizer ¹	N	lb	120.00	\$ 0.48	\$ 57.60	_____
	P2O5	lb	30.00	\$ 0.34	\$ 10.20	_____
	K2O	lb	30.00	\$ 0.23	\$ 6.90	_____
Lime ²	Custom Application	acre	3.00	\$ 5.00	\$ 15.00	_____
Overseeding ³	Custom Application	ton	0.33	\$ 21.00	\$ 6.93	_____
No-Till Drill, Rental	Fescue or Orchardgrass	lb	2.00	\$ 1.00	\$ 2.00	_____
Weed Control ⁴		acre	0.17	\$ 8.00	\$ 1.36	_____
Post-Emerge	2,4-D Ester 4EC	pt	1.00	\$ 2.04	\$ 2.04	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Twine		bale	5.00	\$ 0.24	\$ 1.19	_____
Machinery						
Fuel		acre	1.00	\$ 27.67	\$ 27.67	_____
Oil & Filter		acre	1.00	\$ 4.51	\$ 4.51	_____
Repairs & Maintenance		acre	1.00	\$ 33.68	\$ 33.68	_____
Interest on Operating Capital	6 months	acre	\$ 174.08	8.0%	\$ 6.96	_____
				Total Variable Expenses	\$ 181.05	_____
Fixed Expenses						
Establishment Cost	Prorated over 6 years	acre	1.00	\$ 31.99	\$ 31.99	_____
Machinery						
Depreciation		acre	1.00	\$ 16.41	\$ 16.41	_____
Interest		acre	1.00	\$ 20.24	\$ 20.24	_____
Housing & Insurance		acre	1.00	\$ 1.79	\$ 1.79	_____
				Total Fixed Expenses	\$ 70.44	_____
Labor Expenses						
Labor ⁵		hour	5.83	\$ 8.50	\$ 49.58	_____
				Total Budgeted Expenses	\$ 301.07	_____

Footnotes:

¹60 lbs of nitrogen applied in March, 30 lbs applied in May, and 30 lbs applied in September to produce fall cutting of hay.

²Lime is applied at the rate of 2 tons every 6 years.

³Overseed 12 lbs once over 6 years. Prorated over stand-life.

⁴Weed spray is done every other year at a rate of 2 pt/acre, to supplement clipping and control broadleaf weeds.

⁵Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

**Cool Season Grass, Hay
Estimated Machinery and Labor Requirements per Acre**

Month	Operation	Power Unit	Implement	Hours per Acre
				Machine Labor
Mar	Fertilize	Custom	Custom	---
Mar	Post-Emerge (2-4, D Ester 4EC)	Custom	Custom	---
May	Mow	Tractor, 70 hp	Mower-Conditioner, 9'	0.37 0.46
May	Tedder, 10'	Tractor, 70 hp	Tedder, 10'	0.10 0.13
May	Rake	Tractor, 70 hp	Rake, 18'	0.19 0.24
May	Bale	Tractor, 70 hp	Baler, Round, 5 x 4	0.40 0.50
May	Stack & Move	Tractor, 70 hp	Front-End Loader/Spear	0.40 0.50
May	Fertilize	Custom	Custom	---
Jun	Mow	Tractor, 70 hp	Mower-Conditioner, 9'	0.37 0.46
Jun	Rake	Tractor, 70 hp	Rake, 18'	0.19 0.24
Jun	Bale	Tractor, 70 hp	Baler, Round, 5 x 4	0.40 0.50
Jun	Stack & Move	Tractor, 70 hp	Front-End Loader/Spear	0.40 0.50
Sep	Fertilize	Custom	Custom	---
Oct	Mow	Tractor, 70 hp	Mower-Conditioner, 9'	0.37 0.46
Oct	Rake	Tractor, 70 hp	Rake, 18'	0.19 0.24
Oct	Bale	Tractor, 70 hp	Baler, Round, 5 x 4	0.40 0.50
Oct	Stack & Move	Tractor, 70 hp	Front-End Loader/Spear	0.40 0.50
Oct	Overseed	Tractor, 70 hp	No-Till Drill, Rental	0.47 0.59
			Total	5.83

Machine	Estimated Machinery Expenses per Acre					Total Fixed Costs	Total Fixed Costs		
	Variable Cost:		Fixed Cost						
	Hours per Acre	Fuel	Oil & Filter	Repairs	Interest				
Tractor, 70 hp	4.67	27.67	4.51	9.90	42.08	5.99	7.12 0.54		
Mower-Conditioner, 9'	1.10	0.00	0.00	5.65	3.05	4.97	0.41 8.42		
Tedder, 10'	0.10	0.00	0.00	0.05	0.04	0.07	0.02 0.13		
Rake, 18'	0.57	0.00	0.00	0.40	0.40	0.33	0.10 0.81		
Baler, Round, 5 x 4	1.21	0.00	0.00	16.08	16.08	5.22	5.72 0.57		
Front-End Loader/Spear	1.21	0.00	0.00	1.60	1.60	1.78	1.98 0.15		
Total		\$ 27.67	\$ 4.51	\$ 33.68	\$ 65.86	\$ 16.41	\$ 20.24 \$ 1.79 \$ 38.45 3.92		
Total Machinery Cost							\$ 104.31		

Break-even Analysis

	Yield/Acre	Break-even Price/Ton
Below-Average Yield	1.5 tons	\$ 120.70
Average Yield	2.5 tons	\$ 72.42
Above-Average Yield	3.5 tons	\$ 51.73
Below-Average Yield	1.5 tons	\$ 200.71
Average Yield	2.5 tons	\$ 120.43
Above-Average Yield	3.5 tons	\$ 86.02

Break-even Price over Total Variable Expenses:

Break-even Price over Total Budgeted Expenses:

Cool Season Grass, Intensive Grazing
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Fertilizer ¹	N P2O5 K2O Custom Application	lb lb lb acre	105.00 30.00 30.00 2.00	\$ 0.48 \$ 0.34 \$ 0.23 \$ 5.00	\$ 50.40 \$ 10.20 \$ 6.90 \$ 10.00	_____
Lime ²	2 tons every 6 years	ton	0.33	\$ 21.00	\$ 6.93	_____
Overseeding ³	Fescue	lb acre	2.00 0.17	\$ 1.00 \$ 8.00	\$ 2.00 \$ 1.36	_____
No-Till Drill, Rental						
Weed Control ⁴						
Post-Emerge	2,4-D Ester 4EC Custom Application	pt acre	1.00 0.50	\$ 2.04 \$ 5.00	\$ 2.04 \$ 2.50	_____
Machinery						
Fuel		acre	1.00	\$ 6.21	\$ 6.21	_____
Oil & Filter		acre	1.00	\$ 0.93	\$ 0.93	_____
Repairs & Maintenance		acre	1.00	\$ 3.80	\$ 3.80	_____
Fence Repairs		acre	1.00	\$ 6.86	\$ 6.86	_____
Interest on Operating Capital	6 months			\$ 110.12 8.0%	\$ 4.40	_____
					Total Variable Expenses	\$ 114.53
Fixed Expenses						
Establishment Cost	Prorated over 6 years	acre	1.00	\$ 31.99	\$ 31.99	_____
Machinery						
Depreciation		acre	1.00	\$ 1.78	\$ 1.78	_____
Interest		acre	1.00	\$ 2.34	\$ 2.34	_____
Housing & Insurance		acre	1.00	\$ 0.25	\$ 0.25	_____
Fencing						
Depreciation	Perimeter Fence	acre	1.00	\$ 6.94	\$ 6.94	_____
Depreciation	Divider Fence	acre	1.00	\$ 6.50	\$ 6.50	_____
Interest	Perimeter Fence	acre	1.00	\$ 5.56	\$ 5.56	_____
Interest	Divider Fence	acre	1.00	\$ 1.30	\$ 1.30	_____
					Total Fixed Expenses	\$ 56.65
Labor Expenses						
Labor ^{5,6}		hour	1.41	\$ 8.50	\$ 11.95	_____
					Total Budgeted Expenses	\$ 183.13

Footnotes:

¹45 lbs of nitrogen applied in March, and 60 lbs applied in September to provide stockpiled grazing.

²Lime is applied at the rate of 2 tons every 6 years.

³Overseed 12 lbs once over 6 years. Prorated over stand-life.

⁴Weed spray every other year at a rate of 2 pt/acre to supplement clipping and control broadleaf weeds.

⁵Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

⁶Labor for managing livestock grazing is not included in this budget. Hours devoted to moving cattle and fences should be included in livestock enterprise analyses.

Cool Season Grass, Intensive Grazing
Estimated Machinery and Labor Requirements per Acre

Month	Operation	Power Unit	Implement	Machine	Hours per Acre
				Labor	
Mar	Fertilize	Custom	Custom Harrow, 10'	---	0.14
Mar	Drag Pastures	Tractor, 60 hp	Custom	---	0.17
Mar	Post-Emerge (2,4-D Ester 4EC)	Custom	Rotary Mower, 10'	---	---
May	Mow	Tractor, 60 hp	Rotary Mower, 10'	0.26	0.32
Jul	Mow	Tractor, 60 hp	Rotary Mower, 10'	0.26	0.32
Oct	Overseed	Tractor, 60 hp	No-Till Drill, Rental	0.47	0.59
Oct	Fertilize	Custom	Custom	---	---
				Total	1.41

Estimated Machinery Expenses per Acre					
Machine	Hours per Acre	Variable Cost		Fixed Cost	
		Fuel	Oil & Filter	Repairs	Depreciation
Tractor, 60 hp	1.12	6.21	0.93	1.98	9.11
Rotary Mower, 10'	0.52	0.00	0.00	1.77	1.77
Harrow, 10'	0.14	0.00	0.00	0.05	0.53
Total		\$ 6.21	\$ 0.93	\$ 3.80	\$ 10.93
Total Machinery Cost					\$ 15.29

Cool Season Grass, Continuous Grazing
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Fertilizer ¹	N P2O5 K2O	lb lb lb	105.00 30.00 30.00	\$ 0.48 \$ 0.34 \$ 0.23	\$ 50.40 \$ 10.20 \$ 6.90	_____
Lime ²	Custom Application	acre	2.00	\$ 5.00	\$ 10.00	_____
Weed Control ³	Custom Application	ton	0.20	\$ 21.00	\$ 4.20	_____
Machinery						
Fuel		acre	1.00	\$ 1.42	\$ 1.42	_____
Oil & Filter		acre	1.00	\$ 0.21	\$ 0.21	_____
Repairs & Maintenance		acre	1.00	\$ 1.34	\$ 1.34	_____
Fence Repairs		acre	1.00	\$ 5.56	\$ 5.56	_____
Interest on Operating Capital	6 months					
		acre	\$ 94.77	8.0%	\$ 3.79	_____
				Total Variable Expenses	\$ 98.57	_____
Fixed Expenses						
Machinery						
Depreciation		acre	1.00	\$ 0.54	\$ 0.54	_____
Interest		acre	1.00	\$ 0.76	\$ 0.76	_____
Housing & Insurance		acre	1.00	\$ 0.09	\$ 0.09	_____
				Total Fixed Expenses	\$ 1.39	_____
Labor Expenses						
Labor ^{4,5}		hour	0.32	\$ 8.50	\$ 2.74	_____
				Total Budgeted Expenses	\$ 102.69	_____

Footnotes:

¹45 lbs of nitrogen applied in March, and 60 lbs applied in September to provide stockpiled grazing.

²Lime is applied at the rate of 2 tons every 10 years.

³Weed spray is done every other year at a rate of 2 pt/acre, to supplement clipping and control broadleaf weeds.

⁴Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

⁵Labor for managing livestock grazing is not included in this budget. Hours devoted to moving cattle and fences should be included in livestock enterprise analyses.

Cool Season Grass, Continuous Grazing
Estimated Machinery and Labor Requirements per Acre

Month	Operation	Power Unit	Implement	Hours per Acre
				Machine
				Labor
Mar	Fertilize	Custom	Custom	---
Mar	Post-Emerge (2,4-D Ester 4EC)	Custom	Custom	---
May	Mow	Tractor, 60 hp	Rotary Mower, 10'	0.26
Oct	Fertilize	Custom	Custom	---
				Total 0.32

Estimated Machinery Expenses per Acre				
Machine	Hours per Acre	Total		
		Variable Cost	Oil & Filter	Repairs
Tractor, 60 hp	0.26	1.42	0.21	0.45
Rotary Mower, 10'	0.26	0.00	0.00	0.88
Total		\$ 1.42	\$ 0.21	\$ 1.34
Total Machinery Cost				\$ 4.36

Cool Season Grass, Hay Crop Silage
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Fertilizer ¹	N	lb	120.00	\$ 0.48	\$ 57.60	_____
	P2O5	lb	30.00	\$ 0.34	\$ 10.20	_____
	K2O	lb	30.00	\$ 0.23	\$ 6.90	_____
Lime ²	Custom Application	acre	3.00	\$ 5.00	\$ 15.00	_____
Overseeding ³	Custom Application	ton	0.33	\$ 21.00	\$ 6.93	_____
No-Till Drill, Rental	Fescue or Orchardgrass	lb	2.00	\$ 1.00	\$ 2.00	_____
Weed Control ⁴		acre	0.17	\$ 8.00	\$ 1.36	_____
Post-Emerge	2,4-D Ester 4EC	pt	1.00	\$ 2.04	\$ 2.04	_____
	Custom Application	acre	0.50	\$ 5.00	\$ 2.50	_____
Machinery						
Fuel		acre	1.00	\$ 36.47	\$ 36.47	_____
Oil & Filter		acre	1.00	\$ 5.47	\$ 5.47	_____
Repairs & Maintenance		acre	1.00	\$ 36.51	\$ 36.51	_____
Interest on Operating Capital	6 months	acre	\$ 182.98	8.0%	\$ 7.32	_____
				Total Variable Expenses	\$ 190.30	_____
Fixed Expenses						
Establishment Cost	Prorated over 6 years	acre	1.00	\$ 31.99	\$ 31.99	_____
Machinery						
Depreciation		acre	1.00	\$ 28.60	\$ 28.60	_____
Interest		acre	1.00	\$ 34.53	\$ 34.53	_____
Housing & Insurance		acre	1.00	\$ 3.09	\$ 3.09	_____
				Total Fixed Expenses	\$ 98.22	_____
Labor Expenses						
Labor ⁵		hour	6.18	\$ 8.50	\$ 52.51	_____
				Total Budgeted Expenses	\$ 341.03	_____

Footnotes:

¹60 lbs of nitrogen applied in March, 30 lbs applied in May, and 30 lbs applied in September to produce Fall cutting of silage.

²Lime is applied at the rate of 2 tons every 6 years.

³Overseed 12 lbs once over 6 years. Prorated over stand-life.

⁴Weed spray is done every other year at a rate of 2 pt/acre, to supplement clipping and control broadleaf weeds.

⁵Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

Cool Season Grass, Hay Crop Silage
Estimated Machinery and Labor Requirements per Acre

Month	Operation	Power Unit	Implement	Machine	Hours per Acre	Labor
Mar	Fertilize	Custom	Custom	---	---	---
Mar	Post-Emerge (2,4-D Ester 4EC)	Custom	Mower-Conditioner, 9'	0.37	0.46	---
Apr	Mow	Tractor, 70 hp	Forage Chopper	0.56	0.70	---
Apr	Chop	Tractor, 100 hp	Windrow Header	0.28	0.35	0.35
Apr	Stack & Move	Tractor, 70 hp	Forage Wagon #2	0.28	0.35	0.35
Apr	Store	Tractor, 70 hp	Forage Blower	0.28	0.35	0.35
May	Fertilize	Custom	Custom	---	---	---
Jun	Mow	Tractor, 70 hp	Mower-Conditioner, 9'	0.37	0.46	0.46
Jun	Chop	Tractor, 100 hp	Forage Chopper	0.56	0.70	0.70
Jun	Stack & Move	Tractor, 70 hp	Windrow Header	0.28	0.35	0.35
Jun	Store	Tractor, 70 hp	Forage Wagon #2	0.28	0.35	0.35
Sep	Fertilize	Custom	Forage Blower	0.28	0.35	0.35
Oct	Mow	Tractor, 70 hp	Custom	---	---	---
Oct	Chop	Tractor, 100 hp	Mower-Conditioner, 9'	0.37	0.46	0.46
Oct	Stack & Move	Tractor, 70 hp	Forage Chopper	0.56	0.70	0.70
Oct	Store	Tractor, 70 hp	Windrow Header	0.28	0.35	0.35
Oct	Overseed	Tractor, 70 hp	Forage Wagon #2	0.28	0.35	0.35
			No-Till Drill, Rental	0.47	0.59	0.59
				Total	6.18	

Machine	Estimated Machinery Expenses per Acre			Total		
	Variable Cost			Fixed Cost		Housing & Insurance
	Hours per Acre	Fuel	Oil & Filter	Repairs	Depreciation	Interest
Tractor, 100 hp	1.68	15.49	2.32	6.22	24.03	4.51
Tractor, 70 hp	3.26	20.98	3.15	6.91	31.04	4.18
Mower-Conditioner, 9'	1.10	0.00	0.00	5.65	5.65	3.05
Forage Chopper	1.68	0.00	0.00	9.08	9.08	4.50
Windrow Header	1.68	0.00	0.00	1.09	1.09	1.33
Forage Wagon #1	1.68	0.00	0.00	4.57	4.57	6.81
Forage Wagon #2	0.84	0.00	0.00	2.28	2.28	3.41
Forage Blower	0.84	0.00	0.00	0.71	0.71	0.82
Total		\$ 36.47	\$ 5.47	\$ 36.51	\$ 78.45	\$ 28.60
Total Machinery Cost					\$ 34.53	\$ 3.09
						\$ 66.23
						\$ 144.68

Break-even Analysis

Below-Average Yield	Average Yield	Above-Average Yield	Yield/Acre	Price/Ton	Break-even Price over Total Variable Expenses:
					4.5 tons
					\$ 42.29
					\$ 31.72
					\$ 22.39
Below-Average Yield	Average Yield	Above-Average Yield	Yield/Acre	Price/Ton	Break-even Price over Total Budgeted Expenses:
					\$ 75.79
					\$ 56.84
					\$ 40.12

Cool Season Grass/Clover, Traditional Establishment
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm	
Variable Expenses							
Seed ¹	Fescue or Orchardgrass	lb	15.00	\$ 1.00	\$ 15.00	_____	
	White Clover	lb	2.00	\$ 3.06	\$ 6.12	_____	
	Red Clover	lb	4.00	\$ 2.86	\$ 11.44	_____	
Fertilizer	N	lb	30.00	\$ 0.48	\$ 14.40	_____	
	P2O5	lb	60.00	\$ 0.34	\$ 20.40	_____	
	K2O	lb	60.00	\$ 0.23	\$ 13.80	_____	
Lime	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____	
Machinery	Custom Application	ton	2.00	\$ 21.00	\$ 42.00	_____	
Fuel		acre	1.00	\$ 17.00	\$ 17.00	_____	
Oil & Filter		acre	1.00	\$ 2.55	\$ 2.55	_____	
Repairs & Maintenance		acre	1.00	\$ 10.34	\$ 10.34	_____	
Interest on Operating Capital	6 Months			\$ 158.06	8.0%	\$ 6.32	_____
					Total Variable Expenses	\$ 164.38	_____
Fixed Expenses							
Machinery							
Depreciation		acre	1.00	\$ 7.53	\$ 7.53	_____	
Interest		acre	1.00	\$ 10.05	\$ 10.05	_____	
Housing & Insurance		acre	1.00	\$ 0.96	\$ 0.96	_____	
					Total Fixed Expenses	\$ 18.54	_____
Labor Expenses							
Labor ²		hour	2.31	\$ 8.50	\$ 19.64	_____	
					Total Establishment Expenses	\$ 202.56	_____
Prorated Share		year	6.00	8.0%	\$ 43.82	_____	

Footnotes:

¹Seed variety selection should be based on harvest method (grazing, hay or haylage).

²Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

**Cool Season Grass/Clover, Traditional Establishment
Estimated Machinery and Labor Requirements per Acre**

Month	Operation	Power Unit	Implement	Hours per Acre
				Machine Labor
Aug	Plow	Tractor, 100 hp	Plow, 4-Bottom	0.59
	Fertilize & Lime	Custom		0.74
Aug	Disk, 3X	Tractor, 100 hp	Custom	---
Aug	Cultimulch, 2X	Tractor, 100 hp	Disk, 12'	---
	Plant Fescue or Orchardgrass	Tractor, 100 hp	Cultimulcher, 12'	0.52
Sep	Plant Clover	Tractor, 100 hp	Grain Drill, 10'	0.34
			Cultipacker-Seeder, 10'	0.43
Feb		Broadcast Spreader		0.28
				0.35
				0.11
				0.14
				Total
				2.31

Machine	Estimated Machinery Expenses per Acre				Total Fixed Cost	Housing & Insurance	Total Fixed Costs			
	Hours per Acre	Variable Cost								
		Oil & Filter	Fuel	Repairs						
Tractor, 100 hp	1.85	17.00	2.55	6.83	26.39	4.96	6.21			
Plow, 4-Bottom	0.59	0.00	0.00	0.66	0.66	0.24	0.54			
Disk, 12'	0.52	0.00	0.00	0.96	0.96	1.25	1.31			
Cultipacker-Seeder, 10'	0.28	0.00	0.00	0.47	0.47	0.26	0.43			
Cultimulcher, 12'	0.34	0.00	0.00	1.02	1.02	0.42	0.93			
Grain Drill, 10'	0.28	0.00	0.00	0.35	0.35	0.35	0.58			
Broadcast Spreader	0.11	0.00	0.00	0.06	0.06	0.05	0.05			
Total		\$ 17.00	\$ 2.55	\$ 10.34	\$ 29.90	\$ 7.53	\$ 10.05			
Total Machinery Cost						\$ 0.96	\$ 18.54			
							\$ 48.43			

Cool Season Grass/Clover, No-Till Establishment
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Seed ¹	Fescue or Orchardgrass	lb	15.00	\$ 1.00	\$ 15.00	_____
	White Clover	lb	2.00	\$ 3.06	\$ 6.12	_____
	Red Clover	lb	4.00	\$ 2.86	\$ 11.44	_____
No-Till Drill, Rental		acre	1.00	\$ 8.00	\$ 8.00	_____
Fertilizer	N	lb	30.00	\$ 0.48	\$ 14.40	_____
	P2O5	lb	60.00	\$ 0.34	\$ 20.40	_____
	K2O	lb	60.00	\$ 0.23	\$ 13.80	_____
Lime	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Weed Control	Custom Application	ton	2.00	\$ 21.00	\$ 42.00	_____
Burndown	Gramoxone Max	pt	1.50	\$ 4.91	\$ 7.37	_____
	Surfactant	pt	0.50	\$ 1.63	\$ 0.82	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Machinery		acre	1.00	\$ 3.75	\$ 3.75	_____
Fuel		acre	1.00	\$ 0.56	\$ 0.56	_____
Oil & Filter		acre	1.00	\$ 1.29	\$ 1.29	_____
Repairs & Maintenance		acre	1.00	\$ 1.29	\$ 1.29	_____
Interest on Operating Capital	6 Months	acre	\$ 149.34	8.0%	\$ 5.97	_____
Total Variable Expenses						\$ 160.92
Fixed Expenses						
Machinery		acre	1.00	\$ 0.80	\$ 0.80	_____
Depreciation		acre	1.00	\$ 0.94	\$ 0.94	_____
Interest		acre	1.00	\$ 0.08	\$ 0.08	_____
Housing & Insurance		acre	1.00			
Total Fixed Expenses						\$ 1.82
Labor						
Labor ²		hour	0.73	\$ 8.50	\$ 6.19	_____
Total Establishment Expenses						\$ 168.92
Prorated Share		year	6.00	8.0%	\$ 36.54	_____

Footnotes:

¹Seed variety selection should be based on harvest method (grazing, hay or haylage).

²Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

**Cool Season Grass/Clover, No-Till Establishment
Estimated Machinery and Labor Requirements per Acre**

Month	Operation	Power Unit			Implement			Hours per Acre		
		Custom	Custom	Custom	Custom	No-Till Drill, Rental	Broadcast Spreader	Machine	Labor	Machine
Sep	Burndown (Gramoxone Max)	Custom	Custom	Custom	Custom	---	---	---	---	---
Sep	Fertilize & Lime	Custom	Custom	Custom	Custom	---	---	---	---	---
Sep	Plant Fescue or Orchardgrass	Tractor, 70 hp	Tractor, 70 hp	Tractor, 70 hp	Tractor, 70 hp	No-Till Drill, Rental	0.47	0.59	0.59	0.59
Sep	Plant Clover					Broadcast Spreader	0.11	0.14	0.14	0.14
						Total	0.73	0.73	0.73	0.73

Machine	Hours per Acre	Estimated Machinery Expenses per Acre						Total Fixed Costs	Total Fixed Costs		
		Variable Cost			Total						
		Fuel	Oil & Filter	Repairs	Variable Costs	Depreciation	Interest				
Tractor, 70 hp	0.58	3.75	0.56	1.24	5.55	0.75	0.89	0.07	1.70		
Broadcast Spreader	0.11	0.00	0.00	0.06	0.06	0.05	0.05	0.01	0.11		
Total		\$ 3.75	\$ 0.56	\$ 1.29	\$ 5.60	\$ 0.80	\$ 0.94	\$ 0.08	\$ 1.82		
Total Machinery Cost								\$ 7.42			

Cool Season Grass/Clover, Hay
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Fertilizer ¹	N	lb	60.00	\$ 0.48	\$ 28.80	_____
	P2O5	lb	30.00	\$ 0.34	\$ 10.20	_____
	K2O	lb	30.00	\$ 0.23	\$ 6.90	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Overseeding ²	Fescue or Orchardgrass	lb	2.00	\$ 1.00	\$ 2.00	_____
	White Clover	lb	0.33	\$ 3.06	\$ 1.01	_____
	Red Clover	lb	0.67	\$ 2.86	\$ 1.92	_____
No-Till Drill, Rental		acre	0.17	\$ 8.00	\$ 1.36	_____
Weed Control ³						
Post-Emerge	2,4-D Ester 4EC	pt	0.33	\$ 2.04	\$ 0.67	_____
	Custom Application	acre	0.33	\$ 5.00	\$ 1.65	_____
Twine		bale	5.00	\$ 0.24	\$ 1.19	_____
Machinery						
Fuel		acre	1.00	\$ 28.94	\$ 28.94	_____
Oil & Filter		acre	1.00	\$ 4.27	\$ 4.27	_____
Repairs & Maintenance		acre	1.00	\$ 33.27	\$ 33.27	_____
Interest on Operating Capital	6 months			acre \$ 127.18 8.0%	\$ 5.09	_____
					Total Variable Expenses	\$ 132.27 _____
Fixed Expenses						
Establishment Cost		acre	1.00	\$ 36.54	\$ 36.54	_____
Machinery						
Depreciation		acre	1.00	\$ 16.18	\$ 16.18	_____
Interest		acre	1.00	\$ 20.00	\$ 20.00	_____
Housing & Insurance		acre	1.00	\$ 1.81	\$ 1.81	_____
					Total Fixed Expenses	\$ 74.54 _____
Labor Expenses						
Labor ⁴		hour	5.62	\$ 8.50	\$ 47.76	_____
					Total Budgeted Expenses	\$ 254.57 _____

Footnotes:

¹Fall application of nitrogen. Spring nitrogen provided by clover.

²To maintain clover in the pasture it should be overseeded once during the 6-year stand-life, at the rate of 2 lbs of white clover and 4 lbs of red clover per acre. 12 lbs of fescue or orchardgrass also overseeded once. These rates are prorated over the life of the stand.

³Weed spray is done once at a rate of 2 pt/acre, and is prorated over the 6-year stand-life.

⁴Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

**Cool Season Grass/Clover, Hay
Estimated Machinery and Labor Requirements per Acre**

Month	Operation	Power Unit	Implement	Hours per Acre
			Machine	Labor
Feb	Post-Emerge (2-4,D Ester 4EC)	Custom	Custom Broadcast Spreader	---
Feb	Overseed Clover	Tractor, 70 hp	Mower-Conditioner, 9'	0.02
May	Mow	Tractor, 70 hp	Tedder, 10'	0.37
May	Tedder, 10'	Tractor, 70 hp	Rake, 18'	0.10
May	Rake	Tractor, 70 hp	Baler, Round, 5 x 4	0.19
May	Bale	Tractor, 70 hp	Front-End Loader/Spear	0.40
May	Stack & Move	Tractor, 70 hp	Mower-Conditioner, 9'	0.40
Jun	Mow	Tractor, 70 hp	Tedder, 10'	0.37
Jun	Tedder, 10'	Tractor, 70 hp	Rake, 18'	0.10
Jun	Rake	Tractor, 70 hp	Baler, Round, 5 x 4	0.19
Jun	Bale	Tractor, 70 hp	Front-End Loader/Spear	0.40
Jun	Stack & Move	Tractor, 70 hp	Mower-Conditioner, 9'	0.40
Jun	Overseed Fescue or Orchardgrass	Tractor, 70 hp	Front-End Loader/Spear	0.50
Sep	Fertilize & Lime	Custom	No-Till Drill, Rental	0.08
Sep	Mow	Tractor, 70 hp	Custom	0.10
Oct	Tedder, 10'	Tractor, 70 hp	Mower-Conditioner, 9'	---
Oct	Rake	Tractor, 70 hp	Tedder, 10'	0.37
Oct	Bale	Tractor, 70 hp	Rake, 18'	0.10
Oct	Stack & Move	Tractor, 70 hp	Baler, Round, 5 x 4	0.19
Total			Front-End Loader/Spear	0.40
			Total	0.50
			Total	5.62

Estimated Machinery Expenses per Acre

Machine	Hours per Acre	Variable Cost			Total	Fixed Cost	Housing & Insurance	Total Fixed Costs				
		Fuel	Oil & Filter	Repairs								
Tractor, 70 hp	4.50	28.94	4.27	9.37	42.58	5.67	6.74	0.51				
Mower-Conditioner, 9'	1.10	0.00	0.00	5.65	5.65	3.05	4.97	0.41				
Tedder, 10'	0.30	0.00	0.00	0.16	0.16	0.12	0.20	0.06				
Rake, 18'	0.57	0.00	0.00	0.40	0.40	0.33	0.38	0.10				
Baler, Round, 5 x 4	1.21	0.00	0.00	16.08	16.08	5.22	5.72	0.57				
Front-End Loader/Spear	1.21	0.00	0.00	1.60	1.60	1.78	1.98	0.15				
Broadcast Spreader	0.02	0.00	0.00	0.01	0.01	0.01	0.01	0.02				
Total Machinery Cost		\$ 28.94	\$ 4.27	\$ 33.27	\$ 66.48	\$ 16.18	\$ 20.00	\$ 1.81				
								\$ 38.00				
								\$ 104.48				

Break-even Analysis

	Yield/Acre	Break-even Price/Ton
Below-Average Yield	1.5 tons	\$ 88.18
Average Yield	2.5 tons	\$ 52.91
Above-Average Yield	3.5 tons	\$ 37.79
Below-Average Yield	1.5 tons	\$ 169.71
Average Yield	2.5 tons	\$ 101.83
Above-Average Yield	3.5 tons	\$ 72.73

Break-even Price over Total Variable Expenses:

Break-even Price over Total Budgeted Expenses:

Cool Season Grass/Clover, Intensive Grazing
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Fertilizer ¹	N P2O5 K2O Custom Application	lb lb lb acre	60.00 30.00 30.00 1.00	\$ 0.48 \$ 0.34 \$ 0.23 \$ 5.00	\$ 28.80 \$ 10.20 \$ 6.90 \$ 5.00	_____
Overseeding ²	Fescue or Orchardgrass White Clover Red Clover	lb lb lb	2.00 0.33 0.67	\$ 1.00 \$ 3.06 \$ 2.86	\$ 2.00 \$ 1.01 \$ 1.92	_____
No-Till Drill, Rental		acre	0.17	\$ 8.00	\$ 1.36	_____
Weed Control ³						_____
Post-Emerge	2,4-D Ester 4EC Custom Application	pt acre	1.00 0.17	\$ 2.04 \$ 5.00	\$ 2.04 \$ 0.85	_____
Machinery						_____
Fuel		acre	1.00	\$ 4.14	\$ 4.14	_____
Oil & Filter		acre	1.00	\$ 0.62	\$ 0.62	_____
Repairs & Maintenance		acre	1.00	\$ 3.15	\$ 3.15	_____
Fence Repairs		acre	1.00	\$ 6.86	\$ 6.86	_____
Interest on Operating Capital	6 months			\$ 74.85 8.0%	\$ 2.99	_____
					Total Variable Expenses	\$ 77.85
Fixed Expenses						
Establishment Cost		acre	1.00	\$ 36.54	\$ 36.54	_____
Machinery						_____
Depreciation		acre	1.00	\$ 1.39	\$ 1.39	_____
Interest		acre	1.00	\$ 1.87	\$ 1.87	_____
Housing & Insurance		acre	1.00	\$ 0.21	\$ 0.21	_____
Fencing						_____
Depreciation	Perimeter Fence	acre	1.00	\$ 6.94	\$ 6.94	_____
Depreciation	Divider Fence	acre	1.00	\$ 6.50	\$ 6.50	_____
Interest	Perimeter Fence	acre	1.00	\$ 5.56	\$ 5.56	_____
Interest	Divider Fence	acre	1.00	\$ 1.30	\$ 1.30	_____
					Total Fixed Expenses	\$ 60.31
Labor Expenses						
Labor ^{4,5}		hour	0.94	\$ 8.50	\$ 7.98	_____
					Total Budgeted Expenses	\$ 146.14

Footnotes:

¹Fall application of nitrogen. Spring nitrogen provided by clover.

²To maintain clover in the pasture it should be overseeded once during the 6-year stand-life, at the rate of 2 lbs of white clover and 4 lbs of red clover per acre. 12 lbs of fescue also overseeded once. These rates are prorated over the life of the stand.

³Weed spray is done once at a rate of 2 pt/acre, and is prorated over the 6-year stand-life.

⁴Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

⁵Labor for managing livestock grazing is not included in this budget. Hours devoted to moving cattle and fences should be included in livestock enterprise analyses.

Cool Season Grass/Clover, Intensive Grazing
Estimated Machinery and Labor Requirements per Acre

Month	Operation	Power Unit	Implement	Hours per Acre
			Machine	Labor
Feb	Post-Emerge (2,4-D Ester 4EC)	Custom	Custom	---
Feb	Fertilize	Custom	Custom	---
Feb	Overseed Clover	Tractor, 60 hp	Broadcast Spreader	0.02
Mar	Drag Pastures	Tractor, 60 hp	Harrow, 10'	0.14
May	Mow	Tractor, 60 hp	Rotary Mower, 10'	0.26
Jun	Fertilize	Custom	Custom	---
Jul	Mow	Tractor, 60 hp	Rotary Mower, 10'	0.26
Sep	Overseed Fescue or Orchardgrass	Tractor, 60 hp	No-Till Drill, Rental	0.32
Sep	Fertilize	Custom	Custom	0.08
				0.10

			Total	0.94

Estimated Machinery Expenses per Acre						
Machine	Hours per Acre	Variable Cost		Fixed Cost		Total Fixed Costs
		Fuel	Oil & Filter	Repairs	Depreciation	
Tractor, 60 hp	0.75	4.14	0.62	1.32	6.09	0.80
Rotary Mower, 10'	0.52	0.00	0.00	1.77	1.77	0.53
Harrow, 10'	0.14	0.00	0.00	0.05	0.05	0.05
Broadcast Spreader	0.02	0.00	0.00	0.01	0.01	0.01
Total Machinery Cost		\$ 4.14	\$ 0.62	\$ 3.15	\$ 7.92	\$ 1.39
						\$ 1.87
						\$ 0.21
						\$ 3.47
						\$ 11.39

Cool Season Grass/Clover, Continuous Grazing
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm	
Variable Expenses							
Fertilizer ¹	N	lb	60.00	\$ 0.48	\$ 28.80	_____	
	P2O5	lb	30.00	\$ 0.34	\$ 10.20	_____	
	K2O	lb	30.00	\$ 0.23	\$ 6.90	_____	
Lime ²	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____	
Overseeding ³	Custom Application	ton	0.20	\$ 21.00	\$ 4.20	_____	
	White Clover	lb	0.33	\$ 3.06	\$ 1.01	_____	
	Red Clover	lb	0.67	\$ 2.86	\$ 1.92	_____	
Weed Control ⁴							
Post-Emerge	2,4-D Ester 4EC	pt	1.00	\$ 2.04	\$ 2.04	_____	
	Custom Application	acre	0.50	\$ 5.00	\$ 2.50	_____	
Machinery							
Fuel		acre	1.00	\$ 1.53	\$ 1.53	_____	
Oil & Filter		acre	1.00	\$ 0.23	\$ 0.23	_____	
Repairs & Maintenance		acre	1.00	\$ 1.38	\$ 1.38	_____	
Fence Repairs		acre	1.00	\$ 5.56	\$ 5.56	_____	
Interest on Operating Capital	6 months			\$ 71.26	8.0%	\$ 2.85	_____
					Total Variable Expenses	\$ 74.11	_____
Fixed Expenses							
Machinery							
Depreciation		acre	1.00	\$ 0.57	\$ 0.57	_____	
Interest		acre	1.00	\$ 0.79	\$ 0.79	_____	
Housing & Insurance		acre	1.00	\$ 0.09	\$ 0.09	_____	
					Total Fixed Expenses	\$ 1.45	_____
Labor Expenses							
Labor ^{5,6}		hour	0.35	\$ 8.50	\$ 2.94	_____	
					Total Budgeted Expenses	\$ 78.50	_____

Footnotes:

¹Fall application of nitrogen. Spring nitrogen provided by clover.

²Lime is applied at the rate of 2 tons every 10 years.

³To maintain clover in the pasture it should be overseeded every four years, at the rate of 2 lbs of white clover and 4 lbs of red clover per acre.

⁴Weed spray is done every 2 years at a rate of 2 pt/acre to supplement clipping and control broadleaf weeds.

⁵Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

⁶Labor for managing livestock grazing is not included in this budget. Hours devoted to moving cattle and fences should be included in livestock enterprise analyses.

Cool Season Grass/Clover, Continuous Grazing
Estimated Machinery and Labor Requirements per Acre

Month	Operation	Power Unit	Implement	Hours per Acre
			Machine	Labor
Feb	Post-Emerge (2,4-D Ester 4EC)	Custom	Custom	---
	overseed Clover	Tractor, 60 hp	Broadcast Spreader	0.02
	Mow	Tractor, 60 hp	Rotary Mower, 10'	0.26
May	Fertilize & Lime	Custom	Custom	---
Sep				---
			Total	0.35

Estimated Machinery Expenses per Acre					
Machine	Variable Cost		Fixed Cost		Total Fixed Costs
	Hours per Acre	Fuel	Oil & Filter	Repairs	
Tractor, 60 hp	0.28	1.53	0.23	0.49	0.24
Rotary Mower, 10'	0.26	0.00	0.00	0.88	0.27
Broadcast Spreader	0.02	0.00	0.00	0.01	0.01
Total		\$ 1.53	\$ 0.23	\$ 1.38	\$ 3.13
Total Machinery Cost				\$ 0.57	\$ 0.79
					\$ 4.59

Cool Season Grass/Clover, Hay Crop Silage
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Fertilizer ¹	N	lb	60.00	\$ 0.48	\$ 28.80	_____
	P2O5	lb	30.00	\$ 0.34	\$ 10.20	_____
	K2O	lb	30.00	\$ 0.23	\$ 6.90	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Overseeding ²	Fescue or Orchardgrass	lb	2.00	\$ 1.00	\$ 2.00	_____
	White Clover	lb	0.33	\$ 3.06	\$ 1.01	_____
	Red Clover	lb	0.67	\$ 2.86	\$ 1.92	_____
No-Till Drill, Rental		acre	0.17	\$ 8.00	\$ 1.36	_____
Weed Control ³						
Post-Emerge	2,4-D Ester 4EC	pt	0.33	\$ 2.04	\$ 0.67	_____
	Custom Application	acre	0.17	\$ 5.00	\$ 0.85	_____
Machinery						
Fuel		acre	1.00	\$ 34.06	\$ 34.06	_____
Oil & Filter		acre	1.00	\$ 5.11	\$ 5.11	_____
Repairs & Maintenance		acre	1.00	\$ 35.72	\$ 35.72	_____
Interest on Operating Capital	6 months	acre	\$ 133.60	8.0%	\$ 5.34	_____
				Total Variable Expenses	\$ 138.95	_____
Fixed Expenses						
Establishment Cost		acre	1.00	\$ 36.54	\$ 36.54	_____
Machinery						
Depreciation		acre	1.00	\$ 28.13	\$ 28.13	_____
Interest		acre	1.00	\$ 33.96	\$ 33.96	_____
Housing & Insurance		acre	1.00	\$ 1.72	\$ 1.72	_____
				Total Fixed Expenses	\$ 100.35	_____
Labor Expenses						
Labor ⁴		hour	5.71	\$ 8.50	\$ 48.54	_____
				Total Budgeted Expenses	\$ 287.84	_____

Footnotes:

¹Fall application of nitrogen. Spring nitrogen provided by clover.

²To maintain clover in the pasture it should be overseeded once during the 6-year stand-life, at the rate of 2 lbs of white clover and 4 lbs of red clover per acre. 12 lbs of fescue also overseeded once. These rates are prorated over the life of the stand.

³Weed spray is done once at a rate of 2 pt/acre, and is prorated over the 6-year stand-life.

⁴Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

Cool Season Grass/Clover, Hay Crop Silage
Estimated Machinery and Labor Requirements per Acre

Month	Operation	Power Unit	Implement	Machine	Hours per Acre
				Labor	
Feb	Post-Emerge (2,4-D Ester 4EC)	Custom	Custom	---	---
Feb	Overseed Clover	Tractor, 70 hp	Broadcast Spreader	0.02	0.02
May	Mow	Tractor, 70 hp	Mower-Conditioner, 9'	0.37	0.46
May	Chop	Tractor, 100 hp	Forage Chopper	0.56	0.70
May	Stack & Move	Tractor, 70 hp	Windrow Header	0.28	0.35
May	Store	Tractor, 70 hp	Forage Wagon #2	0.28	0.35
Jun	Mow	Tractor, 70 hp	Forage Blower	0.28	0.35
Jun	Chop	Tractor, 100 hp	Mower-Conditioner, 9'	0.37	0.46
Jun	Stack & Move	Tractor, 70 hp	Forage Wagon #2	0.28	0.35
Jun	Store	Tractor, 70 hp	Forage Blower	0.28	0.35
Sep	Overseed Fescue or Orchardgrass	Tractor, 70 hp	No-Till Drill, Rental	0.08	0.10
Sep	Fertilize & Lime	Custom	Custom	---	---
Oct	Mow	Tractor, 70 hp	Mower-Conditioner, 9'	0.37	0.46
Oct	Chop	Tractor, 100 hp	Forage Chopper	0.56	0.70
Oct	Stack & Move	Tractor, 70 hp	Windrow Header	0.28	0.35
Oct	Store	Tractor, 70 hp	Forage Wagon #2	0.28	0.35
			Forage Blower		
			Total	5.71	

Estimated Machinery Expenses per Acre					
Machine	Hours per Acre	Variable Cost		Fixed Cost	
		Oil & Filter	Fuel	Repairs	Depreciation
Tractor, 100 hp	1.68	15.49	2.32	6.22	24.03
Tractor, 70 hp	2.89	18.58	2.79	6.12	27.48
Mower-Conditioner, 9'	1.10	0.00	0.00	5.65	5.65
Forage Chopper	1.68	0.00	0.00	9.08	9.08
Windrow Header	1.68	0.00	0.00	1.09	1.09
Forage Wagon #1	1.68	0.00	0.00	4.57	4.57
Forage Wagon #2	0.84	0.00	0.00	2.28	2.28
Forage Blower	0.84	0.00	0.00	0.71	0.71
Total		\$ 34.06	\$ 5.11	\$ 35.72	\$ 74.89
Total Machinery Cost				\$ 28.13	\$ 33.96
					\$ 1.72
					\$ 63.81
					\$ 138.70

Break-even Analysis

Break-even Price over Total Variable Expenses:	Yield/Acre	Break-even Price/Ton
	Below-Average Yield	
Below-Average Yield	2.7	tons
Average Yield	5.0	tons
Above-Average Yield	8.3	tons
Break-even Price over Total Budgeted Expenses:		
Below-Average Yield	2.7	tons
Average Yield	5.0	tons
Above-Average Yield	8.3	tons

Summer Annuals, Hay, No-Till Establishment
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Seed ¹	Sorghum-Sudan Hybrid	lb	35.00	\$ 0.35	\$ 12.25	_____
Fertilizer ²	N	lb	120.00	\$ 0.48	\$ 57.60	_____
	P2O5	lb	30.00	\$ 0.34	\$ 10.20	_____
	K2O	lb	60.00	\$ 0.23	\$ 13.80	_____
Lime ³	Custom Application	acre	2.00	\$ 5.00	\$ 10.00	_____
Weed Control	Custom Application	ton	0.50	\$ 21.00	\$ 10.50	_____
Burndown	Gramoxone Max	pt	1.50	\$ 4.91	\$ 7.37	_____
	Surfactant	pt	0.50	\$ 1.63	\$ 0.82	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Post-Emerge	2,4-D Amine	pt	2.00	\$ 2.05	\$ 4.10	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Twine		bale	6.00	\$ 0.24	\$ 1.43	_____
Machinery						
Fuel		acre	1.00	\$ 23.21	\$ 23.21	_____
Oil & Filter		acre	1.00	\$ 3.48	\$ 3.48	_____
Repairs & Maintenance		acre	1.00	\$ 28.73	\$ 28.73	_____
Interest on Operating Capital	6 Months	acre	\$ 193.48	8.0%	\$ 7.74	_____
				Total Variable Expenses	\$ 201.22	_____
Fixed Expenses						
Machinery						
Depreciation		acre	1.00	\$ 13.63	\$ 13.63	_____
Interest		acre	1.00	\$ 17.62	\$ 17.62	_____
Housing & Insurance		acre	1.00	\$ 1.56	\$ 1.56	_____
				Total Fixed Expenses	\$ 32.81	_____
Labor Expenses						
Labor ⁴		hour	4.51	\$ 8.50	\$ 38.30	_____
				Total Budgeted Expenses	\$ 272.33	_____

Footnotes:

¹Pearlmillet and sudangrass may also be used for hay.

²60 lbs of nitrogen applied at seeding, remainder applied following first cutting of hay, assuming seed is planted before June 20.

³Lime is applied at the rate of 2 tons every 4 years.

⁴Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

Summer Annuals, Hay, No-Till Establishment
Estimated Machinery and Labor Requirements per Acre

Month	Operation	Power Unit	Implement	Hours per Acre
May	Burndown (Gramoxone Max)	Custom	Custom	---
May	Fertilize & Lime	Custom	Custom	---
May	Plant	Tractor, 70 hp	No-Till Drill, 10'	0.47
Jun	Post-Emerge (2-4,D Amine)	Custom	Custom	---
Jul	Mow	Tractor, 70 hp	Mower-Conditioner, 9'	0.37
Jul	Tedder, 10', 2X	Tractor, 70 hp	Tedder, 10'	0.20
Jul	Rake	Tractor, 70 hp	Rake, 18'	0.19
Jul	Bale	Tractor, 70 hp	Baler, Round, 5 x 4	0.40
Jul	Stack & Move	Tractor, 70 hp	Front-End Loader/Spear	0.40
Jul	Fertilize	Custom	Custom	---
Sep	Mow	Tractor, 70 hp	Mower-Conditioner, 9'	0.37
Sep	Tedder, 10', 2X	Tractor, 70 hp	Tedder, 10'	0.20
Sep	Rake	Tractor, 70 hp	Rake, 18'	0.19
Sep	Bale	Tractor, 70 hp	Baler, Round, 5 x 4	0.40
Sep	Stack & Move	Tractor, 70 hp	Front-End Loader/Spear	0.40
			Total	4.51

Machine	Estimated Machinery Expenses per Acre			Total Fixed Cost	Housing & Insurance	Total Fixed Costs			
	Hours per Acre	Variable Cost							
		Fuel	Oil & Filter						
Tractor, 70 hp	3.60	23.21	3.48	7.65	34.34	4.63			
No-Till Drill, 10'	0.47	0.00	0.00	5.05	5.05	5.50			
Mower-Conditioner, 9'	0.74	0.00	0.00	3.76	3.76	3.31			
Tedder, 10'	0.40	0.00	0.00	0.22	0.22	0.27			
Rake, 18'	0.38	0.00	0.00	0.27	0.27	0.17			
Baler, Round, 5 x 4	0.81	0.00	0.00	10.72	10.72	3.48			
Front-End Loader/Spear	0.81	0.00	0.00	1.07	1.07	1.19			
Total		\$ 23.21	\$ 3.48	\$ 28.73	\$ 55.42	\$ 13.63			
Total Machinery Cost					\$ 17.62	\$ 1.56			
						\$ 32.81			
						\$ 88.23			

Break-even Analysis

Yield/Acre	Price/Ton	Break-even Price over Total Variable Expenses:
1.5 tons	\$ 134.15	
3.0 tons	\$ 67.07	
4.5 tons	\$ 44.72	
		Below-Average Yield
		Average Yield
		Above-Average Yield
		Below-Average Yield
		Average Yield
		Above-Average Yield

Summer Annuals, Intensive Grazing, No-Till Establishment
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Seed ¹	Sorghum-Sudan Hybrid	lb	35.00	\$ 0.35	\$ 12.25	_____
Fertilizer ²	N	lb	120.00	\$ 0.48	\$ 57.60	_____
	P2O5	lb	30.00	\$ 0.34	\$ 10.20	_____
	K2O	lb	60.00	\$ 0.23	\$ 13.80	_____
Lime ³	Custom Application	acre	2.00	\$ 5.00	\$ 10.00	_____
Weed Control	Custom Application	ton	0.50	\$ 21.00	\$ 10.50	_____
Burndown	Gramoxone Max	pt	1.50	\$ 4.91	\$ 7.37	_____
	Surfactant	pt	0.50	\$ 1.63	\$ 0.82	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Post-Emerge	2,4-D Amine	pt	2.00	\$ 2.05	\$ 4.10	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Machinery						
Fuel		acre	1.00	\$ 8.29	\$ 8.29	_____
Oil & Filter		acre	1.00	\$ 1.24	\$ 1.24	_____
Repairs & Maintenance		acre	1.00	\$ 8.95	\$ 8.95	_____
Fence Repairs ⁴		acre	1.00	\$ 3.43	\$ 3.43	_____
Interest on Operating Capital	6 months					
		acre	\$ 158.53	8.0%	\$ 6.34	_____
					Total Variable Expenses	\$ 164.88
Fixed Expenses						
Machinery						
Depreciation		acre	1.00	\$ 3.71	\$ 3.71	_____
Interest		acre	1.00	\$ 5.36	\$ 5.36	_____
Housing & Insurance		acre	1.00	\$ 0.54	\$ 0.54	_____
Fencing ⁴						
Depreciation	Perimeter Fence	acre	1.00	\$ 3.47	\$ 3.47	_____
Depreciation	Divider Fence	acre	1.00	\$ 3.25	\$ 3.25	_____
Interest	Perimeter Fence	acre	1.00	\$ 2.78	\$ 2.78	_____
Interest	Divider Fence	acre	1.00	\$ 0.65	\$ 0.65	_____
					Total Fixed Expenses	\$ 19.75
Labor Expenses						
Labor ^{5,6}		hour	1.88	\$ 8.50	\$ 15.95	_____
					Total Budgeted Expenses	\$ 200.58

Footnotes:

¹Pearl millet and sudangrass may also be used for hay.

²60 lbs of nitrogen applied at seeding, remainder applied following first grazing, assuming seed is planted before June 20.

³Lime is applied at the rate of 2 tons every 4 years.

⁴Fencing costs are only included for one-half of the year to correspond with the productive period of summer annuals.

⁵Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

⁶Labor for managing livestock grazing is not included in this budget. Hours devoted to moving cattle and fences should be included in livestock enterprise analyses.

Summer Annuals, Intensive Grazing, No-Till Establishment
Estimated Machinery and Labor Requirements per Acre

Month	Operation	Power Unit	Implement	Hours per Acre Machine Labor
May	Burndown (Gramoxone Max)	Custom	Custom	---
May	Fertilize & Lime	Custom	Custom	---
May	Plant	Tractor, 60 hp	No-Till Drill, 10'	0.47
Jul	Clip	Tractor, 60 hp	Rotary Mower, 10'	0.26
Jul	Fertilize	Custom	Custom	---
Aug	Clip, 2X	Tractor, 60 hp	Rotary Mower, 10'	0.52
Sep	Clip	Tractor, 60 hp	Rotary Mower, 10'	0.26
			Total	1.88

Machine	Estimated Machinery Expenses per Acre					Total Fixed Costs	
	Hours per Acre	Variable Cost		Depreciation	Interest		
		Fuel	Oil & Filter				
Tractor, 60 hp	1.50	8.29	1.24	2.64	12.17	1.60	
No-Till Drill, 10'	0.26	0.00	0.00	2.77	1.05	1.73	
Rotary Mower, 10'	1.03	0.00	0.00	3.54	1.06	1.73	
Total		\$ 8.29	\$ 1.24	\$ 8.95	\$ 18.47	\$ 3.71	
Total Machinery Cost						\$ 28.07	

Summer Annuals, Hay Crop Silage, No-Till Establishment
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Seed ¹	Sorghum-Sudan Hybrid	lb	35.00	\$ 0.35	\$ 12.25	_____
Fertilizer ²	N	lb	120.00	\$ 0.48	\$ 57.60	_____
	P2O5	lb	30.00	\$ 0.34	\$ 10.20	_____
	K2O	lb	60.00	\$ 0.23	\$ 13.80	_____
Lime ³	Custom Application	acre	2.00	\$ 5.00	\$ 10.00	_____
Weed Control	Custom Application	ton	0.50	\$ 21.00	\$ 10.50	_____
Burndown	Gramoxone Max	pt	1.50	\$ 4.91	\$ 7.37	_____
	Surfactant	pt	0.50	\$ 1.63	\$ 0.82	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Post-Emerge	2,4-D Amine	pt	2.00	\$ 2.05	\$ 4.10	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Machinery						
Fuel		acre	1.00	\$ 25.32	\$ 25.32	_____
Oil & Filter		acre	1.00	\$ 3.80	\$ 3.80	_____
Repairs & Maintenance		acre	1.00	\$ 29.72	\$ 29.72	_____
Interest on Operating Capital	6 months	acre	\$ 195.47	8.0%	\$ 7.82	_____
				Total Variable Expenses	\$ 203.29	_____
Fixed Expenses						
Machinery						
Depreciation		acre	1.00	\$ 21.18	\$ 21.18	_____
Interest		acre	1.00	\$ 26.41	\$ 26.41	_____
Housing & Insurance		acre	1.00	\$ 2.86	\$ 2.86	_____
				Total Fixed Expenses	\$ 50.46	_____
Labor Expenses						
Labor ⁴		hour	4.31	\$ 8.50	\$ 36.67	_____
				Total Budgeted Expenses	\$ 290.42	_____

Footnotes:

¹Pearl millet and forage sorghum may also be used for silage, but should be seeded at recommended rates.

²60 lbs of nitrogen applied at seeding, remainder applied following first silage cutting, assuming seed is planted before June 20.

³Lime is applied at the rate of 2 tons every 4 years.

⁴Labor cost is based on a cash wage for hired labor of \$8.50 equivalent per hour which includes social security and medicaid taxes, and payroll administration.

**Summer Annuals, Hay Crop Silage, No-Till Establishment
Estimated Machinery and Labor Requirements per Acre**

Month	Operation	Power Unit		Implement		Machine	Labor	Hours per Acre
		Custom	Custom	Custom	No-Till Drill, 10'			
May	Burndown (Gramoxone Max)	Custom	Custom	Custom	---	---	---	---
May	Fertilize & Lime	Custom	Custom	Custom	0.47	0.59	---	---
May	Plant	Tractor, 70 hp	Tractor, 70 hp	No-Till Drill, 10'	---	---	---	---
Jun	Post-Emerge (2,4-D Amine)	Custom	Custom	Mower-Conditioner, 9'	0.37	0.46	---	---
Jul	Mow	Tractor, 70 hp	Tractor, 100 hp	Forage Chopper Windrow Header	0.56	0.70	0.28	0.35
Jul	Chop	Tractor, 70 hp	Tractor, 100 hp	Forage Wagon #1	0.56	0.70	0.28	0.35
Jul	Stack & Move	Tractor, 70 hp	Tractor, 70 hp	Forage Blower	0.28	0.35	---	---
Jul	Store	Custom	Custom	Custom	---	---	---	---
Jul	Fertilize	Tractor, 70 hp	Tractor, 70 hp	Mower-Conditioner, 9'	0.37	0.46	0.28	0.35
Sep	Mow	Tractor, 100 hp	Tractor, 100 hp	Forage Chopper Windrow Header	0.56	0.70	0.28	0.35
Sep	Chop	Tractor, 70 hp	Tractor, 70 hp	Forage Wagon #2	0.28	0.35	0.28	0.35
Sep	Stack & Move	Tractor, 70 hp	Tractor, 70 hp	Forage Blower	0.28	0.35	0.28	0.35
Sep	Store	Tractor, 70 hp	Tractor, 70 hp	Total	4.31	4.31		

Machine	Estimated Machinery Expenses per Acre						Total Fixed Cost	Housing & Insurance	Total Fixed Costs			
	Variable Cost			Total								
	Hours per Acre	Fuel	Oil & Filter	Repairs	Variable Costs	Depreciation						
Tractor, 100 hp	1.12	10.32	1.55	4.15	16.02	3.01	3.77	0.20	6.98			
Tractor, 70 hp	2.33	15.00	2.25	4.94	22.19	2.99	3.55	0.27	6.81			
Mower-Conditioner, 9'	0.74	0.00	0.00	3.76	3.76	2.03	3.31	0.31	5.65			
Forage Chopper	1.12	0.00	0.00	6.05	6.05	3.00	3.44	0.31	6.75			
Windrow Header	1.12	0.00	0.00	0.73	0.73	0.88	1.01	0.30	2.19			
Forage Wagon #1	1.12	0.00	0.00	3.04	3.04	4.54	5.05	0.56	10.15			
Forage Wagon #2	0.56	0.00	0.00	1.52	1.52	2.27	2.52	0.45	5.25			
Forage Blower	0.56	0.00	0.00	0.47	0.47	0.54	0.61	0.10	1.25			
No-Till Drill, 10'	0.47	0.00	0.00	5.05	5.05	1.91	3.15	0.36	5.43			
Total Machinery Cost	\$ 25.32	\$ 3.80	\$ 29.72	\$ 58.84	\$ 21.18	\$ 26.41	\$ 2.86	\$ 50.46	\$ 109.30			

Break-even Price over Total Variable Expenses:	Break-even Analysis			Break-even Price/Ton	
	Below-Average Yield		Yield/Acre		
	Average Yield	Above-Average Yield			
Below-Average Yield	3.6	7.3	tons	\$ 56.47	
Average Yield	7.3	11.0	tons	\$ 27.85	
Above-Average Yield	11.0	11.0	tons	\$ 18.48	
Below-Average Yield	3.6	7.3	tons	\$ 80.67	
Average Yield	7.3	11.0	tons	\$ 39.78	
Above-Average Yield	11.0	11.0	tons	\$ 26.40	

Winter Annuals, Hay, Traditional Establishment
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Seed ¹	Wheat	bu	1.50	\$ 9.60	\$ 14.40	_____
Fertilizer ²	N	lb	120.00	\$ 0.48	\$ 57.60	_____
	P2O5	lb	40.00	\$ 0.34	\$ 13.60	_____
	K2O	lb	40.00	\$ 0.23	\$ 9.20	_____
	Custom Application	acre	2.00	\$ 5.00	\$ 10.00	_____
Lime ³	Custom Application	ton	0.50	\$ 21.00	\$ 10.50	_____
Twine		bale	4.00	\$ 0.24	\$ 0.95	_____
Machinery						
Fuel		acre	1.00	\$ 16.13	\$ 16.13	_____
Oil & Filter		acre	1.00	\$ 2.42	\$ 2.42	_____
Repairs & Maintenance		acre	1.00	\$ 14.95	\$ 14.95	_____
Interest on Operating Capital	6 Months	acre	\$ 149.76	8.0%	\$ 5.99	_____
				Total Variable Expenses	\$ 155.75	_____
Fixed Expenses						
Machinery						
Depreciation		acre	1.00	\$ 8.59	\$ 8.59	_____
Interest		acre	1.00	\$ 10.64	\$ 10.64	_____
Housing & Insurance		acre	1.00	\$ 1.77	\$ 1.77	_____
				Total Fixed Expenses	\$ 21.00	_____
Labor Expenses						
Labor ⁴		hour	2.74	\$ 8.50	\$ 23.31	_____
				Total Budgeted Expenses	\$ 200.06	_____

Footnotes:

¹Ryegrass may also be used as a winter annual hay crop.

²60 lbs of nitrogen applied at seeding. Remainder applied in the Spring.

³Lime is applied at the rate of 2 tons per acre every 4 years.

⁴Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

**Winter Annuals, Hay, Traditional Establishment
Estimated Machinery and Labor Requirements per Acre**

Month	Operation	Power Unit	Implement	Hours per Acre
Sep	Chisel	Tractor, 100 hp	Chisel Plow, 9'	0.22
	Fertilize & Lime	Custom	Custom	0.27
Oct	Prepare Seedbed, 2X	Tractor, 100 hp	Disk, 12'	---
Oct	Plant	Tractor, 100 hp	Harrow, 10'	0.34
Oct	Fertilize	Custom	Grain Drill, 10'	0.17
Mar	Mow	Custom	Custom	0.21
May	Tedder, 10'	Tractor, 70 hp	Mower-Conditioner, 9'	---
May	Rake	Tractor, 70 hp	Tedder, 10'	0.37
May	Bale	Tractor, 70 hp	Rake, 18'	0.10
May	Stack & Move	Tractor, 70 hp	Baler, Round, 5 x 4	0.13
			Front-End Loader/Spear	0.19
				0.40
				0.50
				0.40
				0.50
				Total 2.74

Machine	Estimated Machinery Expenses per Acre					Total Fixed Cost	
	Variable Cost		Fixed Cost				
	Hours per Acre	Fuel	Oil & Filter	Repairs	Interest		
Tractor, 100 hp	0.73	6.69	1.00	2.69	10.39	1.95	
Tractor, 70 hp	1.47	9.44	1.42	3.11	13.97	1.88	
Chisel Plow, 9'	0.22	0.00	0.00	0.21	0.09	0.19	
Grain Drill, 10'	0.17	0.00	0.00	0.21	0.21	0.34	
Disk, 12'	0.34	0.00	0.00	0.64	0.64	0.87	
Harrow, 10'	0.34	0.00	0.00	0.13	0.13	0.12	
Mower-Conditioner, 9'	0.37	0.00	0.00	1.88	1.88	1.02	
Rake, 18'	0.19	0.00	0.00	0.13	0.13	0.13	
Baler, Round, 5 x 4	0.40	0.00	0.00	5.36	5.36	1.74	
Front-End Loader/Spear	0.40	0.00	0.00	0.53	0.53	0.59	
Tedder, 10'	0.10	0.00	0.00	0.05	0.05	0.04	
Total		\$ 16.13	\$ 2.42	\$ 14.95	\$ 33.51	\$ 8.59	
Total Machinery Cost						\$ 10.64	
						\$ 1.77	
						\$ 21.00	
						\$ 54.50	

Break-even Analysis

Break-even Price over Total Variable Expenses:	Yield/Acre	Price/Ton
Below-Average Yield	1.0 tons	\$ 155.75
Average Yield	2.0 tons	\$ 77.87
Above-Average Yield	3.0 tons	\$ 51.92
Break-even Price over Total Budgeted Expenses:		
Below-Average Yield	1.0 tons	\$ 200.06
Average Yield	2.0 tons	\$ 100.03
Above-Average Yield	3.0 tons	\$ 66.69

Winter Annuals, Hay, No-Till Establishment
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm	
Variable Expenses							
Seed ¹	Wheat	bu	1.50	\$ 9.60	\$ 14.40	_____	
Fertilizer ²	N	lb	120.00	\$ 0.48	\$ 57.60	_____	
	P2O5	lb	40.00	\$ 0.34	\$ 13.60	_____	
	K2O	lb	40.00	\$ 0.23	\$ 9.20	_____	
Lime ³	Custom Application	acre	2.00	\$ 5.00	\$ 10.00	_____	
Weed Control	Custom Application	ton	0.50	\$ 21.00	\$ 10.50	_____	
Burndown	Gramoxone Max	pt	1.50	\$ 4.91	\$ 7.37	_____	
	Surfactant	pt	0.50	\$ 1.63	\$ 0.82	_____	
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____	
Twine		bale	4.00	\$ 0.24	\$ 0.95	_____	
Machinery							
Fuel		acre	1.00	\$ 12.47	\$ 12.47	_____	
Oil & Filter		acre	1.00	\$ 1.87	\$ 1.87	_____	
Repairs & Maintenance		acre	1.00	\$ 17.12	\$ 17.12	_____	
Interest on Operating Capital	6 Months			\$ 160.89	8.0%	\$ 6.44	_____
					Total Variable Expenses	\$ 167.32	_____
Fixed Expenses							
Machinery							
Depreciation		acre	1.00	\$ 7.90	\$ 7.90	_____	
Interest		acre	1.00	\$ 10.52	\$ 10.52	_____	
Housing & Insurance		acre	1.00	\$ 0.89	\$ 0.89	_____	
					Total Fixed Expenses	\$ 19.32	_____
Labor Expenses							
Labor ⁴		hour	2.42	\$ 8.50	\$ 20.57	_____	
					Total Budgeted Expenses	\$ 207.21	_____

Footnotes:

¹Ryegrass may also be used as a winter annual hay crop.

²60 lbs of nitrogen applied at seeding. Remainder applied in the Spring.

³Lime is applied at the rate of 2 tons per acre every 4 years.

⁴Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

**Winter Annuals, Hay, No-Till Establishment
Estimated Machinery and Labor Requirements per Acre**

Month	Operation	Power Unit	Implement	Hours per Acre
			Machine	Labor
Oct	Burndown (Gramoxone Max)	Custom	Custom	---
Oct	Fertilize & Lime	Custom	Custom	---
Oct	Plant	Tractor, 70 hp	No-Till Drill, 10'	0.47
Mar	Fertilize	Custom	Custom	---
May	Mow	Tractor, 70 hp	Mower-Conditioner, 9'	0.37
May	Tedder, 10'	Tractor, 70 hp	Tedder, 10'	0.10
May	Rake	Tractor, 70 hp	Rake, 18'	0.19
May	Bale	Tractor, 70 hp	Baler, Round, 5 x 4	0.40
May	Stack & Move	Tractor, 70 hp	Front-End Loader/Spear	0.40
			Total	2.42

Machine	Estimated Machinery Expenses per Acre					Total Fixed Cost	Housing & Insurance	Total Fixed Costs			
	Variable Cost			Depreciation	Interest						
	Hours per Acre	Fuel	Oil & Filter								
Tractor, 70 hp	1.94	12.47	1.87	4.11	18.44	2.48	2.95	0.22			
No-Till Drill, 10'	0.47	0.00	0.00	5.05	5.05	1.91	3.15	0.24			
Mower-Conditioner, 9'	0.37	0.00	0.00	1.88	1.88	1.02	1.66	0.14			
Tedder, 10'	0.10	0.00	0.00	0.05	0.05	0.04	0.07	0.02			
Rake, 18'	0.19	0.00	0.00	0.13	0.13	0.11	0.13	0.03			
Baler, Round, 5 x 4	0.40	0.00	0.00	5.36	5.36	1.74	1.91	0.19			
Front-End Loader/Spear	0.40	0.00	0.00	0.53	0.53	0.59	0.66	0.05			
Total	\$ 12.47	\$ 1.87	\$ 17.12	\$ 31.46	\$ 7.90	\$ 10.52	\$ 0.89	\$ 19.32			
Total Machinery Cost								\$ 50.77			

Break-even Analysis

Yield/Acre	Break-even Price/Ton		
	Below-Average Yield	Average Yield	Above-Average Yield
	1.0 ton	2.0 tons	3.0 tons
Break-even Price over Total Variable Expenses:	\$ 167.32	\$ 83.66	\$ 55.77
Break-even Price over Total Budgeted Expenses:	\$ 207.21	\$ 103.61	\$ 69.07

Winter Annuals, Intensive Grazing, No-Till Establishment
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm	
Variable Expenses							
Seed ¹	Rye	bu	1.50	\$ 14.84	\$ 22.26	_____	
	Ryegrass	lb	15.00	\$ 0.59	\$ 8.85	_____	
Fertilizer ²	N	lb	120.00	\$ 0.48	\$ 57.60	_____	
	P2O5	lb	40.00	\$ 0.34	\$ 13.60	_____	
	K2O	lb	40.00	\$ 0.23	\$ 9.20	_____	
	Custom Application	acre	3.00	\$ 5.00	\$ 15.00	_____	
Lime ³	Custom Application	ton	0.50	\$ 21.00	\$ 10.50	_____	
Weed Control							
Burndown	Gramoxone Max	pt	1.50	\$ 4.91	\$ 7.37	_____	
	Surfactant	pt	0.50	\$ 1.63	\$ 0.82	_____	
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____	
Machinery							
Fuel		acre	1.00	\$ 6.35	\$ 6.35	_____	
Oil & Filter		acre	1.00	\$ 0.95	\$ 0.95	_____	
Repairs & Maintenance		acre	1.00	\$ 8.91	\$ 8.91	_____	
Fence Repairs		acre	1.00	\$ 6.86	\$ 6.86	_____	
Interest on Operating Capital	6 months			acre \$ 173.26	8.0%	\$ 6.93	_____
					Total Variable Expenses	\$ 180.19	_____
Fixed Expenses							
Machinery							
Depreciation		acre	1.00	\$ 3.71	\$ 3.71	_____	
Interest		acre	1.00	\$ 5.52	\$ 5.52	_____	
Housing & Insurance		acre	1.00	\$ 0.48	\$ 0.48	_____	
Fencing							
Depreciation	Perimeter Fence	acre	1.00	\$ 6.94	\$ 6.94	_____	
Depreciation	Divider Fence	acre	1.00	\$ 6.50	\$ 6.50	_____	
Interest	Perimeter Fence	acre	1.00	\$ 5.56	\$ 5.56	_____	
Interest	Divider Fence	acre	1.00	\$ 1.30	\$ 1.30	_____	
					Total Fixed Expenses	\$ 30.01	_____
Labor Expenses							
Labor ^{4,5}		hour	1.23	\$ 8.50	\$ 10.47	_____	
					Total Budgeted Expenses	\$ 220.67	_____

Footnotes:

¹Wheat and crimson clover may also be used for Winter grazing.

²60 lbs of nitrogen applied at seeding. Remainder applied in the Spring as two 30 lb. applications.

³Lime is applied at the rate of 2 tons per acre every 4 years.

⁴Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

⁵Labor for managing livestock grazing is not included in this budget. Hours devoted to moving cattle and fences should be included in livestock enterprise analyses.

Winter Annuals, Intensive Grazing, No-Till Establishment
Estimated Machinery and Labor Requirements per Acre

Month	Operation	Power Unit	Implement	Machine Hours per Acre	Labor Hours per Acre
Sep	Burndown (Gramoxone Max)	Custom	Custom	---	---
Sep	Fertilize & Lime	Custom	Custom	---	---
Sep	Plant	Tractor, 70 hp	No-Till Drill, 10'	0.47	0.59
Mar	Fertilize	Tractor, 70 hp	Custom	---	---
Apr	Clip	Tractor, 70 hp	Rotary Mower, 10'	0.26	0.32
May	Fertilize	Tractor, 70 hp	Custom	---	---
May	Clip	Tractor, 70 hp	Rotary Mower, 10'	0.26	0.32
		Total	Total	1.23	1.23

Machine	Estimated Machinery Expenses per Acre					Total Fixed Costs	
	Hours per Acre	Variable Cost		Total Variable Costs	Fixed Cost		
		Fuel	Oil & Filter				
Tractor, 70 hp	0.99	6.35	0.95	2.09	9.39	1.26	
No-Till Drill, 10'	0.47	0.00	0.00	5.05	5.05	1.91	
Rotary Mower, 10'	0.52	0.00	0.00	1.77	1.77	0.53	
Total		\$ 6.35	\$ 0.95	\$ 8.91	\$ 16.21	\$ 3.71	
Total Machinery Cost						\$ 25.91	

Winter Annuals, Hay Crop Silage, Traditional Establishment
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Seed ¹	Wheat	bu	1.50	\$ 9.60	\$ 14.40	_____
	Crimson Clover	lb	10.00	\$ 0.95	\$ 9.50	_____
Fertilizer ²	N	lb	60.00	\$ 0.48	\$ 28.80	_____
	P2O5	lb	40.00	\$ 0.34	\$ 13.60	_____
	K2O	lb	40.00	\$ 0.23	\$ 9.20	_____
	Custom Application	acre	2.00	\$ 5.00	\$ 10.00	_____
Lime ³	Custom Application	ton	0.50	\$ 21.00	\$ 10.50	_____
Machinery						
Fuel		acre	1.00	\$ 15.83	\$ 15.83	_____
Oil & Filter		acre	1.00	\$ 2.37	\$ 2.37	_____
Repairs & Maintenance		acre	1.00	\$ 14.57	\$ 14.57	_____
Interest on Operating Capital	6 months	acre	\$ 128.78	8.0%	\$ 5.15	_____
				Total Variable Expenses	\$ 133.93	_____
Fixed Expenses						
Machinery						
Depreciation		acre	1.00	\$ 11.52	\$ 11.52	_____
Interest		acre	1.00	\$ 13.92	\$ 13.92	_____
Housing & Insurance		acre	1.00	\$ 2.12	\$ 2.12	_____
				Total Fixed Expenses	\$ 27.56	_____
Labor Expenses						
Labor ⁴		hour	1.80	\$ 8.50	\$ 15.32	_____
				Total Budgeted Expenses	\$ 176.81	_____

Footnotes:

¹Rye may also be used for wilted silage. Oats and barley may be considered, but have been lost to freezes in some years.

²60 lbs of nitrogen applied at seeding. Remainder applied in the Spring.

³Lime is applied at the rate of 2 tons per acre every 4 years.

⁴Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

**Winter Annuals, Hay Crop Silage, Traditional Establishment
Estimated Machinery and Labor Requirements per Acre**

Month	Operation	Power Unit	Implement	Machine	Hours per Acre
				Labor	
Sep	Chisel	Tractor, 70 hp	Chisel Plow, 9'	0.22	---
	Prepare Seedbed, 2X	Tractor, 70 hp	Disk, 12'	0.34	0.43
Oct	Fertilize & Lime	Custom	Custom	---	---
Oct	Plant	Tractor, 70 hp	Grain Drill, 10'	0.17	0.21
Oct	Fertilize	Custom	Custom	---	---
Mar	Mow & Condition	Tractor, 70 hp	Mower-Conditioner, 9'	0.37	0.46
May	Chop	Tractor, 100 hp	Forage Chopper Windrow Header	0.56	0.70
May	Stack & Move	Tractor, 70 hp	Forage Wagon #2	0.28	0.35
May	Store	Tractor, 70 hp	Forage Blower	0.28	0.35
			Total	1.80	

Machine	Estimated Machinery Expenses per Acre					Total Fixed Cost	Housing & Insurance	Total Fixed Costs	
	Variable Cost		Fixed Cost		Total				
	Hours per Acre	Fuel	Oil & Filter	Repairs	Depreciation	Interest			
Tractor, 100 hp	0.56	5.16	0.77	2.07	8.01	1.50	1.89	0.10	
Tractor, 70 hp	1.66	10.67	1.60	3.52	15.79	2.13	2.53	0.19	
Mower-Conditioner, 9'	0.37	0.00	0.00	1.88	1.88	1.02	1.66	0.13	
Forage Chopper	0.56	0.00	0.00	3.03	3.03	1.50	1.72	0.11	
Windrow Header	0.56	0.00	0.00	0.36	0.36	0.44	0.51	0.24	
Forage Wagon #1	0.56	0.00	0.00	1.52	1.52	2.27	2.52	0.35	
Forage Wagon #2	0.28	0.00	0.00	0.76	0.76	1.14	1.26	0.35	
Forage Blower	0.28	0.00	0.00	0.24	0.24	0.27	0.30	0.07	
Disk, 12'	0.34	0.00	0.00	0.64	0.64	0.84	0.87	0.28	
Chisel Plow, 9'	0.22	0.00	0.00	0.21	0.21	0.09	0.19	0.03	
Grain Drill, 10'	0.17	0.00	0.00	0.21	0.21	0.21	0.34	0.24	
Harrow, 10'	0.34	0.00	0.00	0.13	0.13	0.12	0.13	0.02	
Total		\$ 15.83	\$ 2.37	\$ 14.57	\$ 32.78	\$ 11.52	\$ 13.92	\$ 2.12	
Total Machinery Cost								\$ 27.56	
								\$ 60.34	

Break-even Analysis

Yield/Acre	Break-even Price/Ton		
	Below-Average Yield	Average Yield	Above-Average Yield
	2.8	5.0	7.2
Below-Average Yield	2.8	tons	tons
Average Yield	5.0	tons	tons
Above-Average Yield	7.2	tons	tons
Below-Average Yield	2.8	tons	\$ 63.15
Average Yield	5.0	tons	\$ 35.36
Above-Average Yield	7.2	tons	\$ 24.56

Break-even Price over Total Variable Expenses:

Below-Average Yield \$ 47.83
Average Yield \$ 26.79
Above-Average Yield \$ 18.60

Break-even Price over Total Budgeted Expenses:

Below-Average Yield \$ 63.15
Average Yield \$ 35.36
Above-Average Yield \$ 24.56

Winter Annuals, Hay Crop Silage, No-Till Establishment
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Seed ¹	Wheat	bu	1.50	\$ 9.60	\$ 14.40	_____
	Crimson Clover	lb	10.00	\$ 0.95	\$ 9.50	_____
Fertilizer ²	N	lb	60.00	\$ 0.48	\$ 28.80	_____
	P2O5	lb	40.00	\$ 0.34	\$ 13.60	_____
	K2O	lb	40.00	\$ 0.23	\$ 9.20	_____
	Custom Application	acre	2.00	\$ 5.00	\$ 10.00	_____
Lime ³	Custom Application	ton	0.50	\$ 21.00	\$ 10.50	_____
Weed Control						
Burndown	Gramoxone Max	pt	1.50	\$ 4.91	\$ 7.37	_____
	Surfactant	pt	0.50	\$ 1.63	\$ 0.82	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Machinery						
Fuel		acre	1.00	\$ 14.17	\$ 14.17	_____
Oil & Filter		acre	1.00	\$ 2.13	\$ 2.13	_____
Repairs & Maintenance		acre	1.00	\$ 17.88	\$ 17.88	_____
Interest on Operating Capital	6 months					
		acre	\$ 143.36	8.0%	\$ 5.73	_____
					Total Variable Expenses	\$ 149.10
Fixed Expenses						
Machinery						
Depreciation		acre	1.00	\$ 11.85	\$ 11.85	_____
Interest		acre	1.00	\$ 15.14	\$ 15.14	_____
Housing & Insurance		acre	1.00	\$ 1.75	\$ 1.75	_____
					Total Fixed Expenses	\$ 28.74
Labor Expenses						
Labor ⁴		hour	2.45	\$ 8.50	\$ 20.83	_____
					Total Budgeted Expenses	\$ 198.67

Footnotes:

¹Rye may also be used for wilted silage. Oats and barley may be considered, but have been lost to freezes in some years.

²60 lbs of nitrogen applied at seeding. Remainder applied in the Spring.

³Lime is applied at the rate of 2 tons per acre every 4 years.

⁴Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

**Winter Annuals, Hay Crop Silage, No-Till Establishment
Estimated Machinery and Labor Requirements per Acre**

Month	Operation	Power Unit	Implement	Hours per Acre
			Machine	Labor
Oct	Burndown (Gramoxone)	Custom	Custom	---
Oct	Fertilize & Lime	Custom	Custom	---
Oct	Plant	Tractor, 70 hp	No-Till Drill, 10'	0.47
Oct	Fertilize	Custom	Custom	0.59
Mar	Mow & Condition	Tractor, 70 hp	Mower-Conditioner, 9'	---
May	Chop	Tractor, 100 hp	Forage Chopper	0.37
May	Stack & Move	Tractor, 70 hp	Windrow Header	0.46
May	Store	Tractor, 70 hp	Forage Wagon #1	0.70
			Forage Wagon #2	0.28
			Forage Blower	0.35
			Total	0.28
				Total
				2.45

Machine	Estimated Machinery Expenses per Acre				Total Fixed Cost	Housing & Insurance	Total Fixed Costs			
	Variable Cost			Depreciation						
	Hours per Acre	Fuel	Oil & Filter							
Tractor, 100 hp	0.56	5.16	0.77	2.07	8.01	1.50	1.89			
Tractor, 70 hp	1.40	9.01	1.35	2.97	13.33	1.80	2.14			
Mower-Conditioner, 9'	0.37	0.00	0.00	1.88	1.02	1.66	0.16			
Forage Chopper	0.56	0.00	0.00	3.03	1.50	1.72	0.13			
Windrow Header	0.56	0.00	0.00	0.36	0.44	0.51	0.24			
Forage Wagon #1	0.56	0.00	0.00	1.52	2.27	2.52	0.24			
Forage Wagon #2	0.28	0.00	0.00	0.76	1.14	1.26	0.35			
Forage Blower	0.28	0.00	0.00	0.24	0.27	0.30	0.07			
No-Till Drill, 10'	0.47	0.00	0.00	5.05	1.91	3.15	0.24			
Total		\$ 14.17	\$ 2.13	\$ 17.88	\$ 34.18	\$ 11.85	\$ 15.14			
Total Machinery Cost						\$ 17.5	\$ 28.74			
							\$ 62.93			

Break-even Analysis			Yield/Acre	Price/Ton	Break-even Price
Below-Average Yield	Average Yield	Above-Average Yield			
Break-even Price over Total Variable Expenses:			2.8	tons	\$ 53.25
			5.0	tons	\$ 29.82
			7.2	tons	\$ 20.71
Break-even Price over Total Budgeted Expenses:					
			2.8	tons	\$ 70.96
			5.0	tons	\$ 39.73
			7.2	tons	\$ 27.59

Corn Silage, Traditional Establishment
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Seed ¹	23 Thousand Seeds	bag	0.28	\$ 100.75	\$ 28.21	_____
Fertilizer	N	lb	150.00	\$ 0.48	\$ 72.00	_____
	P2O5	lb	60.00	\$ 0.34	\$ 20.40	_____
	K2O	lb	120.00	\$ 0.23	\$ 27.60	_____
Lime ²	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
	Custom Application	ton	0.50	\$ 21.00	\$ 10.50	_____
Weed Control ³						
Pre-Emerge	Atrazine, 4L	pt	0.80	\$ 1.26	\$ 1.01	_____
	Bicep II Magnum	pt	4.80	\$ 5.65	\$ 27.12	_____
Post-Emerge	Accent	oz	0.67	\$ 34.94	\$ 23.41	_____
	Surfactant	pt	0.50	\$ 1.63	\$ 0.82	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Machinery						
Fuel		acre	1.00	\$ 16.23	\$ 16.23	_____
Oil & Filter		acre	1.00	\$ 2.43	\$ 2.43	_____
Repairs & Maintenance		acre	1.00	\$ 15.02	\$ 15.02	_____
Interest on Operating Capital	6 Months			acre \$ 254.74 8.0%	\$ 10.19	_____
					Total Variable Expenses	\$ 264.93
Fixed Expenses						
Machinery						
Depreciation		acre	1.00	\$ 12.76	\$ 12.76	_____
Interest		acre	1.00	\$ 14.97	\$ 14.97	_____
Housing & Insurance		acre	1.00	\$ 1.38	\$ 1.38	_____
					Total Fixed Expenses	\$ 29.10
Labor Expenses						
Labor ⁴		hour	2.42	\$ 8.50	\$ 20.53	_____
					Total Budgeted Expenses	\$ 314.57

Footnotes:

¹Plant population and rate of fertilization are directly related. A higher population probably should be fertilized at a higher rate.

²Lime is applied at the rate of 2 tons every 4 years.

³When other chemicals are used, calculate the appropriate costs for the chemical used. Rates are for medium-textured soils--use lower rates for sandy soils and higher rates for fine-textured or clay-type soils, check labels. Other herbicide combinations are available.

⁴Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

Corn Silage, Traditional Establishment
Estimated Machinery and Labor Requirements per Acre

Month	Operation	Power Unit		Implement		Hours per Acre	
		Tractor, 100 hp	Custom	Chisel Plow, 9'	Custom	Machine	Labor
Mar	Chisel	Tractor, 100 hp		Chisel Plow, 9'		0.22	0.27
Apr	Fertilize & Lime	Custom		Custom		---	---
Apr	Disk & Pre-Emerge (Atrazine & Bicep II Magnum)	Tractor, 100 hp	Disk, 12'	Boom Sprayer, 20'		0.17	0.21
Apr	Disk & Harrow	Tractor, 100 hp	Disk, 12'	Harrow, 10'		0.17	0.21
Apr	Plant	Tractor, 100 hp	Corn Planter, 4-row	Corn Planter, 4-row		0.25	0.31
May	Post-Emerge (Accent)	Custom	Custom	Forage Chopper	Corn Header, 2-row Forage Wagon #1	0.56	---
Sep	Harvest	Tractor, 100 hp	Forage Wagon #2	Forage Wagon #2		0.28	0.70
Sep	Haul	Tractor, 70 hp	Forage Blower	Forage Blower		0.28	0.35
Sep	Store	Tractor, 70 hp				Total	0.35
						Total	2.42

Estimated Machinery Expenses per Acre

Machine	Variable Cost			Fixed Cost			Total Fixed Costs
	Hours per Acre	Fuel	Oil & Filter	Repairs	Variable Costs	Depreciation	
Tractor, 100 hp	1.37	12.61	1.89	5.07	19.57	3.68	4.61
Tractor, 70 hp	0.56	3.61	0.54	1.19	5.35	0.72	0.86
Forage Chopper	0.56	0.00	0.00	3.03	3.03	1.50	1.72
Corn Header, 2-row	0.56	0.00	0.00	1.02	1.02	1.01	0.70
Chisel Plow, 9'	0.22	0.00	0.00	0.21	0.21	0.09	0.19
Disk, 12'	0.34	0.00	0.00	0.64	0.64	0.84	0.87
Harrow, 10'	0.17	0.00	0.00	0.07	0.07	0.06	0.06
Boom Sprayer, 20'	0.17	0.00	0.00	0.13	0.13	0.17	0.19
Corn Planter, 4-row	0.25	0.00	0.00	1.15	1.15	1.02	1.68
Forage Wagon #1	0.56	0.00	0.00	1.52	1.52	2.27	2.52
Forage Wagon #2	0.28	0.00	0.00	0.76	0.76	1.14	1.26
Forage Blower	0.28	0.00	0.00	0.24	0.24	0.27	0.30
Total Machinery Cost	\$ 16.23	\$ 2.43	\$ 15.02	\$ 33.68	\$ 12.76	\$ 14.97	\$ 1.38
							\$ 29.10
							\$ 62.78

Break-even Analysis

Yield/Acre	Price/Ton	Break-even		
		Below-Average Yield	Average Yield	Above-Average Yield
12.0	\$ 22.08	tons	tons	tons
15.0	\$ 17.66	tons	tons	tons
18.0	\$ 14.72	tons	tons	tons
Below-Average Yield	\$ 26.21			
Average Yield	\$ 20.97			
Above-Average Yield	\$ 17.48			

Corn Silage, No-Till Establishment
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Seed ¹	23 Thousand Seeds	bag	0.28	\$ 100.75	\$ 28.21	_____
Soil Insecticide	Force	lb	4.00	\$ 4.57	\$ 18.28	_____
Fertilizer	N	lb	150.00	\$ 0.48	\$ 72.00	_____
	P2O5	lb	60.00	\$ 0.34	\$ 20.40	_____
	K2O	lb	120.00	\$ 0.23	\$ 27.60	_____
Lime ²	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Weed Control ³	Custom Application	ton	0.50	\$ 21.00	\$ 10.50	_____
Burndown	Gramoxone Max	pt	2.00	\$ 4.91	\$ 9.82	_____
	Surfactant	pt	0.50	\$ 1.63	\$ 0.82	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Pre-Emerge	Atrazine, 4L	pt	0.80	\$ 1.26	\$ 1.01	_____
	Bicep II Magnum	pt	4.80	\$ 5.65	\$ 27.12	_____
Post-Emerge	Accent	oz	0.67	\$ 34.94	\$ 23.41	_____
	Surfactant	pt	0.50	\$ 1.63	\$ 0.82	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Machinery						
Fuel		acre	1.00	\$ 11.63	\$ 11.63	_____
Oil & Filter		acre	1.00	\$ 1.74	\$ 1.74	_____
Repairs & Maintenance		acre	1.00	\$ 11.86	\$ 11.86	_____
Interest on Operating Capital	6 Months			acre \$ 280.21 8.0%	\$ 11.21	_____
Total Variable Expenses						\$ 291.42
Fixed Expenses						
Machinery						
Depreciation		acre	1.00	\$ 10.04	\$ 10.04	_____
Interest		acre	1.00	\$ 11.57	\$ 11.57	_____
Housing & Insurance		acre	1.00	\$ 1.85	\$ 1.85	_____
Total Fixed Expenses						\$ 23.47
Labor Expenses						
Labor ⁴		hour	1.81	\$ 8.50	\$ 15.43	_____
Total Budgeted Expenses						\$ 330.31

Footnotes:

¹Plant population and rate of fertilization are directly related. A higher population probably should be fertilized at a higher rate.

²Lime is applied at the rate of 2 tons every 4 years.

³When other chemicals are used, calculate the appropriate costs for the chemical used. Rates are for medium-textured soils--use lower rates for sandy soils and higher rates for fine-textured or clay-type soils, check labels. Other herbicide combinations are available.

⁴Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

Corn Silage, No-Till Establishment
Estimated Machinery and Labor Requirements per Acre

Month	Operation	Power Unit	Implement	Hours per Acre
Mar	Burndown (Gramoxone Max)	Custom	Custom	--
Apr	Fertilize & Lime	Custom	Custom	--
Apr	Plant & Soil Insecticide	Tractor, 100 hp	No-Till Corn Planter, 4-row	0.26 0.33
Apr	Pre-Emerge (Atrazine & Bicep II)	Tractor, 70 hp	Boom Sprayer, 20'	0.07 0.08
May	Post-Emerge (Accent)	Custom	Custom	--
May	Harvest	Tractor, 100 hp	Forage Chopper Corn Header, 2-row	0.56 0.70
Sep	Haul	Tractor, 70 hp	Forage Wagon #1	0.28 0.35
Sep	Store	Tractor, 70 hp	Forage Blower	0.28 0.35
			Total	1.81

Machine	Estimated Machinery Expenses per Acre					Total Fixed Cost	Housing & Insurance	Total Fixed Costs			
	Hours per Acre	Variable Cost		Depreciation	Interest						
		Fuel	Oil & Filter								
Tractor, 100 hp	0.83	\$ 7.59	1.14	3.05	11.79	2.21	2.77	0.07 5.06			
Tractor, 70 hp	0.63	4.03	0.60	1.33	5.97	0.80	0.96	0.06 1.82			
Forage Chopper	0.56	0.00	0.00	3.03	3.03	1.50	1.72	0.21 3.43			
Corn Header, 2-row	0.56	0.00	0.00	1.02	1.02	1.01	1.01	0.70 1.86			
Boom Sprayer, 20'	0.07	0.00	0.00	0.05	0.05	0.06	0.07	0.08 0.22			
No-Till Corn Planter, 4-row	0.26	0.00	0.00	0.87	0.87	0.77	1.27	0.35 2.38			
Forage Wagon #1	0.56	0.00	0.00	1.52	1.52	2.27	2.52	0.45 5.25			
Forage Wagon #2	0.28	0.00	0.00	0.76	0.76	1.14	1.26	0.40 2.80			
Forage Blower	0.28	0.00	0.00	0.24	0.24	0.27	0.30	0.08 0.66			
Total Machinery Cost		\$ 11.63	\$ 1.74	\$ 11.86	\$ 25.23	\$ 10.04	\$ 11.57	\$ 1.85 \$ 23.47 \$ 48.70			

Break-even Analysis

Yield/Acre	Break-even Price/Ton		
	Below-Average Yield	Average Yield	Above-Average Yield
	tons	tons	tons
12.0	15.0	18.0	\$ 24.28 \$ 19.43 \$ 16.19
Below-Average Yield	12.0 tons	15.0 tons	18.0 tons
Average Yield			
Above-Average Yield			
			\$ 27.53 \$ 22.02 \$ 18.35

Bermudagrass, Traditional Establishment, Seeded
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Seed	Bermudagrass	lb	10.00	\$ 5.92	\$ 59.15	_____
Fertilizer	N	lb	60.00	\$ 0.48	\$ 28.80	_____
	P2O5	lb	40.00	\$ 0.34	\$ 13.60	_____
	K2O	lb	40.00	\$ 0.23	\$ 9.20	_____
Lime	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Machinery	Custom Application	ton	2.00	\$ 21.00	\$ 42.00	_____
Fuel		acre	1.00	\$ 14.62	\$ 14.62	_____
Oil & Filter		acre	1.00	\$ 2.19	\$ 2.19	_____
Repairs & Maintenance		acre	1.00	\$ 8.69	\$ 8.69	_____
Interest on Operating Capital	6 Months	acre	\$ 183.25	8.0%	\$ 7.33	_____
Total Variable Expenses					\$ 190.58	_____
Fixed Expenses						
Machinery		acre	1.00	\$ 5.71	\$ 5.71	_____
Depreciation		acre	1.00	\$ 7.61	\$ 7.61	_____
Interest		acre	1.00	\$ 0.62	\$ 0.62	_____
Housing & Insurance		acre	1.00			_____
Total Fixed Expenses					\$ 13.94	_____
Labor Expenses						
Labor ¹		hour	1.99	\$ 8.50	\$ 16.89	_____
Total Establishment Expenses					\$ 221.41	_____
Prorated Share		years	10.00	8.0%	\$ 33.00	_____

Footnotes:

¹Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

**Bermudagrass, Traditional Establishment, Seeded
Estimated Machinery and Labor Requirements per Acre**

Month	Operation	Power Unit	Implement	Hours per Acre
			Machine	Labor
May	Fertilize & Lime	Custom	Custom	---
May	Plow	Tractor, 100 hp	Plow, 4-Bottom	0.59 0.74
May	Disk	Tractor, 100 hp	Disk, 12'	0.17 0.21
May	Cultipacker	Tractor, 100 hp	Cultipacker-Seeder, 10'	0.28 0.35
May	Cultipacker-Seeder	Tractor, 100 hp	Cultipacker-Seeder, 10'	0.28 0.35
Jul	Fertilize	Custom	Custom	---
Jul	Mow	Tractor, 100 hp	Rotary Mower, 10'	0.26 0.32
Total				1.99

Machine	Estimated Machinery Expenses per Acre					Total Fixed Costs	
	Hours per Acre	Variable Cost		Total Variable Costs	Fixed Cost		
		Fuel	Oil & Filter				
Tractor, 100 hp	1.59	14.62	2.19	5.88	22.69	4.26	
Plow, 4-Bottom	0.59	0.00	0.00	0.66	0.24	0.54	
Disk, 12'	0.17	0.00	0.00	0.32	0.42	0.44	
6' Cultipacker-Seeder, 10'	0.57	0.00	0.00	0.95	0.53	0.87	
Rotary Mower, 10'	0.26	0.00	0.00	0.88	0.27	0.43	
Total		\$ 14.62	\$ 2.19	\$ 8.69	\$ 25.50	\$ 5.71	
Total Machinery Cost							
\$ 39.44							

Bermudagrass, No-Till Establishment, Seeded
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Seed	Bermudagrass	lb	10.00	\$ 5.92	\$ 59.15	_____
No-Till Drill, Rental		acre	1.00	\$ 8.00	\$ 8.00	_____
Fertilizer	N	lb	60.00	\$ 0.48	\$ 28.80	_____
	P2O5	lb	40.00	\$ 0.34	\$ 13.60	_____
	K2O	lb	40.00	\$ 0.23	\$ 9.20	_____
Lime	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Weed Control	Custom Application	ton	2.00	\$ 21.00	\$ 42.00	_____
Burndown ¹	Gramoxone Max	pt	1.50	\$ 4.91	\$ 7.37	_____
	Surfactant	pt	0.50	\$ 1.63	\$ 0.82	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Machinery						
Fuel		acre	1.00	\$ 6.70	\$ 6.70	_____
Oil & Filter		acre	1.00	\$ 1.00	\$ 1.00	_____
Repairs & Maintenance		acre	1.00	\$ 3.58	\$ 3.58	_____
Interest on Operating Capital	6 Months	acre	\$ 190.21	8.0%	\$ 7.61	_____
				Total Variable Expenses	\$ 197.81	_____
Fixed Expenses						
Machinery						
Depreciation		acre	1.00	\$ 2.22	\$ 2.22	_____
Interest		acre	1.00	\$ 2.88	\$ 2.88	_____
Housing & Insurance		acre	1.00	\$ 0.19	\$ 0.19	_____
				Total Fixed Expenses	\$ 5.29	_____
Labor Expenses						
Labor ²		hour	0.91	\$ 8.50	\$ 7.73	_____
				Total Establishment Expenses	\$ 210.84	_____
Prorated Share		years	10.00	10.0%	\$ 34.31	_____

Footnotes:

¹Other herbicides may also be required, depending on the weeds present prior to establishment.

²Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

Bermudagrass, No-Till Establishment, Seeded
Estimated Machinery and Labor Requirements per Acre

Month	Operation	Power Unit	Implement	Machine	Hours per Acre Labor
Apr	Burndown (Gramoxone Max)	Custom	Custom	---	---
May	Fertilize & Lime	Custom	Custom	---	---
May	Plant	Tractor, 100 hp	No-Till Drill, Rental	0.47	0.59
Jul	Fertilize	Custom	Custom	---	---
Jul	Mow	Tractor, 100 hp	Rotary Mower, 10'	0.26	0.32
			Total	0.91	Total 0.91

Estimated Machinery Expenses per Acre						
Machine	Hours per Acre	Variable Cost		Fixed Cost		Total Fixed Costs
		Fuel	Oil & Filter	Repairs	Depreciation	
Tractor, 100 hp	0.73	6.70	1.00	2.69	10.39	1.95
Rotary Mower, 10'	0.26	0.00	0.00	0.88	0.27	0.43
Total		\$ 6.70	\$ 1.00	\$ 3.58	\$ 11.28	\$ 2.22
Total Machinery Cost						\$ 16.56

Bermudagrass, Clipping Establishment
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Clippings ¹	Bermudagrass--Vaughn's #1	acre	1.00	\$ 160.00	\$ 160.00	_____
Fertilizer N		lb	60.00	\$ 0.48	\$ 28.80	_____
	P2O5	lb	40.00	\$ 0.34	\$ 13.60	_____
	K2O	lb	40.00	\$ 0.23	\$ 9.20	_____
Lime	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Machinery	Custom Application	ton	2.00	\$ 21.00	\$ 42.00	_____
Fuel		acre	1.00	\$ 13.10	\$ 13.10	_____
Oil & Filter		acre	1.00	\$ 1.97	\$ 1.97	_____
Repairs & Maintenance		acre	1.00	\$ 7.46	\$ 7.46	_____
Interest on Operating Capital	6 Months	acre	\$ 281.13	8.0%	\$ 11.25	_____
				Total Variable Expenses	\$ 292.37	_____
Fixed Expenses						
Machinery						
Depreciation		acre	1.00	\$ 5.41	\$ 5.41	_____
Interest		acre	1.00	\$ 6.91	\$ 6.91	_____
Housing & Insurance		acre	1.00	\$ 0.60	\$ 0.60	_____
				Total Fixed Expenses	\$ 12.93	_____
Labor Expenses						
Labor ²		hour	1.78	\$ 8.50	\$ 15.14	_____
				Total Establishment Expenses	\$ 320.44	_____
Prorated Share		years	10.00	8.0%	\$ 47.75	_____

Footnotes:

¹Established through clippings, the cost will be prorated over 10 years.

²Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

**Bermudagrass, Clipping Establishment
Estimated Machinery and Labor Requirements per Acre**

Month	Operation	Power Unit	Implement	Hours per Acre
			Machine	Labor
May	Fertilize & Lime	Custom	Custom	---
May	Plow	Tractor, 100 hp	Plow, 4-Bottom	0.59 0.74
May	Disk	Tractor, 100 hp	Disk, 12'	0.17 0.21
May	Manure Spreader	Tractor, 100 hp	Manure Spreader	0.23 0.29
May	Disk	Tractor, 100 hp	Disk, 12'	0.17 0.21
Jul	Fertilize	Custom	Custom	---
Jul	Mow	Tractor, 100 hp	Rotary Mower, 10'	0.26 0.32
Total				1.78

Machine	Estimated Machinery Expenses per Acre					Total Fixed Costs	
	Hours per Acre	Variable Cost		Total Variable Costs	Fixed Cost		
		Fuel	Oil & Filter				
Tractor, 100 hp	1.42	13.10	1.97	5.27	20.33	3.82	
Plow, 4-Bottom	0.59	0.00	0.00	0.66	0.24	0.54	
Disk, 12'	0.34	0.00	0.00	0.64	0.84	0.87	
Manure Spreader	0.23	0.00	0.00	0.01	0.25	0.28	
Rotary Mower, 10'	0.26	0.00	0.00	0.88	0.27	0.43	
Total		\$ 13.10	\$ 1.97	\$ 7.46	\$ 22.53	\$ 5.41	
Total Machinery Cost							
						\$ 35.46	

Bermudagrass, Hay
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Fertilizer ¹	N	lb	240.00	\$ 0.48	\$ 115.20	_____
	P2O5	lb	60.00	\$ 0.34	\$ 20.40	_____
	K2O	lb	180.00	\$ 0.23	\$ 41.40	_____
Lime	Custom Application	acre	4.00	\$ 5.00	\$ 20.00	_____
Twine	Custom Application	ton	0.67	\$ 21.00	\$ 14.07	_____
Weed Control		bale	160.00	\$ 0.04	\$ 6.62	_____
Dormant	Gramoxone Max	pt	1.50	\$ 4.91	\$ 7.37	_____
	Surfactant	pt	0.50	\$ 1.63	\$ 0.82	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Post-Emerge	Cimarron	oz	0.20	\$ 21.90	\$ 4.38	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Machinery						
Fuel		acre	1.00	\$ 27.89	\$ 27.89	_____
Oil & Filter		acre	1.00	\$ 4.18	\$ 4.18	_____
Repairs & Maintenance		acre	1.00	\$ 26.33	\$ 26.33	_____
Interest on Operating Capital	6 months	acre	\$ 298.65	8.0%	\$ 11.95	_____
				Total Variable Expenses	\$ 310.60	_____
Fixed Expenses						
Establishment Cost	Prorated over 10 years	acre	1.00	\$ 33.00	\$ 33.00	_____
Machinery						
Depreciation		acre	1.00	\$ 19.62	\$ 19.62	_____
Interest		acre	1.00	\$ 24.27	\$ 24.27	_____
Housing & Insurance		acre	1.00	\$ 2.51	\$ 2.51	_____
				Total Fixed Expenses	\$ 79.40	_____
Labor Expenses						
Labor ²		hour	5.42	\$ 8.50	\$ 46.03	_____
				Total Budgeted Expenses	\$ 436.02	_____

Footnotes:

¹60 lbs of nitrogen applied in April, May, June, and July. Hybrids may require higher application rates.

²Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

Bermudagrass, Hay
Estimated Machinery and Labor Requirements per Acre

Month	Operation	Power Unit	Implement	Hours per Acre
			Machine	Labor
Mar	Lime	Custom	Custom	---
Mar	Dormant (Gramoxone Max)	Custom	Custom	---
Apr	Fertilize	Custom	Custom	---
May	Mow	Tractor, 70 hp	Mower-Conditioner, 9'	0.37
May	Rake	Tractor, 70 hp	Rake, 18'	0.19
May	Bale	Tractor, 70 hp	Baler, Square	0.35
May	Stack	Tractor, 70 hp	Bale Wagon, Pull Type	0.17
May	Fertilize	Custom	Custom	---
Jun	Post-Emerge (Cimarron)	Custom	Custom	---
Jun	Mow	Tractor, 70 hp	Mower-Conditioner, 9'	0.37
Jun	Rake	Tractor, 70 hp	Rake, 18'	0.19
Jun	Bale	Tractor, 70 hp	Baler, Square	0.35
Jun	Stack	Tractor, 70 hp	Bale Wagon, Pull Type	0.22
Jun	Fertilize	Custom	Custom	---
Jul	Mow	Tractor, 70 hp	Mower-Conditioner, 9'	0.37
Jul	Rake	Tractor, 70 hp	Rake, 18'	0.19
Jul	Bale	Tractor, 70 hp	Baler, Square	0.35
Jul	Stack	Tractor, 70 hp	Bale Wagon, Pull Type	0.22
Jul	Fertilize	Custom	Custom	---
Sep	Mow	Tractor, 70 hp	Mower-Conditioner, 9'	0.37
Sep	Rake	Tractor, 70 hp	Rake, 18'	0.19
Sep	Bale	Tractor, 70 hp	Baler, Square	0.35
Sep	Stack	Tractor, 70 hp	Bale Wagon, Pull Type	0.22
Total				5.42

Machine	Estimated Machinery Expenses per Acre					Total Fixed Cost	Housing & Insurance	Total Fixed Costs			
	Hours per Acre	Variable Cost		Total	Fixed Cost						
		Fuel	Oil & Filter								
Tractor, 70 hp	4.33	27.89	4.18	9.19	41.27	5.56	6.61	0.50			
Mower-Conditioner, 9'								12.67			
Rake, 18'								11.23			
Baler, Square								1.08			
Bale Wagon, Pull Type								13.73			
Total		\$ 27.89	\$ 4.18	\$ 26.33	\$ 58.40	\$ 19.62	\$ 24.27	\$ 2.51			
Total Machinery Cost								\$ 104.80			

Break-even Analysis

Yield/Acre	2.0 tons	Break-even Price/Ton
Below-Average Yield	4.0 tons	\$ 155.30
Average Yield	6.0 tons	\$ 77.65
Above-Average Yield	6.0 tons	\$ 51.77
Below-Average Yield	2.0 tons	\$ 218.01
Average Yield	4.0 tons	\$ 109.01
Above-Average Yield	6.0 tons	\$ 72.67

Break-even Price over Total Variable Expenses:

Break-even Price over Total Budgeted Expenses:

Bermudagrass, Intensive Grazing
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Fertilizer ¹	N	lb	120.00	\$ 0.48	\$ 57.60	_____
	P2O5	lb	40.00	\$ 0.34	\$ 13.60	_____
	K2O	lb	80.00	\$ 0.23	\$ 18.40	_____
Lime ²	Custom Application	acre	2.00	\$ 5.00	\$ 10.00	_____
Weed Control	Custom Application	ton	0.33	\$ 21.00	\$ 6.93	_____
Dormant	Gramoxone Max	pt	1.50	\$ 4.91	\$ 7.37	_____
	Surfactant	pt	0.50	\$ 1.63	\$ 0.82	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Post-Emerge	Cimarron	oz	0.20	\$ 21.90	\$ 4.38	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Machinery						
Fuel		acre	1.00	\$ 3.32	\$ 3.32	_____
Oil & Filter		acre	1.00	\$ 0.50	\$ 0.50	_____
Repairs & Maintenance		acre	1.00	\$ 2.86	\$ 2.86	_____
Fence Repairs		acre	1.00	\$ 6.86	\$ 6.86	_____
Interest on Operating Capital	6 months					
		acre	\$ 142.63	8.0%	\$ 5.71	_____
				Total Variable Expenses	\$ 148.34	_____
Fixed Expenses						
Establishment Cost	Prorated over 10 years	acre	1.00	\$ 33.00	\$ 33.00	_____
Machinery						
Depreciation		acre	1.00	\$ 1.19	\$ 1.19	_____
Interest		acre	1.00	\$ 1.65	\$ 1.65	_____
Housing & Insurance		acre	1.00	\$ 0.19	\$ 0.19	_____
Fencing						
Depreciation	Perimeter Fence	acre	1.00	\$ 6.94	\$ 6.94	_____
Depreciation	Divider Fence	acre	1.00	\$ 6.50	\$ 6.50	_____
Interest	Perimeter Fence	acre	1.00	\$ 5.56	\$ 5.56	_____
Interest	Divider Fence	acre	1.00	\$ 1.30	\$ 1.30	_____
				Total Fixed Expenses	\$ 56.33	_____
Labor Expenses						
Labor ^{3,4}		hour	0.64	\$ 8.50	\$ 5.48	_____
				Total Budgeted Expenses	\$ 210.14	_____

Footnotes:

¹60 lbs of nitrogen applied in April and an additional 60 lbs applied in the summer.

²Lime is applied at the rate of 1 ton every 3 years.

³Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

⁴Labor for managing livestock grazing is not included in this budget. Hours devoted to moving cattle and fences should be included in livestock enterprise analyses.

**Bermudagrass, Intensive Grazing
Estimated Machinery and Labor Requirements per Acre**

Month	Operation	Power Unit	Implement	Machine Hours per Acre	Labor
Mar	Lime	Custom	Custom	---	---
	Dormant (Gramoxone Max)	Custom	Custom	---	---
Mar	Fertilize	Custom	Custom	---	---
Apr	Post-Emerge (Cimarron)	Custom	Custom	---	---
Jun	Mow	Tractor, 70 hp	Rotary Mower, 10'	0.26	0.32
Jul	Fertilize	Custom	Custom	---	---
Jul	Mow	Tractor, 70 hp	Rotary Mower, 10'	0.26	0.32
Sep				Total	0.64

Estimated Machinery Expenses per Acre						
Machine	Hours per Acre	Variable Cost			Total Fixed Cost	
		Fuel	Oil & Filter	Repairs	Interest	Housing & Insurance
Tractor, 70 hp	0.52	3.32	0.50	1.09	4.91	0.66
Rotary Mower, 10'	0.52	0.00	0.00	1.77	1.77	0.53
Total		\$ 3.32	\$ 0.50	\$ 2.86	\$ 6.68	\$ 1.19
Total Machinery Cost						\$ 9.71

Grain Sorghum, Silage, No-Till Establishment
Estimated Expenses per Acre

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Your Farm
Variable Expenses						
Seed ¹	Grain Sorghum	lb	12.00	\$ 1.20	\$ 14.40	_____
Fertilizer	N	lb	90.00	\$ 0.48	\$ 43.20	_____
	P2O5	lb	60.00	\$ 0.34	\$ 20.40	_____
	K2O	lb	120.00	\$ 0.23	\$ 27.60	_____
Lime ²	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Weed Control	Custom Application	ton	0.50	\$ 21.00	\$ 10.50	_____
Burndown	Gramoxone Max	pt	1.50	\$ 4.91	\$ 7.37	_____
	Surfactant	pt	0.50	\$ 1.63	\$ 0.82	_____
	Custom Application	acre	1.00	\$ 5.00	\$ 5.00	_____
Pre-Emerge	Bicep II Magnum	pt	3.60	\$ 5.65	\$ 20.34	_____
	Atrazine, 4L	pt	0.40	\$ 1.26	\$ 0.50	_____
Machinery						
Fuel		acre	1.00	\$ 11.21	\$ 11.21	_____
Oil & Filter		acre	1.00	\$ 1.68	\$ 1.68	_____
Repairs & Maintenance		acre	1.00	\$ 11.67	\$ 11.67	_____
Interest on Operating Capital	6 Months					
		acre	\$ 179.69	8.0%	\$ 7.19	_____
					Total Variable Expenses	\$ 186.87 _____
Fixed Expenses						
Machinery						
Depreciation		acre	1.00	\$ 9.89	\$ 9.89	_____
Interest		acre	1.00	\$ 11.40	\$ 11.40	_____
Housing & Insurance		acre	1.00	\$ 0.98	\$ 0.98	_____
					Total Fixed Expenses	\$ 22.28 _____
Labor Expenses						
Labor ³		hour	1.73	\$ 8.50	\$ 14.74	_____
					Total Budgeted Expenses	\$ 223.89 _____

Footnotes:

¹Use tall, high-grain-yielding varieties (performer 1330) that are herbicide-tolerant.

²Lime is applied at the rate of 2 tons every 4 years.

³Labor expense is \$8.50 per hour, including wages, Social Security and Medicaid taxes and payroll administration costs.

Grain Sorghum, Silage, No-Till Establishment
Estimated Expenses per Acre

Month	Operation	Power Unit	Implement	Machine	Hours per Acre	Labor
Jun	Burndown (Gramoxone Max)	Custom	Custom	---	---	---
Jun	Fertilize & Lime	Custom	Custom	---	---	---
Jun	Plant	Tractor, 100 hp	No-Till Corn Planter, 4-row	0.26	0.33	
Jun	Pre-Emerge (Bicep II Magnum)	Custom	Custom	---	---	
Chop	Tractor, 100 hp	Forage Chopper	Corn Header, 2-row	0.56	0.70	
Haul	Tractor, 70 hp	Forage Wagon #2	Forage Wagon #1	0.28	0.35	
Store	Tractor, 70 hp	Forage Blower	Forage Blower	0.28	0.35	
			Total	1.73		

Machine	Estimated Machinery Expenses per Acre					
	Hours per Acre	Variable Cost		Fixed Cost		
		Fuel	Oil & Filter	Repairs	Depreciation	Interest
Tractor, 100 hp	0.83	7.59	1.14	3.05	11.79	2.21
Tractor, 70 hp	0.56	3.61	0.54	1.19	5.35	0.72
Forage Chopper	0.56	0.00	0.00	0.00	3.03	1.50
Com Header, 2-row	0.56	0.00	0.00	0.02	1.02	1.01
No-Till Corn Planter, 4-row	0.26	0.00	0.00	0.87	0.87	0.77
Forage Wagon #1	0.56	0.00	0.00	1.52	1.52	2.27
Forage Wagon #2	0.28	0.00	0.00	0.76	0.76	1.14
Forage Blower	0.28	0.00	0.00	0.24	0.24	0.27
Total		\$ 11.21	\$ 1.68	\$ 11.67	\$ 24.56	\$ 9.89
Total Machinery Cost						\$ 22.28
						\$ 46.84

Break-even Analysis

Yield/Acre	Break-even Price/Ton		
	Below-Average Yield	Average Yield	Above-Average Yield
	4.0 tons	8.0 tons	12.0 tons
Below-Average Yield	\$ 46.72	\$ 23.36	\$ 15.57
Average Yield			
Above-Average Yield			

Break-even Price over Total Variable Expenses:

Yield/Acre

Below-Average Yield

Average Yield

Above-Average Yield

Break-even Price over Total Budgeted Expenses:

Price/Ton

Below-Average Yield

Average Yield

Above-Average Yield

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