

For SCS Field Day - Apr. 9, 1986

NITROGEN FERTILIZATION RATE TRIAL

Jay Begun Ranch--Del Puerto Canyon Road

Conducted by Bill van Riet, Farm Advisor, University of California Cooperative Extension and Gene Bishop, Conservationist, Soil Conservation Service.

Many California clipping and grazing trials have shown the benefits and limitations of range fertilization. But no data exists for Stanislaus County westside rangeland. In the 1950's, Cooperative Extension did some observation trials, but apparently yield data was not collected. It is known, however, that grasses and forbs both give growth responses to nitrogen fertilization. Phosphorus and sulfur may provide additional growth response, depending on the amounts available in the soil.

The purpose of this trial is to measure the yield response to nitrogen fertilization at various levels of fertilization. Each plot will have sample clippings taken at:

- 1) the end of the winter growth period, normally around February 15.

- 2) at peak standing crop which may vary from April 1 to as late as mid-May.

The trial will be refertilized and yield data obtained for 3 to 5 years to account for differences of weather from year to year. Ammonium sulfate is the material applied at rates giving 0, 30, 60, 90, 120 pounds of nitrogen per acre. Fertilizer was applied on October 30, 1985, replicated 4 times.

Results of the 1985/86 winter growth response obtained on February 11 is as follows. Four 1 square foot samples were obtained from each plot, weighed, oven dried to approximately 90% dry matter and reweighed.

WINTER GROWTH -- FEBRUARY 11, 1986

<u>TREATMENT</u>	<u>POUNDS NITROGEN</u>	<u>POUNDS DRY MATTER PER ACRE</u>
None	0	873 a
143 pounds ammonium sulfate per acre	30	1540 b
286 pounds ammonium sulfate per acre	60	1691 bc
429 pounds ammonium sulfate per acre	90	1928 cd
572 pounds ammonium sulfate per acre	120	2183 d

a, b, c, d, Average yields with the same letter following are not significantly different from each other (P less than .01)

NITROGEN RATE TRIAL
 JAY BEGUN RANCH - DEL PUERTO CANYON RD.

SPRING (TOTAL) YIELDS - APR. 28, 1986

TREATMENT	Lbs. Nitrogen	* Dry Matter Per Acre - Lbs
NONE	0	3625 -
143 Lbs. Ammonium Sulfate/Acre	30	3644 19
286 " " " "	60	3622 - 3
429 " " " "	90	4238 613
572 " " " "	120	4456 831

* No significant differences among treatments ($P < .10$)

A. N. O. V.

Source of Variation	S. S.	df	MS	F	Required F (.10)
Treatment	10,245,657.08	4	2,561,414.27	1.692	2.04
Replication	12,122,529.34	3	4,040,843.11	2.669	2.18
Sampling Error	90,847,866.60	60	1,514,131.11		
Experimental Error	34,852,877.87	12	2,904,406.49		
Total	148,068,930.89	79			

