

File
SAN DIEGO

RANGE FERTILIZER TRIALS -- THREE YEARS

SAN DIEGO COUNTY

Nutrients Applied per Acre	Cost of Fertilizer per Acre	Yield in Pounds per Acre				Average Cost of Additional Forage per Ton
		1955	1956	1957	Total	
Check		1386	2396	2292	6074	\$
25 P	\$ 2.70	1433	2940	2389	6762	\$ 7.85
50 P	\$ 5.40	1614	3202	2147	6963	\$ 12.15
40 N	\$ 5.88	2386	3202	2608	8196	\$ 5.54
40 N 25 P	\$ 8.58	3062	3855	2313	9230	\$ 5.44
100 P	\$ 10.80	1779	3180	2416	7375	\$ 16.60
40 N 50 P	\$ 11.28	2101	4051	3090	9242	\$ 7.12
80 N	\$ 11.76	2674	3093	2878	8645	\$ 9.15
80 N 25 P	\$ 14.46	3236	4399	2881	10516	\$ 6.51
100 N	\$ 14.70	2664	3659	3453	9776	\$ 7.95
40 N 100 P	\$ 16.68	2697	3594	2530	8821	\$ 12.15
80 N 50 P	\$ 17.16	2936	4465	2753	10154	\$ 8.41
100 N 25 P	\$ 17.40	3152	4748	3199	11099	\$ 6.93
100 N 50 P	\$ 20.10	2955	5706	2964	11625	\$ 7.24
80 N 100 P	\$ 22.56	2574	4313	2949	9836	\$ 11.99
100 N 100 P	\$ 25.50	3780	5445	3739	12964	\$ 7.40

Project Outline

San Diego County

Dryland Range Fertilization Trials

Name of Project

October 15, 1957

Effective Date

JAN 8 A.M.

Leader Victor W. Brown

Farm Advisor

Names of Cooperators (if any) other than Extension. Indicate re-

sponsibility of each.

San Diego Extension

Project Number: State 43374 County 196

I. REASON FOR PROJECT: History and status of problem and importance to

the county. Attach extra sheets if necessary. Range fertilization has been elsewhere in the state. Variations in soil and water con- ditions peculiar to San Diego County make it necessary to test responses on a local level to determine feasibility. Quality of food, late and early feed is most critical to local cattle- men as grazing land diminishes for beef production. Fertiliz- zation may relieve these feed shortages. Two years of test plot work has already been under observation.

II. OBJECTIVES: Long time

To determine economical feasibility of Dryland Range Fertiliz- zation for added forage for beef production.

III. PROCEDURE

- A. Establish 15 range fertilization test plots in represen- tative locations over the county to determine (1) responses to elements (2) greatest response to rate of single element applications or combinations of elements.
- B. Make supplementary tests such as soil and tissue analysis at plot locations to correlate such tests with fertilizer responses.
- C. Seek to establish at least 1 large scale fertilization trial, to weigh cattle in and off to determine beef pro- duction advantage on fertilized

- 1. Maintain and collect yields from 8 pilot plots now established on rangeland.
- 2. Reestablish at least 3 more plots and resply fertilizer on existing plots to measure carryover response.
- 3. Seek cooperator with necessary facilities Who large scale trial with cattle

CALENDAR: When

Fall 1957

Fall 1957

Fall 1957

Spring 1958

Summer 1958

Summer 1958

SIGNATURES:

Victor W. Brown
Farm Advisor

10/24/57
Date

Victor W. Brown
Farm Advisor

11/7/57
Date

B. Moore
County Director

10/25/57
Date

Victor W. Brown
Director

11/13/57
Date

FERTILIZER PLOT LAYOUT
AND COST PER ACRE FOR EACH SQUARE

	← 80 ft. →			
	Nitrogen	Phosphorus Nitrogen	Phosphorus	Check
	Nitrogen Sulphur	Phosphorus Nitrogen Sulphur	Phosphorus Sulphur	Sulphur
	Check	25 P 2.70	50 P 5.40	100 P 10.80
		\$2.70	\$5.40	\$10.80
	40 N 5.88	25 P 2.70 40 N <u>5.88</u>	50 P 5.40 40 N <u>5.88</u>	100 P 10.80 40 N <u>5.88</u>
	\$5.88	\$8.58	\$11.28	\$16.68
	80 N 11.76	25 P 2.70 80 N <u>11.76</u>	50 P 5.40 80 N <u>11.76</u>	100 P 10.80 80 N <u>11.76</u>
	\$11.76	\$14.46	\$17.16	\$22.56
	100 N 14.70	25 P 2.70 100 N <u>14.70</u>	50 P 5.40 100 N <u>14.70</u>	100 P 10.80 100 N <u>14.70</u>
	\$14.70	\$17.40	\$20.10	\$25.50
		↑ 25 lbs. P ₂ O ₅ /Ac	↑ 50 lbs. P ₂ O ₅ /Ac	↑ 100 lbs. P ₂ O ₅ /Ac

20 ft. Squares
 40 lbs. N/Ac
 80 lbs. N/Ac
 100 lbs. N/Ac

Cost of fertilizer based on:

Ammonium Nitrate (33%) @ \$97/Ton = 14.7¢ per pound Nitrogen.

Single Super Phosphate (pelleted) (20%) @ \$43/Ton = 10.8¢ per pound Phos.

FERTILIZER CLIPPING YIELDS
LBS. OF DRY MATTER PER ACRE

LOCATION	VEGETA-TION	RAIN-FALL	RAMONA (FORWARD)	OTAY	PALOMAR BLUEGRASS (MENDEN-HALL)	BOULEVARD (FUGAY)	RAMONA (MIRASOL)	PINE VALLEY HARDING & ANN MADERA)	JULIAN (CHAMBER-LAIN)
100N	100P	CHECK	561	519	2,434	4,683	285	3,059	355
80N	100N	25P	1,190	672	2,295	5,336	664	2,742	268
100N	50P	50P	1,370	408	3,035	6,098	412	2,862	393
40N	40N	40N	2,762	461	6,180	6,098	441	4,158	489
40N	25P	25P	1,032	1,032	6,055	4,356	851	4,634	825
100P	100P	100P	751	523	3,762	5,990	220	3,390	470
40N	50P	50P	1,853	727	3,820	8,059	557	3,491	614
80N	80N	80N	1,394	835	6,144	6,316	885	4,028	969
80N	25P	25P	2,345	1,647	5,527	5,118	696	5,306	1,354
100N	100N	100N	825	351	7,089	6,403	664	4,000	1,056
40N	100P	100P	2,405	1,337	4,403	7,079	873	4,312	1,027
80N	50P	50P	2,448	1,549	4,641	7,950	832	4,763	1,277
100N	100N	25P	1,893	1,164	5,819	4,792	725	5,685	1,200
100N	50P	50P	2,242	1,450	5,008	8,059	1,067	4,624	1,450
80N	100P	100P	2,810	1,529	3,226	9,148	1,109	4,345	960
100N	100P	100P	3,209	1,820	7,478	8,821	909	5,080	1,315

FERTILIZER COST PER EXTRA TON OF DRY MATTER

LOCATION	VEGETA-TION	RAIN-FALL	CHECK																																			
100N	100N	80N	100N	50P	100N	80N	100N	40N	50P	80N	100N	40N	50P	80N	100N	40N	50P	80N	100N	40N	50P	80N																
				\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$																
				15"	6"	25"	15"	6"	25"	15"	6"	25"	15"	6"	25"	15"	6"	25"	15"	6"	25"	15"																
				RAMONA (FORWARD)	OTAY	PALOMAR BLUEGRASS (MENDEN-REDTOP HALL)	BOULEVARD ALFALFA (FUGUAY)	RAMONA (MIRASOL)	PINE VALLEY (CORDA & ANN MADERA)	JULIAN (CHAMBER-LAIN)																												
				33.75	33.00	112.80	73.50	25.82	40.68	33.65	54.37	42.77	45.12	39.23	18.00	3.14	4.74	16.36	16.34	9.39	6.30	17.02	15.60	10.29	15.70	57.84	10.12	33.75	33.00	112.80	73.50	25.82	40.68	33.65	54.37	42.77	45.12	39.23
				8.44	7.80	17.35	28.00	16.25	113.08	18.13	25.97	23.93	19.96	19.32	18.00	3.14	4.74	16.36	16.34	9.39	6.30	17.02	15.60	10.29	15.70	57.84	10.12	8.44	7.80	17.35	28.00	16.25	113.08	18.13	25.97	23.93	19.96	19.32
				13.17	7.80	17.35	28.00	16.25	113.08	18.13	25.97	23.93	19.96	19.32	18.00	3.14	4.74	16.36	16.34	9.39	6.30	17.02	15.60	10.29	15.70	57.84	10.12	13.17	7.80	17.35	28.00	16.25	113.08	18.13	25.97	23.93	19.96	19.32
				7.61	8.28	6.67	14.34	17.85	13.90	10.53	31.64	11.89	10.12	12.32	7.61	8.28	6.67	14.34	17.85	13.90	10.53	31.64	11.89	10.12	12.32	7.61	8.28	7.61	8.28	6.67	14.34	17.85	13.90	10.53	31.64	11.89	10.12	12.32
				14.21	73.50	30.64	80.57	68.86	77.37	55.60	61.29	79.09	51.54	55.02	14.21	73.50	30.64	80.57	68.86	77.37	55.60	61.29	79.09	51.54	55.02	14.21	14.21	14.21	73.50	30.64	80.57	68.86	77.37	55.60	61.29	79.09	51.54	55.02
				77.14	73.50	30.64	80.57	68.86	77.37	55.60	61.29	79.09	51.54	55.02	77.14	73.50	30.64	80.57	68.86	77.37	55.60	61.29	79.09	51.54	55.02	77.14	77.14	77.14	73.50	30.64	80.57	68.86	77.37	55.60	61.29	79.09	51.54	55.02
				270.00	98.00	37.30	180.00	86.77	39.20	28.92	43.24	50.55	37.30	41.43	270.00	98.00	37.30	180.00	86.77	39.20	28.92	43.24	50.55	37.30	41.43	270.00	270.00	270.00	98.00	37.30	180.00	86.77	39.20	28.92	43.24	50.55	37.30	41.43
				270.00	98.00	37.30	180.00	86.77	39.20	28.92	43.24	50.55	37.30	41.43	270.00	98.00	37.30	180.00	86.77	39.20	28.92	43.24	50.55	37.30	41.43	270.00	270.00	270.00	98.00	37.30	180.00	86.77	39.20	28.92	43.24	50.55	37.30	41.43