

PA-NC-52

SPRINKLER
IRRIGATION
FOR
MENDOCINO
COUNTY

UC COOPERATIVE EXTENSION

The foregoing costs are a sample based on a 20 acre pasture served with a 7.5 H.P. motor pumping from a stream with a total head of 136 feet, including lift, pipe friction and pressure to operate the sprinklers. Capacity is provided to apply a 2 inch irrigation in 10 days of 15 hours of run with three moves of pipe daily. Annual fertilization with commercial fertilizers in addition to manure dropped in the pasture will probably be necessary in most pastures if the yields assumed above are to be obtained. Sufficient fencing for several fields and grazing them in rotation will also be necessary and is provided for in the investment shown.

With the inputs and costs assumed the total cost, including interest on investment and depreciation, comes to \$54.67 an acre. With a yield of 14 animal unit months per acre, cost per animal unit month would be \$3.91. This would furnish feed equivalent to alfalfa hay at \$10.00 a ton, so is materially cheaper than most feeds, except natural range, at current prices.

Prepared by William H. Brooks, III - Farm Advisor
Agricultural Extension Service
Ukiah, California

UC COOPERATIVE EXTENSION

SAMPLE SPRINKLER IRRIGATED PASTURE PRODUCTION AND COSTS

The amount of feed obtained and the irrigation water required will vary with the location and local climate. In the section to the right are probable yields in animal unit months of pasturage per acre for three typical climatic zones. The irrigation water needed is also shown. The interior zone is the Russian River Watershed and similar climatic conditions. The Semi-coastal zone would be Anderson Valley, Comptche and similar areas. The Coastal zone would be the bench along the coast and up the mouths of streams a few miles. The table below shows a sample of inputs and costs typical of the semicoastal zone.

	FEED AND IRRIGATION PER ACRE					
	Interior		Semi-Coast		Coast	
	A.U.Mo.	A.In.	A.U.Mo.	A.In.	A.U.Mo.	A.In.
Jan.	.1		.3		.5	
Feb.	.3		.5		.8	
Mar.	.9		1.0		1.2	
Apr.	1.4		1.5		1.7	
May	1.8	4.0	1.8	2.0	2.0	2.0
June	1.6	6.0	1.7	4.0	1.8	2.0
July	1.5	6.0	1.6	4.0	1.7	3.0
Aug.	1.3	6.0	1.5	4.0	1.6	3.0
Sept.	1.2	4.0	1.5	2.0	1.5	2.0
Oct.	1.0	2.0	1.4		1.4	
Nov.	.6		.8		1.0	
Dec.	.3		.4		.8	
Total	12.0	28.0	14.0	16.0	16.0	12.0

SAMPLE COSTS IN SEMICOASTAL AREA WITH 14 A.U. MONTHS PER ACRE YIELD

	Hours & Quantity per acre	Avg: Price	Costs		
			Per Acre	Per A.U.Mo.	
Man labor - applying fertilizer, dragging, mowing, fence work, etc. - - - - -	3 Hr.	1.00	3.00		
Irrigation - moving pipe, etc. 8 Hrs. @ 1.00 Hr.	8 Hr.	1.00	8.00		
Tractor use, all operations - clip, drag, etc.	1 Hr.	1.50	1.50		
Total labor and field power - - - - -			12.50	.89	
Power to pump 16 acre inches; 8 at 2 acre inches 136' total head, 7.5 HP motor inc. demand Chg.	310 KW Hr.		7.32		
Commercial fertilizer as needed			6.00		
Miscellaneous, weed spray, reseeding, etc.			2.00		
Total material cost			15.32	1.09	
General Expense, office, phone, etc.			1.39	.10	
County taxes, \$30.00 value @ \$4.00			1.20	.09	
Total cash costs			30.41	2.17	
	Orig. Cost 20 A.	Avg. value Dollars an acre	Int. on inv.	Depre- ciation	
Stand, 10 Yr. Life, \$30 cost	\$500.	15.00	.75	3.00	
Irrigation system & sprinklers	1700.	42.50	2.13	6.75	
Fencing	1100.	27.50	1.38	2.75	
Miscellaneous equipment	400.	10.00	.50	2.00	
Land	2000.	100.00	5.00	-	
Total depreciation			14.50	14.50	1.04
Interest on investment			9.76	9.76	.70
Total all costs			54.67	3.91	

SPRINKLER IRRIGATED PASTURES FOR MENDOCINO COUNTY

There are locations in Mendocino County where small quantities of water can be pumped from streams for irrigating adjacent land. An irrigated pasture, even as small as a few acres, can be a valuable supplement to the natural range and other feeds available by supplying high quality feed for the sheep or cattle after natural grass has dried up in the summer.

Sprinklers - Ordinarily such pastures can best be irrigated by sprinklers since the land does not require much leveling. With sprinklers it is possible to apply smaller quantities of water in each irrigation and hence water more acres with a limited supply. Where land is level however, and water abundant, flood irrigation will usually be cheaper.

Requirements - Irrigated pasture may be grown on a wide range of soils although the better deeper soils will probably produce more feed than poorer soils. With sprinkler irrigation it is possible to apply water at suitable rates for even rather steep slopes. The number of irrigations and quantity of water needed will vary rather widely with the soil, the climatic zone and even the varieties of pasture plants seeded. A typical number of irrigations on the coastal zone would be from 4 to 6 and in the interior as many as 14 or more may be needed for best production. Irrigation water probably required is shown for 3 zones.

Yield - Pasturage may be measured in animal unit months. This is the quantity of feed for one mature head of cattle or the equivalent in other stock for one month. Yields in this county have been observed to vary from a low of 6 to a high of 18 animal unit months per acre for the year. A good typical yield would be 12, which would be equivalent to $1\frac{1}{2}$ mature head of cattle or 8 head of sheep per acre for about an 8-month grazing season. Five sheep or six lambs are an animal unit. An animal unit month is equivalent in feed value to .4 of a ton of alfalfa hay.

How much stock - You can use to advantage about 1 acre of irrigated pasture for each dairy cow in the herd including dry and young stock. An acre will also graze about 3 weaner calves or 2 yearling beef animals, or 10 feeder lambs for about 8 months of the year. Overstocking or overgrazing will reduce production.

Planting Recommendations - The best mixture to plant for an irrigated pasture in Mendocino County will vary widely with the soil, the climatic zone, the water supply and irrigation interval, and the kind of stock to be grazed. See your farm advisor for specific recommendations.

Planting - It is best to work up the ground and destroy native weeds and vegetation before planting the irrigated pasture seeds. It may be well to grow a crop such as oat and vetch hay or sudan grass. Seed should be planted in a fine firm seed bed and can be planted right in the sudan grass in the early fall. With sprinklers available to irrigate the germinating seeds as needed, seeding can be either in the early fall or in the spring, although the fall is generally better.

Cost of Stand - The cost of preparing the land and seeding it will probably cost around \$30.00 an acre including the seed. Adequate fencing into several fields will cost up to \$55.00 an acre. The sprinkler system and pumping plant for the example shown cost \$1700.00 or \$85.00 an acre.