UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

2002

SAMPLE COSTS TO ESTABLISH AND PRODUCE

PASTURE

NORTH COAST – Mendocino County

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North Coast - Mendocino County - 2002

STUDY CONTENTS

INTRODUCTION

Sample costs to establish a pasture stand and produce pasture in the North Coast Region – Mendocino County are shown in this study. The study is intended as a guide only, and can be used to make production decisions, determine potential returns, prepare budgets and evaluate production loans. Practices described are based on the production practices considered typical for this crop and region, but will not apply to every farm situation. Sample costs for labor, materials, equipment and custom services are based on current figures. A "*Your Costs*" column in Tables 1, 2, 5 and 6 is provided to enter your costs.

The hypothetical farm operations, production practices, overhead, and calculations are described under the assumptions. For additional information or an explanation of calculations used in the study call the Department of Agricultural and Resource Economics, University of California, Davis, California, (530) 752-3589 or the local UC Cooperative Extension office.

Sample Cost of Production Studies for many commodities are available and can be requested through the Department of Agricultural and Resource Economics, UC Davis, (530) 752-3589. Current studies can be downloaded from the department website http://coststudies.ucdavis.edu or obtained from the local county UC Cooperative Extension offices.

ASSUMPTIONS

The following assumptions refer to Tables 1 to 10 and pertain to sample costs to establish a pasture stand and produce pasture in the North Coast Region – Mendocino County. The study covers the coastal zone (tables 5 –10) and interior zones (tables 5A – 10A) of the county. Practices, yields, and rainfall vary between zones. Practices described are not University of California recommendations, but represent production practices and materials considered typical of a well-managed pasture stand in the region and/or zone. Costs, materials, and practices in this study will not be applicable to all situations. Establishment and cultural practices vary among growers within the region; variations can be significant. **The use of trade names in this report does not constitute an endorsement or recommendation by the University of California nor is any criticism implied by omission of other similar products.**

Farm. The hypothetical farm consist of 2,500 non-contiguous acres of land on which 40 acres are being planted to pasture, 160 acres are mature pasture, 2,290 acres are range land, five acres are dairy buildings and five acres are roads and farmstead. The pastures are planted in valleys with no more than 15% slope. The owner manages the farm.

Stand Establishment Operating Costs

Tables 1, 2, 3, and 4

Land Preparation. The ground is ripped 20 to 32 inches deep to fracture the soil and improve water infiltration. The field is disced in three directions to break up large clods, then cultipacked.

Planting. The cultipacker is used to firm the seedbed prior to and after planting. In late August, pasture seed consisting of ryegrass (50% annual, 50% perennial) at 30 – 35 pounds per acre and clover at 4 – 5 pounds per acre is planted 1/4 to 1/2 inch deep. The grower uses a grain drill with the coulters removed and pulls the cultipacker behind the drill. Stand life in the region is 7 to 12 years and is 10 years in this study.

Fertilization. Growers should apply fertilizer or soil amendments after soil tests determine pH and nutrient levels. Lime at one-half to two tons per acre may be required on soils with pH lower than 7.

Irrigation. Fall and winter rains provide enough water to germinate the seed and establish a stand.

Weed Control. Weed problems are minimal and are not treated in this study. Severe weed problems can sometimes be treated with an application of 2-4D or the grower may consider discing and replanting.

Harvest. August plantings will not produce a crop in the current year other than grazing.

Production Operating Costs
Tables 5 to 10 Coastal Region
Tables 5A to 10A Interior Region

Irrigation. Coastal irrigations begin in May and continue into October. Twenty acre-inches of water at $40.32 per acre-foot or $3.36 per acre-inch is applied through hand-line sprinklers. Inland irrigations begin in mid-April and continue through mid-September. Thirty acre-inches are applied through hand-line sprinklers. Irrigation costs shown in the tables include the costs for water, equipment (tractor and pipe trailer), and labor for moving the lines and irrigating.

Fertilization. In the coastal area, grazing pasture is fertilized at 30 pounds of N per acre as Urea every 28 days or once per month from April through August. Pasture for silage receives 150 pounds of N per cutting, but is not addressed in this study. No fertilizers are applied in the inland area. It is assumed that the manure and legumes provide enough N to support the grasses.

Pest Management. For information on pesticides available, pest identification, monitoring, and management visit the UC IPM website at www.ipm.ucdavis.edu. Written recommendations are required for many pesticides, and are made by licensed pest control advisors. For information on pesticide use permits, contact the local county agricultural commissioner's office.

Weeds. No control is assumed in this study. Weeds can be controlled by clipping, mowing and/or removing by hand.

Insects. Crane fly damage occurs about once every five years. The fly larvae will denude large areas, which are treated and replanted.

Harvest. The crop may be grazed, baled for hay, and/or cut to make silage. In this study, it is assumed the crop is grazed. Early in the season, growers may swath and bale the pasture hay or cut for silage and then graze. Also, a grower may grow a percentage of the pasture acreage for non-grazing use – hay, silage. The non-grazed pasture is mechanically harvested an average of three times per year. Harvest equipment owned by the farm consists of a self-propelled swather, center-delivery rake, a self-propelled bale wagon, and one engine driven pull-type balers.

Yield. The coastal crop is assumed to yield 14.5 tons (dry matter basis) per acre over seven months (mid-March to mid-October) and the inland crop 4.5 ton over six months (March to August). Feed obtained from pasture is often measured in animal units. An animal unit month (AUM) is equivalent in feed value to 0.4 tons of alfalfa hay, or 2.5 AUM equals one ton of hay.

Returns. Based on current values reported by the growers, $30 per ton on a dry matter basis for the standing forage is used to calculate returns.

Labor. Hourly wages for workers are $6.75 per hour for labor and $15.00 per hour for machine operators. Adding 34% for the employers share of federal and state payroll taxes, insurance, and other possible

benefits gives the labor rates shown of $9.05 for non-machine labor and $20.10 per hour for machine labor. The labor hours for operations involving machinery are 10% higher than the machine hours to account for extra labor involved in equipment set-up, moving, maintenance and repair.

Equipment Operating Costs. Repair costs are based on purchase price, annual hours of use, total hours of life, and repair coefficients formulated by ASAE. Fuel and lubrication costs are also determined by ASAE equations based on maximum PTO horsepower, and fuel type. Prices for on-farm delivery of diesel and gasoline are $1.26 and $1.51 per gallon, respectively. The fuel, lube, and repair cost per acre for each operation in Table 5 is determined by multiplying the total hourly operating cost in Table 9 for each piece of equipment used for the selected operation by the hours per acre. Tractor time is 10% higher than implement time for a given operation to account for setup, travel and down time.

Interest On Operating Capital. Interest on operating capital is based on cash operating costs and is calculated monthly until harvest at a nominal rate of 7.40% per year. A nominal interest rate is the typical market cost of borrowed funds. The interest cost of post harvest operations is discounted back to the last harvest month using a negative interest charge.

Risk. The risks associated with producing pasture should not be minimized. While this study makes every effort to model a production system based on typical, real world practices, it cannot fully represent financial, agronomic and market risks, which affect the profitability and economic viability of pasture production.

Cash Overhead

Cash overhead consists of various cash expenses paid out during the year that are assigned to the whole farm, not to a particular operation. These costs include property taxes, interest, office expense, liability and property insurance, and investment repairs (buildings and irrigation equipment). Employee benefits, payroll taxes and workman's compensation insurance are included in labor costs and not under cash overhead.

Property Taxes. Counties charge a base property tax rate of 1% on the assessed value of the property. In some counties special assessment districts exist and charge additional taxes on property including equipment, buildings, and improvements. For this study, county taxes are calculated as 1% of the average value of the property. Average value equals new cost plus salvage value divided by 2 on a per acre basis.

Insurance. Insurance for farm investments varies depending on the assets included and the amount of coverage. Property insurance provides coverage for property loss and is charged at 0.660% of the average value of the assets over their useful life. Liability insurance covers accidents on the farm and costs $1,297 for the entire farm or $0.52 per acre.

Office Expense. Office and business expenses for 2,495 acres are estimated at $4,990 annually or $2 per producing acre which includes the dairy and range. These expenses include office supplies, telephones, accounting, legal fees, office and shop utilities, and miscellaneous overhead expenses.

Investment Repairs. Annual repairs on investments or capital recovery items that require maintenance are calculated as two percent of the purchase price.

Non-Cash Overhead

Capital Recovery Costs. Capital recovery cost is the annual depreciation and interest costs for a capital investment and is the amount of money required each year to recover the difference between the purchase price and salvage value (unrecovered capital). The capital recovery costs are equivalent to the annual payment on a loan for the investment with the down payment equal to the discounted salvage value. This is a more complex method of calculating ownership costs than straight-line depreciation and opportunity costs, but more accurately represents the annual costs of ownership because it takes the time value of money into account (Boehlje and Eidman). The formula for the calculation of the annual capital recovery costs is ((Purchase Price – Salvage Value) x Capital Recovery Factor) + (Salvage Value x Interest Rate).

Salvage Value. Salvage value is an estimate of the remaining value of an investment at the end of its useful life. For farm machinery the remaining value is a percentage of the new cost of the investment (Boehlje and Eidman). The percent remaining value is calculated from equations developed by the American Society of Agricultural Engineers (ASAE) based on equipment type and years of life. The life in years is estimated by dividing the wear out life, as given by ASAE by the annual hours of use in the operation. For other investments including irrigation systems, buildings, and miscellaneous equipment, the value at the end of its useful life is zero. The salvage value for land is the purchase price because land does not depreciate. The purchase price and salvage value for equipment and investments are shown in Tables 3 and 8.

Capital Recovery Factor. Capital recovery factor is the amortization factor or annual payment whose present value at compound interest is 1. The amortization factor is a table value that corresponds to the interest rate and equipment life.

Interest Rate. The interest rate of 6.70% used to calculate capital recovery cost is the USDA-ERS's ten-year average of California's agricultural sector long-run rate of return to production assets from current income. It is used to reflect the long-term realized rate of return to these specialized resources that can only be used effectively in the agricultural sector. In other words, the next best alternative use for these resources is in another agricultural enterprise.

Irrigation System. Water cost varies depending on well characteristics or irrigation district. The grower may pump from a well, a stream, and/or a reservoir. The farm reservoir in this study is included in the land purchase price. The farm has 2 – 40 horsepower pumps on the reservoir, that deliver 650 gallons per minute each and a 20 horsepower pump on the creek that delivers 400 gallons per minute. The hand line sprinkler system purchased new by the grower is shown as an investment. The sprinkler system is usually 2-inch or 3-inch line. In this study, the sprinkler system consists of two hundred 2-inch x 30-foot sprinkler line plus mainline.

Land. The price of the land includes an already developed reservoir. Land suitable for pasture production varies widely in value across the region. Prices range from $700 per acre to $6,000. The land in this study is owned by the grower and cost $2,000 per acre.

Establishment Costs. Costs to establish the pasture stand are used to determine capital recovery expenses, depreciation, and interest on investment, during the production years. The establishment cost is the sum of cash costs for land preparation, planting, production expenses, and cash overhead for establishing the pasture. The Total Cash Cost in the first year shown in Table 1 represents the establishment cost per acre. For this study, the cost is $105 per acre or $4,200 for the entire stand. The pasture stand establishment cost is amortized over the 10-year stand life.

Equipment. Farm equipment is purchased new or used, but the study shows the current purchase price for new equipment. The new purchase price is adjusted to 60% to indicate a mix of new and used equipment. Equipment costs are composed of three parts: non-cash overhead, cash overhead, and operating costs. Both of the overhead factors have been discussed in previous sections. The operating costs consist of repairs, fuel, and lubrication and are discussed under operating costs.

Table Values. Due to rounding, the totals may be slightly different from the sum of the components.

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For information concerning the above mentioned University of California publications contact UC DANR Communications Services at 1-800-994-8849, online at http://danrcs.ucdavis.edu or your local county UC Cooperative Extension office.

UC COOPERATIVE EXTENSION
Table 1. COSTS PER ACRE to ESTABLISH PASTURE
NORTH COAST - MENDOCINO COUNTY 2002

Operation	Operation Time (Hrs/A)	Cash and Labor Cost per acre: Labor Cost	Fuel, Lube & Repairs	Material Cost	Custom/ Rent	Total Cost	Your Cost
Cultural:							
Subsoil/Rip	0.39	9	5	0	0	15	
Disc Offset 3X	0.45	11	7	0	0	17	
Roll Field	0.10	2	1	0	0	4	
Plant/Roll Late August	0.15	4	2	35	0	40	
Pickup Truck Use	0.36	9	2	0	0	10	
TOTAL CULTURAL COSTS	1.44	35	19	35	0	86	
Interest on operating capital @ 7.40%						1	
TOTAL OPERATING COSTS/ACRE		35	17	35	0	87	
Cash Overhead:							
Office Expense						5	
Liability Insurance						0	
Property Taxes						2	
Property Insurance						2	
Investment Repairs						8	
TOTAL CASH OVERHEAD COSTS						18	
TOTAL CASH COSTS/ACRE						105	
Non-Cash Overhead:		Per producing acre		-- Annual Cost -- Capital Recovery			
Land		2,004		128		128	
Storage Building		4		0		0	
Shop 30X70		21		2		2	
Tools		4		1		1	
Fuel Tanks/Above Ground		18		2		2	
2-40 HP Pumps		140		11		11	
Sprinkler Pipe 2" 200 pipe		191		20		20	
Equipment		299		31		31	
TOTAL NON-CASH OVERHEAD COSTS		2,681		194		194	
TOTAL COSTS/ACRE						299	

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Table 2 MATERIAL and INPUT COSTS to ESTABLISH PASTURE

NORTH COAST - MENDOCINO COUNTY 2002

	Quantity/ Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
OPERATING COSTS					
Seed:					
Crimson clover	5.00	lb	1.54	8	
Annual Ryegrass	15.00	lb	0.53	8	
Perennial Ryegrass	15.00	lb	1.26	19	
Labor (machine)	1.73	hrs	20.10	35	
Labor (non-machine)	0.00	hrs	9.05	0	
Fuel - Gas	0.71	gal	1.51	1	
Fuel - Diesel	7.62	gal	1.26	10	
Lube				2	
Machinery repair				4	
Interest on operating capital @ 7.40%				1	
TOTAL OPERATING COSTS/ACRE				87	

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Table 3. WHOLE FARM ANNUAL EQUIPMENT COSTS for ESTABLISHMENT YEAR

NORTH COAST REGION – MENDOCINO COUNTY 2002

ANNUAL EQUIPMENT COSTS

						Cash Overhead		
Yr	Description	Price	Yrs Life	Salvage Value	Capital Recovery	Insur-ance	Taxes	Total
02	105HP 4WD Tractor	65,985	15	12,846	6,442	260	39	6,742
02	Disc Offset 16'	31,734	15	3,047	3,229	115	17	3,361
02	Drill Grain 16'	18,186	15	1,746	1,850	66	10	1,926
02	Pickup - 1/2 Ton	20,000	5	8,964	3,224	96	14	3,334
02	Roller Cultipacker 16'	4,200	15	403	427	15	2	445
02	Subsoiler 5 Shank 10'	14,800	10	2,617	1,855	57	9	1,922
TOTAL		154,905		29,623	17,028	609	92	17,729
	40% of New Cost *	61,962		11,849	6,811	244	37	7,092

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Table 4. HOURLY EQUIPMENT COST FOR ESTABLISHMENT YEAR

NORTH COAST REGION – MENDOCINO COUNTY 2002

			COSTS PER HOUR						
		Actual		Cash Overhead		Operating			
Yr	Description	Hours Used	Capital Recovery	Insur-ance	Taxes	Repairs	Fuel & Lube	Total Oper.	Total Costs/Hr.
02	105HP 4WD Tractor	215.80	11.94	0.48	0.07	1.07	9.25	10.32	22.82
02	Disc Offset 16'	69.00	18.72	0.67	0.10	3.26	0.00	3.26	22.74
02	Drill Grain 16'	29.90	24.77	0.88	0.13	3.05	0.00	3.05	28.83
02	Pickup - 1/2 Ton	400.30	3.22	.10	0.01	0.99	3.47	4.46	7.79
02	Roller Cultipacker 16'	49.90	3.42	0.12	0.02	0.31	0.00	0.31	3.88
02	Subsoiler 5 Shank 10'	77.50	9.57	0.30	0.04	2.22	0.00	2.22	12.14

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Table 5. COSTS PER ACRE to PRODUCE PASTURE

NORTH COAST - MENDOCINO COUNTY (**Coast**) 2002

Operation	Operation Time (Hrs/A)	Cash and Labor Cost per acre					
		Labor Cost	Fuel, Lube & Repairs	Material Cost	Custom/ Rent	Total Cost	Your Cost
Cultural:							
Irrigate	2.75	116	32	67	0	215	
Seed: Aerate Soil	0.13	3	2	0	0	5	
Seed: Overseed	0.15	4	2	16	0	22	
Pickup	0.16	4	1	0	0	5	
Fertilize	0.42	10	6	36	0	51	
TOTAL CULTURAL COSTS	3.61	137	42	119	0	298	
Interest on operating capital @ 7.40%						3	
TOTAL OPERATING COSTS/ACRE		137	42	119	0	301	
Cash Overhead:							
Office Expense						2	
Liability Insurance						1	
Property Taxes						2	
Property Insurance						3	
Investment Repairs						8	
TOTAL CASH OVERHEAD COSTS						15	
TOTAL CASH COSTS/ACRE						316	
Non-Cash Overhead:		Per producing acre		-- Annual Cost -- Capital Recovery			
Shop 30X70		21		2		2	
Storage Building		4		0		0	
Tools		4		1		1	
Fuel Tanks – Above Ground		18		2		2	
Sprinkler Pipe 2" 200 30' pipes		191		20		20	
2-40HP Pump		140		11		11	
Land		2,004		128		128	
Pasture Establishment		105		15		15	
Equipment		268		28		28	
TOTAL NON-CASH OVERHEAD COSTS		2,755		205		205	
TOTAL COSTS/ACRE						521	

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Table 5A. COSTS PER ACRE to PRODUCE PASTURE

NORTH COAST - MENDOCINO COUNTY (**Inland**) 2002

Operation	Operation Time (Hrs/A)	Cash and Labor Cost per acre: Labor Cost	Fuel, Lube & Repairs	Material Cost	Custom/ Rent	Total Cost	Your Cost
Cultural:							
Irrigate	2.50	106	29	101	0	235	
Seed: Aerate Soil	0.13	3	2	0	0	5	
Seed: Overseed	0.15	4	2	16	0	22	
Pickup	0.16	4	1	0	0	5	
TOTAL CULTURAL COSTS	2.94	116	34	117	0	267	
Interest on operating capital @ 7.40%						3	
TOTAL OPERATING COSTS/ACRE		116	34	117	0	270	
Cash Overhead:							
Office Expense						2	
Liability Insurance						1	
Property Taxes						2	
Property Insurance						2	
Investment Repairs						8	
TOTAL CASH OVERHEAD COSTS						15	
TOTAL CASH COSTS/ACRE						285	

Non-Cash Overhead:	Per producing acre	-- Annual Cost -- Capital Recovery	
Shop 30X70	21	2	2
Storage Building	4	0	0
Tools	4	1	1
Fuel Tanks	18	2	2
Sprinkler Pipe 2" 200 pipes	191	20	20
2-40HP Pump	140	11	11
Land	2,004	128	128
Pasture Establishment	105	15	15
Equipment	236	24	24
TOTAL NON-CASH OVERHEAD COSTS	2,644	194	194
TOTAL COSTS/ACRE			479

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Table 6. COSTS AND RETURNS PER ACRE to PRODUCE PASTURE

NORTH COAST - MENDOCINO COUNTY (**Coast**) 2002

	Quantity/ Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
GROSS RETURNS					
Grazing – Dry Matter	14.50	ton	30.00	435	
OPERATING COSTS					
Water:					
Pumped Water	20.00	acin	3.36	67	
Seed:					
Annual Ryegrass	30.00	lb	0.53	16	
Fertilizer:					
Urea	150.00	lbN	0.24	36	
Labor (machine)	4.33	hrs	20.10	87	
Labor (non-machine)	5.50	hrs	9.05	50	
Fuel - Gas	0.48	gal	1.51	1	
Fuel - Diesel	24.21	gal	1.26	31	
Lube				5	
Machinery repair				7	
Interest on operating capital @ 7.40%				3	
TOTAL OPERATING COSTS/ACRE				301	
NET RETURNS ABOVE OPERATING COSTS				134	
CASH OVERHEAD COSTS:					
Office Expense				2	
Liability Insurance				1	
Property Taxes				2	
Property Insurance				3	
Investment Repairs				8	
TOTAL CASH OVERHEAD COSTS/ACRE				15	
TOTAL CASH COSTS/ACRE				316	
NON-CASH OVERHEAD COSTS (Capital Recovery)					
Shop 30X70				2	
Storage Building				0	
Tools				1	
Fuel Tanks				2	
Sprinkler Pipe 2" 200 pipes				20	
2-40HP Pump				11	
Land				128	
Pasture Establishment				15	
Equipment				28	
TOTAL NON-CASH OVERHEAD COSTS/ACRE				205	
TOTAL COSTS/ACRE				521	
NET RETURNS ABOVE TOTAL COSTS				-86	

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Table 6A. COSTS AND RETURNS PER ACRE to PRODUCE PASTURE

NORTH COAST - MENDOCINO COUNTY (**Inland**) 2002

	Quantity/ Acre	Unit	Price or Cost/Unit	Value or Cost/Acre	Your Cost
GROSS RETURNS					
Grazing – Dry Matter	4.50	ton	30.00	135	
OPERATING COSTS					
Water:					
Pumped Water	30.00	acin	3.36	101	
Seed:					
Annual Ryegrass	30.00	lb	0.53	16	
Labor (machine)	3.53	hrs	20.10	71	
Labor (non-machine)	5.00	hrs	9.05	45	
Fuel - Gas	0.48	gal	1.51	1	
Fuel - Diesel	19.51	gal	1.26	25	
Lube				4	
Machinery repair				5	
Interest on operating capital @ 7.40%				3	
TOTAL OPERATING COSTS/ACRE				270	
NET RETURNS ABOVE OPERATING COSTS				-135	
CASH OVERHEAD COSTS:					
Office Expense				2	
Liability Insurance				1	
Property Taxes				2	
Property Insurance				2	
Investment Repairs				8	
TOTAL CASH OVERHEAD COSTS/ACRE				15	
TOTAL CASH COSTS/ACRE				285	
NON-CASH OVERHEAD COSTS (Capital Recovery)					
Shop 30X70				2	
Storage Building				0	
Tools				1	
Fuel Tanks				2	
Sprinkler Pipe 2" 200 pipes				20	
2-40HP Pump 650gpm				11	
Land				128	
Pasture Establishment				15	
Equipment				16	
TOTAL NON-CASH OVERHEAD COSTS/ACRE				194	
TOTAL COSTS/ACRE				479	
NET RETURNS ABOVE TOTAL COSTS				-344	

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Table 7. MONTHLY CASH COSTS PER ACRE to PRODUCE PASTURE

NORTH COAST - MENDOCINO COUNTY (**Coast**) 2002

Beginning JAN 02 Ending DEC 02	JAN 02	FEB 02	MAR 02	APR 02	MAY 02	JUN 02	JUL 02	AUG 02	SEP 02	OCT 02	NOV 02	DEC 02	TOTAL
Cultural:													
Irrigate					39	39	39	39	39	20			215
Seed: Aerate Soil										5			5
Seed: Overseed										22			22
Pickup	0	0	0	0	0	0	0	0	0	0	0	0	5
Fertilize				10	10	10	10	10					51
TOTAL CULTURAL COSTS	0	0	0	11	50	50	50	50	39	47	0	0	298
Interest on operating capital	0	0	0	0	0	1	1	1	-1	0	0	0	3
TOTAL OPERATING COSTS/ACRE	0	0	0	11	50	50	51	51	39	47	0	0	301
Overhead:													
Office Expense	0	0	0	0	0	0	0	0	0	0	0	0	2
Liability Insurance	1												1
Property Taxes				2									2
Property Insurance				3									3
Investment Repairs	1	1	1	1	1	1	1	1	1	1	1	1	8
TOTAL CASH OVERHEAD COSTS	2	1	1	6	1	1	1	1	1	1	1	1	15
TOTAL CASH COSTS/ACRE	2	1	1	16	51	51	51	52	40	47	1	1	316

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Table 7A. MONTHLY CASH COSTS PER ACRE to PRODUCE PASTURE

NORTH COAST - MENDOCINO COUNTY (**Inland**) 2002

Beginning JAN 02 Ending DEC 02	JAN 02	FEB 02	MAR 02	APR 02	MAY 02	JUN 02	JUL 02	AUG 02	SEP 02	OCT 02	NOV 02	DEC 02	TOTAL
Cultural:													
Irrigate				24	41	47	47	47	24				235
Seed: Aerate Soil									5				5
Seed: Overseed									22				22
Pickup	0	0	0	0	0	0	0	0	0	0	0	0	5
TOTAL CULTURAL COSTS	0	0	0	24	47	47	47	47	50	0	0	0	267
Interest on operating capital	0	0	0	0	0	1	1	1	0	0	0	0	3
TOTAL OPERATING COSTS/ACRE	0	0	0	24	48	48	49	49	50	0	0	0	270
Overhead:													
Office Expense	0	0	0	0	0	0	0	0	0	0	0	0	2
Liability Insurance	1												1
Property Taxes				2									2
Property Insurance				2									2
Investment Repairs	1	1	1	1	1	1	1	1	1	1	1	1	8
TOTAL CASH OVERHEAD COSTS	1	1	1	5	1	1	1	1	1	1	1	1	15
TOTAL CASH COSTS/ACRE	2	1	1	29	49	49	49	50	51	1	1	1	285

UC COOPERATIVE EXTENSION

Table 8 – 8A. WHOLE FARM ANNUAL EQUIPMENT, INVESTMENT

NORTH COAST – MENDOCINO COUNTY 2002

Table 8. ANNUAL EQUIPMENT COSTS (Coast)

						Cash Overhead		
Yr	Description	Price	Yrs Life	Salvage Value	Capital Recovery	Insur-ance	Taxes	Total
02	105HP 4WD Tractor	65,985	15	12,846	6,442	260	39	6,742
02	Aerator 12.5’	9,375	15	900	954	34	5	993
02	Drill Grain 16’	18,186	15	1,746	1,850	66	10	1,926
02	Pickup _ ton	27,000	5	12,101	4,352	129	20	4,501
02	Pipe Trailer	2,250	5	733	411	10	1	422
02	Spreader Fert 2.5T	9,500	15	912	967	34	5	1,006
TOTAL		132,296		29,238	14,976	533	81	15,590
40% of New Cost*		52,918		11,695	5,990	213	32	6,236

*Used to reflect a mix of new and used equipment

Table 8A. ANNUAL EQUIPMENT COSTS (Inland)

						Cash Overhead		
Yr	Description	Price	Yrs Life	Salvage Value	Capital Recovery	Insur-ance	Taxes	Total
02	105HP 4WD Tractor	65,985	15	12,846	6,442	260	39	6,742
02	Aerator 12.5’	9,375	15	900	954	34	5	993
02	Drill Grain 16’	18,186	15	1,746	1,850	66	10	1,926
02	Pickup _ ton	27,000	5	12,101	4,352	129	20	4,501
02	Pipe Trailer	2,250	5	733	411	10	1	422
TOTAL		122,796		28,326	14,010	499	76	14,584
40% of New Cost*		49,118		11,330	5,604	199	30	5,834

*Used to reflect a mix of new and used equipment

ANNUAL EQUIPMENT COSTS (Coast & Inland – Owned – Not used in study)

						Cash Overhead		
Yr	Description	Price	Yrs Life	Salvage Value	Capital Recovery	Insur-ance	Taxes	Total
02	Baler-Pull w/engine	44,184	10	4,418	5,880	162	243	6,284
02	Balewagon-Self Propelled	102,350	10	10,235	13,620	375	563	14,557
02	Rake – 20’ Center Delivery	18,419	15	1,842	1,909	67	101	2,078
02	Swather-14’	47,150	10	8,338	6,008	185	277	6,470
TOTAL		212,103		24,833	27,417	789	1,184	29,389
40% of New Cost*		84,841		9,933	10,967	316	474	11,756

UC COOPERATIVE EXTENSION

Table 8 – 8A. Continued

ANNUAL INVESTMENT COSTS (Coast and Inland)

Description	Price	Yrs Life	Salvage Value	Capital Recovery	Cash Overhead Insur-ance	Taxes	Repairs	Total
2-40HP Pump 650gpm	28,000	30		2,124	92	14	560	2,791
Fuel Tanks 2-500 gal	3,500	20	350	306	13	2	70	391
Land	5,000,000	40	5,000,000	320,500	0	5,000	0	325,500
Pasture Establishment	4,200	10		582	14	2	0	598
Shop 30X70	52,500	25		4,268	173	26	1,050	5,518
Sprinkler Pipe 2" 200 pipe	38,238	15		4,043	126	19	765	4,954
Storage Building	9,650	20		870	32	5	193	1,099
Tools	10,000	10		1,385	33	5	100	1,523
TOTAL INVESTMENT	5,146,088		5,000,350	334,078	483	5,073	2,738	342,373

ANNUAL BUSINESS OVERHEAD COSTS (Coast and Inland)

Description	Units/ Farm	Unit	Price/ Unit	Total Cost
Liability Insurance	2495	Acre	0.52	1,297
Office Expense	2495	Acre	2.00	4,990

UC COOPERATIVE EXTENSION

Table 9. HOURLY EQUIPMENT COSTS

NORTH COAST - MENDOCINO COUNTY (**Coast**) 2002

			COSTS PER HOUR						
		Actual		Cash Overhead		Operating			
Yr	Description	Hours Used	Capital Recovery	Insur-ance	Taxes	Repairs	Fuel & Lube	Total Oper.	Total Costs/Hr.
02	105HP 4WD Tractor	991.80	2.60	0.10	0.02	1.07	9.25	10.32	13.04
02	Aerator 12.5'	21.30	17.93	0.64	0.10	1.05	0.00	1.05	19.71
02	Drill Grain 16'	21.90	33.83	1.20	0.18	3.05	0.00	3.05	38.26
02	Pickup 1/2 ton	400.40	4.35	0.13	0.02	1.34	5.21	6.55	11.04
02	Pipe Trailer	630.00	0.26	0.01	0.00	0.23	0.00	0.23	0.50
02	Spreader Fert 2.5T	16.80	23.01	0.82	0.12	2.37	3.56	2.37	26.33

UC COOPERATIVE EXTENSION

Table 9A. HOURLY EQUIPMENT COSTS

NORTH COAST - MENDOCINO COUNTY (**Inland**) 2002

			COSTS PER HOUR						
		Actual		Cash Overhead		Operating			
Yr	Description	Hours Used	Capital Recovery	Insur-ance	Taxes	Repairs	Fuel & Lube	Total Oper.	Total Costs/Hr.
02	105HP 4WD Tractor	962.00	2.68	0.11	0.02	1.07	9.25	10.32	13.12
02	Aerator 12.5'	21.30	17.93	0.64	0.10	1.05	0.00	1.05	19.71
02	Drill Grain 16'	21.90	33.83	1.20	0.18	3.05	0.00	3.05	38.26
02	Pickup 1/2 ton	400.40	4.35	0.13	0.02	1.34	5.21	6.55	11.04
02	Pipe Trailer	620.00	0.27	0.01	0.00	0.23	0.00	0.23	0.50

U.C. COOPERATIVE EXTENSION
Table 10. RANGING ANALYSIS
NORTH COAST - MENDOCINO COUNTY (**Coast**) 2002

COSTS PER ACRE AT VARYING YIELD TO PRODUCE PASTURE

	YIELD (ton/acre)						
	4.50	6.50	8.50	10.50	12.50	14.50	16.50
OPERATING COSTS/ACRE:							
Cultural Cost	298	298	298	298	298	298	298
Harvest Cost	0	0	0	0	0	0	0
Interest on operating capital	3	3	3	3	3	3	3
TOTAL OPERATING COSTS/ACRE	301	301	301	301	301	301	301
TOTAL OPERATING COSTS/TON	**67**	**46**	**35**	**29**	**24**	**21**	**18**
CASH OVERHEAD COSTS/ACRE	15	15	15	15	15	15	15
TOTAL CASH COSTS/ACRE	316	316	316	316	316	316	316
TOTAL CASH COSTS/TON	**70**	**49**	**37**	**30**	**25**	**22**	**19**
NON-CASH OVERHEAD COSTS/ACRE	205	205	205	205	205	205	205
TOTAL COSTS/ACRE	521	521	521	521	521	521	521
TOTAL COSTS/TON	**116**	**80**	**61**	**50**	**42**	**36**	**32**

NET RETURNS PER ACRE **ABOVE OPERATING COSTS** FOR PASTURE

PRICE	YIELD (ton/acre)						
$/ton	4.50	6.50	8.50	10.50	12.50	14.50	16.50
21.00	-207	-165	-123	-81	-39	4	46
24.00	-193	-145	-97	-49	-1	47	95
27.00	-180	-126	-72	-18	37	91	145
30.00	-166	-106	-46	14	74	134	194
33.00	-153	-87	-21	46	112	178	244
36.00	-139	-67	5	77	149	221	293
39.00	-126	-48	31	109	187	265	343

NET RETURN PER ACRE **ABOVE CASH COST** FOR PASTURE

PRICE	YIELD (ton/acre)						
$/ton	4.50	6.50	8.50	10.50	12.50	14.50	16.50
21.00	-222	-180	-138	-96	-54	-12	31
24.00	-208	-160	-112	-64	-16	32	80
27.00	-195	-141	-87	-33	22	76	130
30.00	-181	-121	-61	-1	59	119	179
33.00	-168	-102	-36	31	97	163	229
36.00	-154	-82	-10	62	134	206	278
39.00	-141	-63	16	94	172	250	328

NET RETURNS PER ACRE **ABOVE TOTAL COST** FOR PASTURE

PRICE	YIELD (ton/acre)						
$/ton	4.50	6.50	8.50	10.50	12.50	14.50	16.50
21.00	-427	-385	-343	-301	-259	-217	-175
24.00	-413	-365	-317	-269	-221	-173	-125
27.00	-400	-346	-292	-238	-184	-130	-76
30.00	-386	-326	-266	-206	-146	-86	-26
33.00	-373	-307	-241	-175	-109	-43	24
36.00	-359	-287	-215	-143	-71	1	73
39.00	-346	-268	-190	-112	-34	45	123

UC COOPERATIVE EXTENSION

Table 10A . RANGING ANALYSIS

NORTH COAST - MENDOCINO COUNTY **(Inland**) 2002

COSTS PER ACRE AT **VARYING YIELD** TO PRODUCE PASTURE

	YIELD (ton/acre)						
	3.00	3.50	4.00	4.50	5.00	5.50	6.00
OPERATING COSTS/ACRE:							
Cultural Cost	267	267	267	267	267	267	267
Harvest Cost	0	0	0	0	0	0	0
Interest on operating capital	3	3	3	3	3	3	3
TOTAL OPERATING COSTS/ACRE	270	270	270	270	270	270	270
TOTAL OPERATING COSTS/TON	**90**	**77**	**68**	**60**	**54**	**49**	**45**
CASH OVERHEAD COSTS/ACRE	15	15	15	15	15	15	15
TOTAL CASH COSTS/ACRE	285	285	285	285	285	285	285
TOTAL CASH COSTS/TON	**95**	**81**	**71**	**63**	**57**	**52**	**48**
NON-CASH OVERHEAD COSTS/ACRE	194	194	194	194	194	194	194
TOTAL COSTS/ACRE	479	479	479	479	479	479	479
TOTAL COSTS/TON	**160**	**137**	**120**	**106**	**96**	**87**	**80**

See Table 10 for returns above various costs