

**Cool Season Grass, Hay, Square Bale
Estimated Expenses per Acre^{1,2}**

Item	Description	Unit	Quantity	Price	Amount (\$/acre)	Amount (\$/ton)	Amount (\$/bale)	Square Square 50
Income								
Hay	Orchardgrass	ton	3.00	\$400.00	\$ 1,200.00	\$ 400.00	\$ 10.00	
Expenses								
Prorated Establishment Costs		acre	0.17	\$270.88	\$ 45.15	\$ 15.05	\$ 0.38	
Fertilizer	N ³	lb	120.00	\$ 0.60	\$ 71.84	\$ 23.95	\$ 0.60	
	P2O5	lb	30.00	\$ 0.61	\$ 18.41	\$ 6.14	\$ 0.15	
	K2O	lb	30.00	\$ 0.41	\$ 12.26	\$ 4.09	\$ 0.10	
	Custom Application	acre	2.00	\$ 12.71	\$ 25.42	\$ 8.47	\$ 0.21	
Lime & Application ^{4,5}	Custom Application	ton	0.33	\$ 43.63	\$ 14.40	\$ 4.80	\$ 0.12	
	Herbicide Application	acre	1.00	\$ 12.30	\$ 12.30	\$ 4.10	\$ 0.10	
Post-Emerge ⁶	Custom Application	acre	1.00	\$ 11.81	\$ 11.81	\$ 3.94	\$ 0.10	
Pest Control	Pest Control Application	acre		\$ 6.51	\$ -	\$ -	\$ -	
	Custom Application	acre		\$ 11.81	\$ -	\$ -	\$ -	
Total Variable Expenses					\$ 211.58	\$ 70.53	\$ 1.76	
Return over Variable Expenses					\$ 988.42	\$ 329.47	\$ 8.24	
Custom Machinery Cost								
Disk Mowing		cutting	2	\$ 16.50	\$ 33.00	\$ 11.00	\$ 0.28	
Tedding		cutting	2	\$ 6.67	\$ 13.34	\$ 4.45	\$ 0.11	
Raking		cutting	2	\$ 8.67	\$ 17.34	\$ 5.78	\$ 0.14	
Baling		cutting	2	\$ 1.09	\$ 130.80	\$ 43.60	\$ 1.09	
Hauling		bale	120.00	\$ 0.75	\$ 90.00	\$ 30.00	\$ 0.75	
Total Custom Machinery Cost					\$ 284.48	\$ 94.83	\$ 2.37	
Interest on Operating Capital	6 months	acre	\$ 211.58	8.0%	\$ 8.46	\$ 2.82	\$ 0.07	
Cash Rent		acre	1		\$ -	\$ -	\$ -	
Storage								
Fixed Cost	Hay Barn	bale	120.00	\$ 0.23	\$ 27.45	\$ 9.15	\$ 0.23	
Shrinkage Loss ⁷		annual	3.5%		\$ 17.66	\$ 5.89	\$ 0.15	
Total Storage Cost					\$ 45.11	\$ 15.04	\$ 0.38	
Total Budgeted Expenses					\$ 549.63	\$ 183.21	\$ 4.58	
Return to Land & Management					\$ 650.37	\$ 216.79	\$ 5.42	

**Cool Season Grass, Establishment
Estimated Expenses per Acre**

Item	Description	Unit	Quantity	Price	Amount (\$/acre)
Expenses					
Burndown	Burndown	acre	1.00	\$ 15.66	\$ 15.66
Seed Fertilizer	Orchardgrass	lb	12.50	\$ 3.02	\$ 37.75
	N	lb	30.00	\$ 0.60	\$ 17.96
	P2O5	lb	60.00	\$ 0.61	\$ 36.81
	K2O	lb	60.00	\$ 0.41	\$ 24.53
	Custom Application	acre	1.00	\$ 12.71	\$ 12.71
Lime & Application	Custom Application	ton	2.00	\$ 43.63	\$ 87.26
Total Variable Expenses					\$ 232.68
Custom Machinery Cost					
Spraying		acre	1	\$ 11.81	\$ 11.81
No-till Drill		acre	1	\$ 17.08	\$ 17.08
Total Custom Machinery Cost					\$ 28.89
Interest on Operating Capital	6 months	acre	\$ 232.68	8.0%	\$ 9.31
Total Budgeted Expenses					\$ 270.88

**Establishment
Prorated Over
Years
6⁸**

Cool Season Grass, Hay- Orchardgrass

Sensitivity Analysis

Sensitivity Analysis

Return Above Variable Expenses

	Price (\$/ton)				
	\$ 350.00	\$ 375.00	\$ 400.00	\$ 425.00	\$ 450.00
2.0	\$ 488.42	\$ 538.42	\$ 588.42	\$ 638.42	\$ 688.42
2.5	\$ 663.42	\$ 725.92	\$ 788.42	\$ 850.92	\$ 913.42
3.0	\$ 838.42	\$ 913.42	\$ 988.42	\$ 1,063.42	\$ 1,138.42
3.5	\$ 1,013.42	\$ 1,100.92	\$ 1,188.42	\$ 1,275.92	\$ 1,363.42
4.0	\$ 1,188.42	\$ 1,288.42	\$ 1,388.42	\$ 1,488.42	\$ 1,588.42

Yield
(ton)

	Yield	Variable (per bale)	Total Costs (per bale)
	1.7	\$3.13	\$8.14
	2.3	\$2.35	\$6.11
	3.0	\$1.76	\$4.58
	3.8	\$1.41	\$3.66
	4.7	\$1.13	\$2.93

Return Above Fixed Expenses

	Price (\$/ton)				
	\$ 350.00	\$ 375.00	\$ 400.00	\$ 425.00	\$ 450.00
2.0	\$ 150.37	\$ 200.37	\$ 250.37	\$ 300.37	\$ 350.37
2.5	\$ 325.37	\$ 387.87	\$ 450.37	\$ 512.87	\$ 575.37
3.0	\$ 500.37	\$ 575.37	\$ 650.37	\$ 725.37	\$ 800.37
3.5	\$ 675.37	\$ 762.87	\$ 850.37	\$ 937.87	\$ 1,025.37
4.0	\$ 850.37	\$ 950.37	\$ 1,050.37	\$ 1,150.37	\$ 1,250.37

Yield
(ton)

Return Above Fixed Expenses

	Price (\$/bale)				
	\$ 8.00	\$ 9.00	\$ 10.00	\$ 11.00	\$ 12.00
116.0	\$ 3.26	\$ 4.26	\$ 5.26	\$ 6.26	\$ 7.26
118.0	\$ 3.34	\$ 4.34	\$ 5.34	\$ 6.34	\$ 7.34
120.0	\$ 3.42	\$ 4.42	\$ 5.42	\$ 6.42	\$ 7.42
122.0	\$ 3.49	\$ 4.49	\$ 5.49	\$ 6.49	\$ 7.49
124.0	\$ 3.57	\$ 4.57	\$ 5.57	\$ 6.57	\$ 7.57

Yield
(bale)

Cool Season Grass and Cool Season Grass and Clover Assumptions

1. The budget is based on custom rates for machinery processes. Labor, operating, maintenance, and ownership costs are included in these rates. The baling rate includes binding.
2. The budget is based on no-till establishment.
3. Sixty pounds of nitrogen will be applied in March, with the remainder applied during the growing season. If clover is included, it is assumed that 60 pounds of nitrogen will come from the clover.
4. Lime prorated at one ton over three years.
5. For a more accurate fertilizer and lime recommendation, take a soil sample. ([Instructions on how to take a soil sample.](#))
6. The post-emergence weed control is based on an average of three common practices. Burndown is a common practice. For weed control and/or burndown recommendations, contact the county Extension office. ([County office contact information.](#))
7. Storage loss is based on an average of multiple studies.
8. Establishment pro-rated expenses for hay are set for six years.