

IRRIGATED PASTURE TRIALS

SURPRISE VALLEY FIELD STATION

A FOUR YEAR SUMMARY

INTRODUCTION

Two pastures, each two acres in size, were planted in June 1972. Each two acre pasture was divided into three equal size pastures for rotation management. Each pasture opened into a lane for water and supplement.

The pastures were seeded to Fawn Fescue (20 lbs per acre) and Merit Ladino Clover (3lbs per acre). Fawn Fescue was selected for high productivity, fine leaves and stems and sod forming ability. It is important to use a sod forming grass when cattle are grazing during irrigation. Merit Ladino Clover is a winter hardy, highly productive and aggressive pasture legume.

The main objective in establishing these pastures was to investigate irrigated pasture potential in this area under intensive management practices.

PASTURE MANAGEMENT

In these trials each group of cattle was rotated on three equal size pastures that totaled two acres. Each was grazed in turn on a flexible schedule, depending on the rate of regrowth as the season changed. Generally cattle were moved to a new pasture every 6-8 days.

Irrigation was independent of cattle rotation with cattle and sprinklers often together in the same pasture.

FERTILIZATION

Previously conducted trials indicated that from 800 to 1000 pounds of ammonium sulfate (21-0-0) per acre would maintain the desired ratio of grass to legume and would produce dry matter yields of seven plus tons per acre. This application should be split with one half applied in late March or early April and one half in late June or early July.

IRRIGATION

Water was applied by sprinklers. Previous trial work indicated that near maximum production of dry matter occurred when the upper 2-4 inches of soil was kept in a moist condition (at least 50% of field capacity). It was also found that water must be applied at 4-6 day intervals during hot, windy periods of rapid plant growth to maintain this moisture condition. During cooler early and late seasons, the irrigation interval was 8 to 10 days.

Total water applied was about 3.25 inches at each irrigation. This applied amount gave a net amount to the soil of about 1.50 inches under our climatic conditions.

LIVESTOCK

Good quality cattle are essential to success, especially under an intensively managed expensive program. Each year an attempt was made to select cattle with good growth potential. The health program included recommended treatment with 4-way clostridium (CDSN), selenium and in some cases copper. Each year cattle were identified with ear tags and weighed periodically throughout the summer.

RESULTS

Results of the four grazing trials are summarized in Table I.

With the exception of 1973 all cattle have been slaughtered at the end of the grazing season and carcass data obtained. Even with the small number of animals involved, the results indicate that cattle can be finished to an acceptable carcass grade on pasture especially if a small amount of energy supplement is added. Of the 36 animals slaughtered, 16 or 44 percent graded choice and an additional 12 or 33 percent graded good. Even the standard carcasses were well covered and very acceptable. They failed to grade because of inadequate marbling.

Also, these results indicate that with the right kind of cattle on top quality pasture under intensive management, 1000 pounds of beef per acre on pasture alone is a possibility.

In 1975, heifers on straight grass pasture gained almost one-half pound (0.45) per day less than those on the clover-grass mixture. Supplement was the same for both groups. Also, carcass grade was slightly in favor of the clover-grass animals.

In 1976, 18% crude protein alfalfa cubes, when used as a supplement gave the same average daily gain as ground barley. Intake of the two supplements was regulated on the basis of total digestible nutrients

RULES FOR GRAZING IRRIGATED PASTURE

1. Start with a good stand of grass-clover mix approximately 50-50.
2. Use good quality cattle with ability to gain. Young cattle (calves or yearlings) will use forage more efficiently than older cattle.
3. Fertilize and irrigate for maximum forage production.
4. Rotate cattle according to pasture regrowth response.
5. Protect cattle against disease and deficiencies with a good health program.
6. Cull and peddle poor doers after the first 30 days.
7. Supplement to maintain gains as cattle and forage advance toward maturity later in the season.

Cecil Pierce

1977 - May

TABLE 1
SUMMARY OF FOUR PASTURE TRIALS AT THE SURPRISE VALLEY FIELD STATION

YEAR	WT. ON	WT. OFF	A.D.G.	NO. HD. PER AC.	AVG. SUPPLEMENT PER DAY	GAIN PER ACRH	DAYS GRAZING	QUALITY GRADE AVG. 2 Percent	AVG. DRESSING PERCENT
1973	Steers	566	899	4.9	2.0	1642	145		
1974	Steers	750	1140	3.0	8.0 ¹	1222	150	1-st 3-gd 2-ch	56.5
1975	<u>Clover-Grass</u>								
	Heifers	567	841	4.0	Cubes 11.8 ³	1090	139	2-st 3-gd 1-ch	54.1
	<u>Grass</u>								
	Heifers	573	783	4.0	11.8 ³	840	139	3-st 1-gd 2-ch	56.9
1976	<u>Barley</u>								
	Heifers	646	868	3.5	4.41 ⁴	777	137	1-gd 6-ch	58.0
	<u>Alfalfa Cubes</u>								
	Heifers	615	833	3.5	5.32 ⁴	772	137	2-gd 5-ch	56.8

- 1 Fed for last 62 days.
- 2 Numerical range of values appropriate for grades: Std- 6-7-8; Good- 9-10-11; Choice- 12-13-14.
- 3 Started 8/12 (81lb/hd/da) Increased to 151lb/hd/da by 9/27 (183c p. cubes) (Fed cubes for last 69 days)
- 4 Started 5/24 (3 lbs cubes - 2 lbs barley per hd/da) Increased to 8 lb cubes & 6 lbs barley/hd/da by 7/21

COST OF AN IRRIGATED PASTURE GRAZING PROGRAM

ASSUME: Stocking rate of 3-500 pound Yearling Steers per acre.
Average Gain of 2.00 pounds per day.
Grazing Season 140 days.

ITEM	COST PER HEAD
Initial Value (500 lbs @ \$.40/lb)	\$ 200.00
Fertilizer (800 lb/ac. 21-0-0 @ \$100/ton)	13.33
Irrigation Power	5.00
Vet and Medicine	5.00
Death Loss (Est. 1%)	2.00
Taxes	.50
Interest (Steer, Fertilizer, etc) @ 9% (6 mos.)	10.00
TOTAL CASH COSTS	\$ 235.83
 Gross Income (780 lbs @ \$.38/lb)	 296.40
 Return to Land, Labor & Management - per Head	 60.57
 Return Per Acre (3 head/Acre)	 181.71
 Total Beef Per Acre	 840 Pounds

IRRIGATED PASTURE TRIAL

SURPRISE VALLEY

1975

HEIFERS

NOTES:

The heifers used in this trial were black or black white face yearlings supplied by the John Weber ranch. They were weaned in late 1974 and fed in dry lot on alfalfa hay until turned on pasture June 3.

Pastures were ready to graze by May 1 and the heifers should have been turned out at this time. The month delay was caused by a mechanical breakdown in the irrigation system. The pasture was cut in mid May with approximately one ton of hay harvested per acre. This was not considered in the total production per acre.

The heifers were vaccinated with enterotoxemia, type C and D twice three weeks apart with the booster given when they were turned on pasture. With the exception of one case of pink eye, no health problems were encountered during the summer.

The same amount of alfalfa cubes were fed to both groups, clover-grass and straight grass. These cubes tested approximately 18% crude protein.

IRRIGATED PASTURE TRIAL

SURPRISE VALLEY - 1975

HEIFERS

BEGINNING DATE	6/3/75
ENDING DATE	10/10/75
DAYS OF GRAZING	139
NUMBER HEIFERS PER ACRE	4

	<u>GRASS</u>	<u>CLOVER-GRASS</u>
Avg. Initial Weight	573.	567.
Avg. Weight 10/20	783.	841.
Avg. Daily Gain (139 Days)	1.51	1.96
Total Gain Per Acre	840.	1090.

ALFALFA CUBES FED

8/12 - 9/2 (21 Days)	8 lbs/hd/day	168. lbs
9/2 - 9/27 (25 Days)	12 lbs/hd/day	300. lbs
9/27 - 10/20 (23 Days)	15 lbs/hd/day	345. lbs
Total		813. lbs

IRRIGATED PASTURE TRIAL

SURPRISE VALLEY

1975

HEIFERS

ESTIMATED INCOME PER HEIFER ABOVE CASH COSTS

	<u>Cost per Head</u>
Value, 6/1/75 (570# @ .26¢/lb.)	\$148.
Fertilizer 800#/Acre (21-0-0) @ \$120/Ton	12.
Alfalfa Cubes (813 lbs @ 3½¢)	28.46
Vet and Medicine	2.50
Death Loss (1%)	1.48
Taxes	.50
Interest (Heifer, Fert, Cubes at 10%)	7.85
	<hr/>
TOTAL	\$200.79

	<u>GRASS</u>	<u>CLOVER-GRASS</u>
Avg. Income per Heifer	\$268.18	\$ 308.90
Return to Labor (Per Head)	67.39	108.11
Return per Acre (4 Head/acre)	269.56	432.44

IRRIGATED PASTURE TRIAL

SURPRISE VALLEY - 1975

HEIFERS

CLOVER-GRASS MIX

NUMBER	IN WEIGHT 6/3/75	OUT WEIGHT 10/20/75	TOTAL GAIN 139 DAYS	139 DAY A.D.G.
60	545	828	283	2.04
61	535	784	249	1.79
62	530	809	279	2.01
65	640	906	266	1.91
66	630	882	252	1.81
70	555	833	278	2.00
73	535	823	288	2.07
75	570	868	298	2.14

AVERAGE	567.5	841.6	274.1	1.96
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STRAIGHT GRASS

NUMBER	IN WEIGHT 6/3/75	OUT WEIGHT 10/20/75	TOTAL GAIN 139 Days	139 DAY A. D.G.
63	530	750	220	1.58
64	600	813	213	1.53
67	645	833	188	1.35
68	560	833	273	1.96
69	560	740	180	1.29
71	560	789	229	1.65
72	565	774	209	1.50
74	565	735	170	1.22

AVERAGE	573.1	783.4	210.2	1.51
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IRRIGATED PASTURE TRIAL

SURPRISE VALLEY - 1975

HEIFERS

CLOVER-GRASS

NUMBER	SHRUNK PASTURE WEIGHT	HOT CARCASS WEIGHT	YIELD	CONF. SCORE	CARCASS GRADE
60	811.2	420	52%	Good	Low Good
61	768.	439	57%	Choice	Med Good
62	792.	430	54%	Good	Med Good
65	888.	503	57%	Std	Standard
66	864.	498	58%	Choice	Low Choice
70	816.	423	52%	Good	Low Good
73	806.4	420	52%	Good	Med Good
75	849.6	430	51%	Std	Standard

GRASS

NUMBER	SHRUNK PASTURE WEIGHT	HOT CARCASS WEIGHT	YIELD	CONF. SCORE	CARCASS GRADE
63	667.2	390	58%	Std	Standard
64	731.5	399	55%	Good	Standard
67	816.0	377	46%	Good	Standard
68	732.5	454	62%	Good	Low Choice
69	724.8	400	55%	Good	Low Good
71	700.8	392	55%	Standard	Standard
72	705.6	397	56%	Standard	Standard
74	720.0	480	67%	Choice	Med Choice

IRRIGATED PASTURE TRIAL

SURPRISE VALLEY
1975

HEIFERS

CLOVER-GRASS

NUMBER	SALE WEIGHT	CARCASS GRADE	PRICE/POUND	AMOUNT
60	811.2	Low Good	.38¢	\$ 308.26
61	768.0	Med Good	.38¢	291.84
62	792.0	Med Good	.38¢	300.96
65	888.0	Standard	.34¢	301.92
66	864.0	Low Choice	.42¢	362.88
70	816.0	Low Good	.38¢	310.08
73	806.4	Med Good	.38¢	306.43
75	849.6	Standard	.34¢	288.86
			.38¢	\$ 308.90

GRASS

NUMBER	SALE WEIGHT	CARCASS GRADE	PRICE/POUND	AMOUNT
63	667.2	Standard	.34¢	\$ 226.85
64	731.5	Standard	.34¢	248.71
67	816.0	Standard	.34¢	277.44
68	732.5	Low Choice	.42¢	307.65
69	724.8	Low Good	.38¢	275.42
71	700.8	Standard	.34¢	238.27
72	705.6	Standard	.34¢	239.90
74	720.0	Med Choice	.42¢	302.40
			.37¢	\$ 264.58

0
1-270
50

IRRIGATED PASTURE FERTILITY TRIAL

KELLEY RANCH

6 Miles West of Alturas on Hwy. 299

Don L. ...
Called Don 5/3/78.

Fertilizer applied 5/26/78
Harvested 7/6/78

Nitrogen - Phosphorus - Sulfur Rate Trial

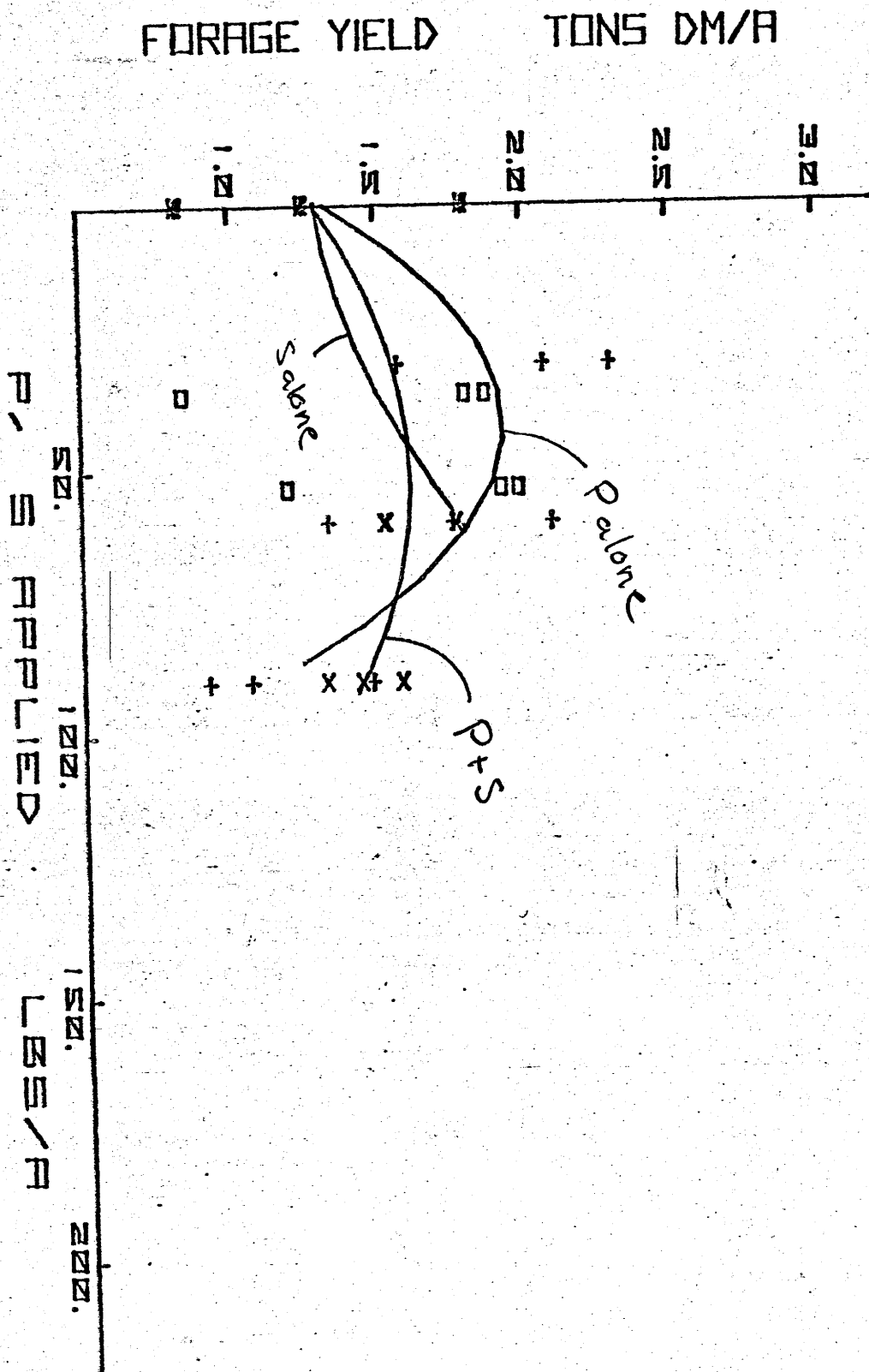
Plot Size - 10 ft. X 25 ft. 250 sq ft. or .005739 acre
Treatments- ~~22~~ 26
Replications - 3 Per Treatment

Treatment Number	Fertilizer Material	Rate lb/acre			Material lb/acre	lb/plot
		N	P ₂ O ₅	S		
1.	None-Control	0	0	0	0	0
2.	Ammonium Nitrate	50	0	0	149	0.856
3.	Ammonium Nitrate	100	0	0	299	1.72
4.	Ammonium Nitrate	150	0	0	448	2.57
5.	Ammonium Nitrate	200	0	0	599	3.44
6.	Ammonium Sulfate	100	0	114.5	477	2.74
7.	Ammonium Sulfate	150	0	171.4	714	4.10
8.	Triple Superphosphate	0	30	0.6	67	0.38
9.	Triple Superphosphate	0	60	1.3	134	0.77
10.	Triple Superphosphate	0	90	2.0	201	1.15
11.	Ammonium Nitrate Plus Triple Superphosphate	50	30	0.6	149 67	0.86 0.38
12.	Ammonium Nitrate Plus Triple Superphosphate	100	60	1.3	299 134	1.72 0.77
13.	Ammonium Nitrate Plus Triple Superphosphate	150	90	2.0	448 201	2.57 1.15
14.	Ammonium Nitrate Single Superphosphate	100	60	36	299 300	1.72 1.72
15.	Ammonium Nitrate Single Superphosphate	150	90	54	448 450	2.57 2.58
16.	Single Superphosphate	0	60	36	300	1.72
17.	Single Superphosphate	0	90	54	450	2.58

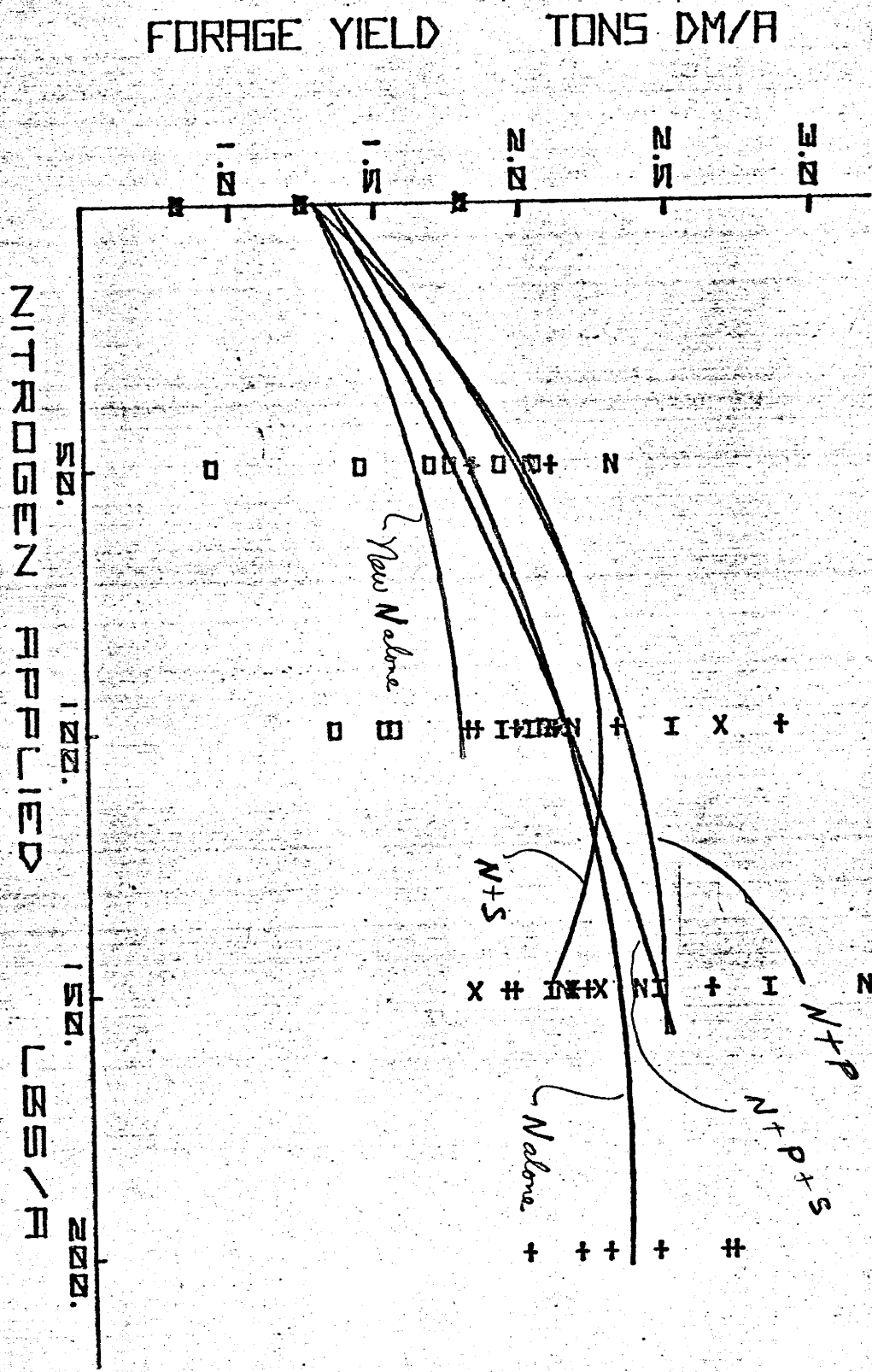
Treatment Number	Material	Rate LB/ACRE			Lb/acre	lb/plot
		N	P ₂ O ₅	S		
18.	Gypsum	0	0	36	231	1.33
19.	Gypsum	0	0	54	346	1.98
						<u>Grams/½ Plot</u>
20.	Urea - Nitrate 1	50	0	0		245
21.	Urea - Nitrate 2	100	0	0		484
22.	Urea - Nitrate 3	50	0	0		201
23.	Urea - Nitrate 4	100	0	0		392
24	Urea	100	0	0	223	1.28
25	Urea	150	0	0	334	1.92
26	Urea	200	0	0	445	2.55

*Dissolved in hot water - hard to dissolve
2 gal H₂O./plot.*

IRRIGATED PASTURE RESPONSE TO P ALONE C+J,
S ALONE C+J AND P+S C+J.



IRRIGATED PASTURE RESPONSE TO N ALONE C-3,
 N+P ALONE C-2, N+S EX-1, N+P C-2, AND
 N+P+S C-3.



UNIFORM PLANTINGS FOR EASTERN OREGON RANGE FORAGE NURSERIES

The establishment of range forage nurseries on recognized range sites would be of considerable value from the educational standpoint for demonstration purposes and for furnishing information concerning species adaptability on specific range sites.

The primary responsibility for establishment of the nurseries and their yearly evaluation, except for the more intensive evaluations, would be at the county level. In cooperation with Poulton and Hedrick, I will draw up plans for the uniform nurseries. Insofar as possible, we would all cooperate in selecting nursery sites.

When developing a uniform nursery, it is recognized that some species seeded will not establish in all areas and that many will not be well adapted. However, the value of this type of nursery lies in showing where the species are not adapted as well as where they are. Plainly labeled plots containing little or no grass on identified range sites, may have as much value from the demonstration and educational standpoints as plots with good stands of apparently adapted species.

To establish a series of uniform nurseries over eastern Oregon will necessitate the cooperative efforts of many people. It will be necessary to select and ecologically classify range sites in several representative areas of eastern Oregon. These sites could be on either private or public land, but there will have to be reasonable assurance that they would not be destroyed until they have fulfilled their purpose. It would expedite establishment of the nurseries if the county agents and Soil Conservation Service personnel could pick out several range sites as possible nursery areas. During the course of this summer, Dr. Poulton, Dr. Hedrick, or I would cooperate with each of you in making final selection of the best sites for establishment of the nurseries.

I believe the most we can hope to do this summer will be to locate and identify the sites and make the necessary seedbed preparation. Seeding will then be made this fall or next spring. In the interest of uniformity, we should do the best job possible in preparing the seedbeds. We want to evaluate performance of grasses on various range sites, not establishment methods.

The size area needed for the nursery will depend somewhat upon the number of species and size of plots. The individual plots should certainly be no smaller than 10 x 20 feet. Plots 20 x 40 feet would be much better if we can get the space. The larger plot would provide ample space for some fertilizer evaluation work if desired, after the nurseries were established. I estimate there will be about 30 species in each nursery. Plots of that size and number would require over one-half acre of land with no replication.

In evaluating the nurseries, it would be necessary to collect information on the establishment and yield of seeded grasses and other

species. This would allow evaluation of the grasses from the standpoint of their ability to resist reinvasion by other grasses, weeds, and shrubs. It would also be necessary to make a seasonal evaluation of the development of the various species. In addition, a site or two representing large areas could be selected on which plots could be replicated. On these plots more intensive information could be gathered.

As visualized, the establishment of these uniform nurseries is a rather ambitious plan. However, those nurseries would yield unlimited information of the type that is not now available. That is the response of grasses to specific range sites. In addition, they would serve as valuable demonstrations where we could take the livestock people and show them what to expect if a given grass was seeded on a given range site. These nurseries would be of real value in the overall range improvement program in Oregon. Following is a list of grasses which might be included in the nursery plantings. All of these would not necessarily be seeded on all sites. I would appreciate it if you would look over the list and make any suggestions you feel would help to make the nursery more valuable in your area.

SPECIES FOR UNIFORM NURSERY PLANTING

- | |
|---------------------------------|
| 1. Standard Crested wheatgrass |
| 2. Nordan Crested wheatgrass |
| 3. Siberian wheatgrass |
| 4. Volga wild rye |
| 5. Sodar streambank wheatgrass |
| 6. Thickspike wheatgrass |
| 7. Whitmar beardless wheatgrass |
| 8. Sherman big bluegrass |
| 9. Fairway Crested wheatgrass |
| 10. Bulbous bluegrass |
| 11. Sheep fescue |
| 12. Canby bluegrass |
| 13. Topar pubescent wheatgrass |
| 14. Alkar tall wheatgrass |
| 15. Russian wildrye |

drier sites

drier and more
moist sites

16. Greenar intermediate wheatgrass

17. Amar wheatgrass

18. Durar hard fescue

19. Primar slender wheatgrass

20. Manchar smooth brome

21. Lincoln smooth brome

22. Latar orchardgrass

23. Alta fescue

24. Tualatin tall oatgrass

25. Timothy

26. Perennial wildrye

27. Chewings fescue

28. Meadow foxtail

29. Creeping meadow foxtail

30. Reed canarygrass

drier and more
moist sites

more moist sites

Alfalfas

Nomad

Ladak

drier sites

ONE THOUSAND POUNDS OF FINISHED BEEF PER ACRE?

John P. Robison, Farm Advisor
Modoc County, California

It was just two or three short years ago at this same conference that Tony Lesperance, Animal Nutritionist at the University of Nevada, predicted that in the near future the livestock industry would find that feeding cattle on all or nearly all grain rations for periods of 120-160 days would no longer be an acceptable practice. Other alternative feeding practices should and must be developed.

With this prediction in mind, and the ever present necessity to maximize income on each irrigated acre, we are conducting pasture feeding trials in Modoc County, California. These grazing trials are being conducted each year at the Surprise Valley Agricultural Development Station, 3 miles north of Cedarville, California. The climatic conditions are characterized by short, cool, dry summers and long, cold, fairly dry winters. At an elevation of 4,600 feet and a 120-day growing season, we have an annual precipitation of 12.5 inches with snow and rainfall furnishing somewhere close to equal amounts. Very little precipitation occurs during the months of June, July, August, and September. Summer temperatures are nearly ideal for growth of forage crops. We seldom exceed 90°F or fall below 45°F during the peak growth period.

Pasture Management

Composition

The pasture used in these grazing trials was planted in June, 1972. Seeding was by drilling with Fawn fescue (20 lbs. per acre) and Merit Ladino clover (3 lbs. per acre). Fawn fescue was selected from Alta fescue by Oregon State agronomists for its high productivity, fine leaves, and stems, and the ability to be more of a sod former. It is very important to have a grass that forms a good sod quickly when cattle are grazing during irrigation. Merit Ladino clover is very winter hardy. It is a highly productive and very aggressive plant under correct irrigation and grazing management. The resulting pasture composition from using the above rates was very close to a 50-50 mix of grass and clover.

Fertilization

From previously conducted trial work we knew that 500 lbs. of ammonium sulfate (21-0-0) applied in late March and again in late June would maintain the desired ratio of grass and clover. Also this rate of nitrogen (210 lbs. of nitrogen) would produce dry matter yields of over 7 tons per acre.

Irrigation

Water was applied during the growing season by sprinklers. Previous trial work indicated that near maximum production of dry matter occurred when the upper 2-3 inches of soil was kept in a moist condition (at least 50 percent of field capacity). We have found that water must be applied at 4-6 day intervals during the period of rapid plant growth and hot, windy conditions. Total water applied is about 2.25 inches at each irrigation. This applied amount of water will give a net amount to the soil of about 1.50 inches under our climatic conditions. Keep in mind that this moist soil condition must be maintained if high production is to be achieved.

Livestock Management

We rotated cattle on three equal size pastures that totaled 2 acres. Each pasture was grazed in turn on a flexible schedule depending on the rate of regrowth as the season changed. Generally, the cattle were moved to a new pasture every 6-8 days. An alley-way was provided at the end of our pastures for supplemental feeding, watering, and for movement to our weighing area. It is interesting to note that on very hot days the steers enjoyed eating right under the streams of water from the sprinklers. On colder days they sought the alley-way

for a dry spot to bed down. It is important to select cattle with ability to gain and produce a marketable carcass if this pasture to slaughter system of beef production is to be economical. Poor doers should be culled after the first 30-day weight period if it is not possible to do so earlier.

Results

In 1973 the total gain per acre was 1,198 lbs. produced over the 138-day grazing period. Initial stocking rate was 7 head of crossbred steers per acre that averaged 556 lbs. The seasonal average stocking rate was 5.5 steers per acre with an average daily gain of 1.58 lbs.

The steers were sold for \$0.44 at an average final weight of 774 lb., which gave a gross of \$340 per head. The beginning value of each steer, \$278, when added to pasture costs of \$35 per acre and other costs (labor, hauling, taxes, medicine, death loss, and interest) added up to a total of \$325. This gave a net return of \$15, or \$82.50 per acre in 1973.

The goal in 1974 was to see if it would be profitable to start with larger steers that could be killed off pasture. We assumed we would need to feed some grain towards the latter part of the grazing season. Just when this grain feeding would start we did not know, but we did know that we needed to average 2 lb. per day gain over 140 days if we were to have the 750 lb. beginning steers reach the 1,000 lb. range at the end of the grazing period. Refer to the tables for the details of the 1974 grazing trial results.

The steers were purchased by local consumers, and without exception, all reported that tenderness and flavor of their meat was excellent.

Summary

We believe that it is possible and profitable for the rancher-producer to produce beef for the consumer's table without a step over in the feed yard. The "1,000 pounds of finished beef per acre" can be accomplished on well managed irrigated pasture with a minimum amount of supplemental energy being added.

Here, we think, are some of the keys that are essential in a successful pasture beef production system:

1. Irrigation--Irrigate for maximum plant production.
2. Fertility--Use the correct kind, amount, and timing.
3. Grazing--Have a management system that will result in maximum livestock production from each acre but is consistent with maintaining a productive pasture.
4. Livestock--Select the type and kind that will gain rapidly and be acceptable to the consumer.

PROGRESS REPORT
1974
IRRIGATED PASTURE TRIAL

TABLE 1
AVERAGE AND TOTAL WEIGHTS AND GAINS OF YEARLING STEERS
FINISHED ON IRRIGATED PASTURE AND BARLEY

Date on pasture	5/10/74
Date off pasture	10/7/74
Average number steers/acre	3.4
Total number days of grazing	150.0
Average initial weight (lb.)	750.0
Average final weight (lb.)	1140.0
Average amount of barley fed (8 lb./day, 62 days)	500.0
Total gain/acre (lb.)	1222.5
Average daily gain (132 days)	2.38

TABLE 2
TOTAL GAIN FROM PASTURE ONLY^a

Total gain per acre before supplement (5/10 to 7/29)		697.5
Gain during supplement (7/29 to 10/7):		
Av. weight of steers (lb.)	1052.0	
Av. daily gain (lb.)	2.50	
TDN required for daily gain (lb.)	16.77	
TDN supplied from supplement (lb.)		
(8 lb. barley/day at 72 percent TDN)	5.76	
TDN from pasture	11.01	
Percentage of total TDN from pasture	66%	
Total gain/acre (pasture plus supplement)	525.0	
Gain per acre from pasture only		346.5
Total gain from pasture only (150 days)		1044.0

^aEstimated from average weight, average daily gain and TDN requirements of steers and TDN content of barley supplement.

TABLE 3

CARCASS PERFORMANCE DATA

Steer No.	Off Pasture Weight ^a	Quality Grade	Marbling	Yield Grade	Dressing Percentage	Percentage Retail Cuts
379-380	1208	Standard	True Trace	1.00	56.5	54.6
381-382	1086	High-Good	Slight	1.05	55.2	54.5
383-384	1212	High-Good	Slight	1.75	56.6	52.9
578-579	1120	Low-Good	Slight	1.00	55.8	54.6
580-581	1015	Low-Good	Small	2.45	56.3	51.3
584-585	1090	Medium-Choice	Modest	1.30	56.5	53.9
Average:	1140			1.77	56.5	52.8

^aShrink 3%.

TABLE 4

ESTIMATED INCOME ABOVE VALUE OF ANIMAL AND CASH COSTS ON STEERS
FINISHED ON IRRIGATED PASTURE WITH BARLEY SUPPLEMENT

	Cost per Head
Value--750 lb. at \$38	\$285.00
Pasture--5 months at \$10.00 (at Fockl. 2.00 cost)	50.00
Barley--500 lb. at \$.07	35.00
Veterinary & medicine	2.50
Death loss (est. 1%)	2.85
Taxes	.50
Interest--steer, pasture, and barley at 12%	18.50
Average income per steer	\$413.33
Return to labor	18.98
Return per acre (3.4 head per acre)	64.53

