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
6/1/2013

Description	Unit	Price	Quantity	Value	Comments
Operating inputs					
-Lime, applied, pro-rated share	Ton	$50.00	0.33	$16.65	
-10-20-20, dry bulk	Cwt.	$33.60	3.00	100.80	
-30% N Solution	Cwt.	$20.50	4.00	82.00	
-Fert. Spread, custom	Acre	$7.00	2.00	14.00	
-Seed	lb.	$1.50	20.00	30.00	
-Herbicide, burndown	Acre	$5.00	1.00	5.00	
-Other:				0.00	
-Other:				0.00	
-Machinery Labor (From Table 2)				11.36	
-Other Labor	Hours	$12.00	0.00	0.00	
-Machinery Fuel, Maint, Repairs (Table 2)	Acre			10.41	
-Annual Operating Capital	$	5.0%	67.56	3.38	
Total Operating Costs				**$273.61**	
			Amount	**Value**	
Fixed Costs					
-Machinery Depreciation, Taxes, Insurance,					
and Interest (From Table 1)				11.34	
Total Cost				**$284.94**	
	Unit	**Price[b]**	**Quantity**	**Value**	
Production					
-Harvested as Pasture, Dry Matter	Ton	$0.00	2.50	0.00	
Total Receipts				**$0.00**	
RETURNS ABOVE TOTAL OPERATING COST				**-$273.61**	
RETURNS ABOVE ALL SPECIFIED COSTS[c]				**-$284.94**	
AVERAGE COST PER TON OF DRY MATTER[d]				**$113.98**	

[a] Interest on operating expenses for an average of 3 months.

[b] Only place a value on pasture if it is rented out.

[c] This is the cost of grazing per acre = Total annual cost LESS the value of any pasture rented out.

[d] 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[a]	Interest[b]	Tax & Ins.[c]	Annual D.I.T.I.	Annual Use	D.I.T.I. per Hour	Acres per Hour	Expense per Acre[d]	Times Over[e]	Total Expense
		Years	$	$	$	$	$	$	Hours	$	No.	$	No.	$/Acre
Rate Charged, percent ====>						5.00%	1.40%							
Land preparation														
Tractor, HP=	55	10	23,150	7,177	1,597	758	212	2,568	500	5.14	3.5	1.47	0	0.00
+ Chisel plow		20	3,675	1,213	123	122	34	280	100	2.80	3.5	0.80	0	0.00
Tractor, HP=	55	10	23,150	7,177	1,597	758	212	2,568	500	5.14	5.4	0.95	0	0.00
+ Disc		20	6,150	1,845	215	200	56	471	100	4.71	5.4	0.87	0	0.00
Tractor, HP=	35	10	19,075	5,913	1,316	625	175	2,116	500	4.23	5.4	0.78	0	0.00
+ Harrow		20	1,500	450	53	49	14	115	100	1.15	5.4	0.21	0	0.00
Spraying														
Tractor, HP=	35	10	19,075	5,913	1,316	625	175	2,116	500	4.23	11.1	0.38	1	0.38
+ Sprayer		15	2,350	940	94	82	23	199	80	2.49	11.1	0.22	1	0.22
Planting														
Tractor, HP=	55	10	23,150	7,177	1,597	758	212	2,568	500	5.14	3.8	1.35	1	1.35
+ No-till Planter		12	15,850	6,340	793	555	155	1,503	100	15.03	3.8	3.95	1	3.95
Pasture Clipping														
Tractor	55	10	23,150	7,177	1,597	758	212	2,568	500	5.14	3.7	1.39	1	1.39
+ Bushhog		10	4,225	1,268	296	137	38	472	100	4.72	3.7	1.27	1	1.27
Other														
Pickup Truck, 3/4 Ton		10	30,225	7,859	2,237	952	267	3,455	500	6.91	10	0.69	4	2.76
TOTAL														**$11.34**

[a] Depreciation = (Initial cost - Salvage value) / years of life

[b] Interest on investment = ((Initial cost + Salvage value) / 2) X interest rate

[c] Combined rate of property taxes and insurance premiums as a percentage of the average investment

[d] Per acre costs for self-propelled vehicles include an additional 10% allowance for travel time from farm to field

[e] Total number of trips across the field per year for this operation

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

Operation and Item		Repairs & Maint.[a]	Repairs & Maint.	Repairs & Maint.[b]	Fuel Use	Cost per Gal	Fuel & Lube[c]	Total Cost	Acres per Hour	Times Over	Equip. Op. Cost[d]	Labor Cost	Labor Cost[e]	Total Expense
		%	$/Year	$/Hour	Gals/hr	$	$/Hour	$/Hour	No.	No.	$/Acre	$/Hour	$/Acre	$/Acre
Fuel cost per gallon & Labor cost per hour ====>						3.45						12.00		
Tractor, HP=	55	2%	463	0.93	2.42	3.45	9.60	10.53	3.5	0	0.00	12.00	0.00	0.00
+ Chisel plow		3%	110	1.10	0	0.00	0.00	1.10	3.5	0	0.00			0.00
Tractor, HP=	55	2%	463	0.93	2.42	3.45	9.60	10.53	5.4	0	0.00	12.00	0.00	0.00
+ Disc		2%	123	1.23	0	0.00	0.00	1.23	5.4	0	0.00			0.00
Tractor, HP=	35	2%	382	0.76	1.54	3.45	6.11	6.87	5.4	0	0.00	12.00	0.00	0.00
+ Harrow		3%	45	0.45	0	0.00	0.00	0.45	5.4	0	0.00			0.00
Tractor, HP=	35	2%	382	0.76	1.54	3.45	6.11	6.87	11.1	1	0.68	12.00	1.24	1.92
+ Sprayer		3%	71	0.88	0	0.00	0.00	0.88	11.1	1	0.09			0.09
Tractor, HP=	55	2%	463	0.93	2.42	3.45	9.60	10.53	3.8	1	3.05	12.00	3.63	6.68
+ No-till Planter		1%	159	1.59	0	0.00	0.00	1.59	3.8	1	0.46			0.46
Tractor	55	2%	463	0.93	2.42	3.45	9.60	10.53	3.7	1	3.13	12.00	3.73	6.86
+ Bushhog		1%	42	0.42	0	0.00	0.00	0.42	3.7	1	0.13			0.13
Pickup Truck, 3/4 Ton		2%	605	1.21	3.00	3.45	11.90	13.11	10.0	2	2.88	12.00	2.76	5.64
TOTALS											**10.41**		**11.36**	**21.78**

[a] Repairs and maintenance costs are calculated as a % of the initial cost in Table 1. Percentages are higher for equipment bought used.

[b] Repairs and maintenance costs per hour based on annual use shown in Table 1.

[c] Total fuel cost plus lube costs estimated as 15% of the fuel cost.

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

[ed] 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

		YIELD		
		-10%	Base Budget	+10%
COST	-10%	$113.98	$102.58	$93.25
	Base	$126.64	$113.98	$103.62
	+10%	$139.31	$125.38	$113.98