

# NC STATE UNIVERSITY

**Pearl Millet or Sorghum-Sudan for temporary pasture:** Estimated annual revenue, operating cost, fixed cost and net returns per acre (No-till).

Budget 88-8  
July-08

Description	Unit	Price	Quantity	Value	Your Farm
<b>Operating inputs</b>					
-Lime, applied, pro-rated share	Ton	\$38.00	0.33	\$12.65	
-10-20-20, dry bulk	Cwt.	\$30.70	3.00	92.10	
-30% N Solution	Cwt.	\$19.75	4.00	79.00	
-Fert. Spread, custom	Ton	\$1.75	7.00	12.25	
-Seed	lb.	\$0.75	20.00	15.00	
-Herbicide, burndown	Acre	\$6.50	1.00	6.50	
-Other:				0.00	
-Other:				0.00	
-Machinery Labor (From Table 2)				8.90	
-Other Labor	Hours	\$9.00	0.00	0.00	
-Machinery Fuel, Maint, Repairs (Table 2)	Acre			11.60	
-Annual Operating Capital	\$	7.5%	59.50	4.46	
<b>Total Operating Costs</b>				<b>\$242.47</b>	
			<b>Amount</b>	<b>Value</b>	
<b>Fixed Costs</b>					
-Machinery Depreciation, Taxes, Insurance, and Interest (From Table 1)				9.98	
<b>Total Cost</b>				<b>\$252.46</b>	
	<b>Unit</b>	<b>Price<sup>b</sup></b>	<b>Quantity</b>	<b>Value</b>	
<b>Production</b>					
-Harvested as Pasture, Dry Matter	Ton	\$0.00	2.50	0.00	
<b>Total Receipts</b>				<b>\$0.00</b>	
<b>RETURNS ABOVE TOTAL OPERATING COST</b>				<b>-\$242.47</b>	
<b>RETURNS ABOVE ALL SPECIFIED COSTS<sup>c</sup></b>				<b>-\$252.46</b>	
<b>AVERAGE COST PER TON OF DRY MATTER<sup>d</sup></b>				<b>\$100.98</b>	

<sup>a</sup> Interest on operating expenses for an average of 3 months.

<sup>b</sup> Only place a value on pasture if it is rented out.

<sup>c</sup> This is the cost of grazing per acre = Total annual cost LESS the value of any pasture rented out.

<sup>d</sup> Total cost divided by total dry matter produced

## NOTES

Pasture typically is 20 to 25% dry matter, 65% digestible and provides 1300 pounds of TDN per ton of dry matter. Each ton of pasture dry matter typically provides 86 animal unit days of grazing. A beef cow = 1 AU. Budget does not include cost of managing grazing livestock.

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**Table 1. Initial investment in specialized equipment and annual ownership expenses**

Operation and Item	Life	Initial Cost	Salvage Value	Depreciation <sup>a</sup>	Interest <sup>b</sup>	Tax & Ins. <sup>c</sup>	Annual D.I.T.I.	Annual Use	D.I.T.I. per Hour	Acres per Hour	Expense per Acre <sup>d</sup>	Times Over <sup>e</sup>	Total Expense
	Years	\$	\$	\$	\$	\$	\$	Hours	\$	No.	\$	No.	\$/Acre
Rate Charged, percent =====>					7.50%	0.14%							
Land preparation													
Tractor, HP=	55	20,500	6,355	1,415	1,007	29	2,450	500	4.90	3.5	1.40	0	0.00
+ Chisel plow	20	3,050	1,007	102	152	4	259	100	2.59	3.5	0.74	0	0.00
Tractor, HP=	35	16,500	5,115	1,139	811	23	1,972	500	3.94	5.4	0.73	0	0.00
+ Disc	20	4,050	1,215	142	197	6	345	100	3.45	5.4	0.64	0	0.00
Tractor, HP=	35	16,500	5,115	1,139	811	23	1,972	500	3.94	5.4	0.73	0	0.00
+ Harrow	20	1,375	413	48	67	2	117	100	1.17	5.4	0.22	0	0.00
Spraying													
Tractor, HP=	35	16,500	5,115	1,139	811	23	1,972	500	3.94	11.1	0.36	1	0.36
+ Sprayer	15	3,700	1,480	148	194	5	347	80	4.34	11.1	0.39	1	0.39
Planting													
Tractor, HP=	55	20,500	6,355	1,415	1,007	29	2,450	500	4.90	3.8	1.29	1	1.29
+ No-till Planter	12	12,450	4,980	623	654	17	1,294	100	12.94	3.8	3.40	1	3.40
Pasture Clipping													
Tractor	55	20,500	6,355	1,415	1,007	29	2,450	500	4.90	3.7	1.32	1	1.32
+ Bushhog	10	2,175	653	152	106	3	261	100	2.61	3.7	0.71	1	0.71
Other													
Pickup Truck, 3/4 Ton	10	25,600	6,656	1,894	1,210	36	3,140	500	6.28	10	0.63	4	2.51
<b>TOTAL</b>													<b>\$9.98</b>

<sup>a</sup> Depreciation = (Initial cost - Salvage value) / years of life

<sup>b</sup> Interest on investment = ((Initial cost + Salvage value) / 2) X interest rate

<sup>c</sup> Combined rate of property taxes and insurance premiums as a percentage of the average investment

<sup>d</sup> Per acre costs for self-propelled vehicles include an additional 10% allowance for travel time from farm to field

<sup>e</sup> Total number of trips across the field per year for this operation

<sup>f</sup> Establishment cost per acre from Budget 87-7, net of any revenue. Land cost or charges are not included.

**Table 2. Operating expense for forage machinery and equipment per hour and per acre**

Operation and Item	Repairs & Maint. <sup>a</sup>	Repairs & Maint. <sup>a</sup>	Repairs & Maint. <sup>b</sup>	Fuel Use	Cost per Gal	Fuel & Lube <sup>c</sup>	Total Cost	Acres per Hour	Times Over	Equip. Op. Cost <sup>d</sup>	Labor Cost	Labor Cost <sup>e</sup>	Total Expense
	%	\$/Year	\$/Hour	Gals/hr	\$	\$/Hour	\$/Hour	No.	No.	\$/Acre	\$/Hour	\$/Acre	\$/Acre
Fuel cost per gallon & Labor cost per hour =====>					4.00						9.40		
Tractor, HP=	55	2%	410	0.82	2.42	4.00	11.13	3.5	0	0.00	9.40	0.00	0.00
+ Chisel plow		3%	92	0.92	0	0.00	0.92	3.5	0	0.00			0.00
Tractor, HP=	35	2%	330	0.66	1.54	4.00	7.08	5.4	0	0.00	9.40	0.00	0.00
+ Disc		2%	81	0.81	0	0.00	0.81	5.4	0	0.00			0.00
Tractor, HP=	35	2%	330	0.66	1.54	4.00	7.08	5.4	0	0.00	9.40	0.00	0.00
+ Harrow		3%	41	0.41	0	0.00	0.41	5.4	0	0.00			0.00
Tractor, HP=	35	2%	330	0.66	1.54	4.00	7.08	11.1	1	0.77	9.40	0.97	1.74
+ Sprayer		3%	111	1.39	0	0.00	1.39	11.1	1	0.14			0.14
Tractor, HP=	55	2%	410	0.82	2.42	4.00	11.13	3.8	1	3.46	9.40	2.84	6.30
+ No-till Planter		1%	125	1.25	0	0.00	1.25	3.8	1	0.36			0.36
Tractor	55	2%	410	0.82	2.42	4.00	11.13	3.7	1	3.55	9.40	2.92	6.47
+ Bushhog		1%	22	0.22	0	0.00	0.22	3.7	1	0.06			0.06
Pickup Truck, 3/4 Ton		2%	512	1.02	3.00	4.00	13.80	10.0	2	3.26	9.40	2.16	5.42
<b>TOTALS</b>										<b>11.60</b>		<b>8.90</b>	<b>20.51</b>

<sup>a</sup> Repairs and maintenance costs are calculated as a % of the initial cost in Table 1. Percentages are higher for equipment bought used.

<sup>b</sup> Repairs and maintenance costs per hour based on annual use shown in Table 1.

<sup>c</sup> Total fuel cost plus lube costs estimated as 15% of the fuel cost.

<sup>d</sup> Per acre costs for tractors and other self-propelled equipment includes an additional 10% allowance for travel time from farm to field.

<sup>e</sup> Labor cost per acre includes an additional 15% allowance for travel time, setting up and finishing up.

**Table 3. Sensitivity Analysis**

This table shows the total cost per ton of dry matter produced under various assumptions about costs and yields. Specifically, the cost and yields shown in the enterprise budget on the first page are believed to be fairly representative of conditions in North Carolina. However, there is a wide variation in conditions from one farm to another and costs and yields can vary from year to year. The table shows the effects of yields and costs that are 10 percent higher or lower than the basic budget, singly and in combination.

AVERAGE TOTAL COST PER TON OF DRY MATTER PRODUCED

COST	YIELD		
	-10%	Base Budget	+10%
-10%	\$100.98	\$90.88	\$82.62
Base	\$112.20	\$100.98	\$91.80
+10%	\$123.42	\$111.08	\$100.98

