UNIVERSITY OF CALIFORNIA
AGRICULTURAL EXTENSION SERVICE

Date: August 28, 1967
To: Harry S. Hinkley, County Director, Tuolumne County

DAVIS, CALIFORNIA

From: William E. Martin and Lester J. Berry
Title: Soils Specialist Range Specialist
Re:

You requested some time ago a summary of the data from the Jury Fertilizer Plot which we carried out together in your county. We are enclosing herewith the yield results, both from the Jury plot and from the adjacent Mariposa County plot which you helped us harvest the same day.

The data shown on the first page summarizing the P&NS Time and Source Experiments have been tabulated to show the fresh weight yield as pounds per acre when harvested. The percent dry matter was obtained by drying a grab sample from each plot and the dry yield per acre obtained by multiplying the fresh yield by the percent dry matter. In the last column we have tabulated the yields as percent of the dry yield of the untreated check.

All of these data have been examined by Lester Berry and myself in considerable detail and have been put through the Riverside computer through the courtesy of Tom Little, our Extension Biometrician. We have endeavored to squeeze data until all information therein has been wrung out. I would summarize your data roughly as follows:

Fresh weight yields were increased by phosphorus alone but slightly greater responses were obtained where sulfur had also been applied. There was no significant effect of time of phosphorus application, though the late treatments were numerically greater. Sulfur as a nutrient (either S or SO_4) alone gave some benefit but the responses were much greater where phosphorus was applied. Sulfate tended to be more effective than elemental sulfur. There was no significant effect of time of application of S.

The percent dry matter (or succulence of the forage) was affected by treatment. This we would expect, since the clovers we were stimulating have a higher percent moisture than do grasses. We can say without question that phosphorus treatment reduces the percent dry matter and did so more if applied with sulfur. Similarly, sulfur treatments tended to reduce percent dry matter but did so more if applied with phosphate.

The yields of dry matter listed in the third column show lesser increases due to treatments than did the fresh weights shown in column one. We may summarize by saying that phosphorus increased yields and that the increased yields from P were greater if applied in the presence of sulfur or sulfate. Similarly, sulfur or sulfate increased yield, but yields were greater if applied with phosphorus. There were no significant effects of time of application of either phosphorus or sulfur or of form of sulfur upon yield, although sulfate tended to give somewhat higher yields than did elemental sulfur.

I believe, Harry, that we harvested this plot a little earlier than we needed to. Certainly at this location there was no discernible difference between 500 pounds of single superphosphate and 250 pounds of sulfur-fortified treble, either applied early or applied late. We were impressed with the early performance of the sulfur fortified treble. We will want to watch this plot closely next year and would hope to get the harvest date again as we did this year. Certainly it is clearly obvious here that one must apply both phosphorus and sulfur for maximum response and that there was no measurable effect of molybdenum or any appreciable differences between sulfur sources or times of application upon first year yields as we measured them.

Encs.

cc: L. J. Berry
J. Anderson
J. Street

TIME & SOURCE OF P & S: FIRST SEASON RESULTS

County: Tuolumne Date applied: E 10/28/66 L 2/2/67

Cooperator: Jury Date harvested: 5/19/67

	Material & Rate	Material & Time Applied	Yield Fresh Wt. Lbs./Ac.	Percent Dry Matter	Yield Dry Wt. Lbs./Ac.	Yield as Percent of Untreated
1.	None	--	8065	21.19	1702	100
2.	187 lbs. TSP	P_E	10121	22.46	2273	134
3.	TSP	P_L	11863	19.28	2284	134
4.	300 lbs. Gypsum	SO_{4E}	11759	21.37	2515	148
5.	500 lbs. SSP (0-21-0-12 SO_4S)	P_ESO_{4E}	15609	17.06	2643	155
6.	Gypsum + TSP	P_LSO_{4E}	14999	18.13	2719	160
7.	50 lbs. Elemental S	S_E	8692	21.41	1862	109
8.	250 lbs. TSPS (0-40-0-20 S)	P_ES_E	13327	20.03	2670	157
9.	El. S + TSP	P_LS_E	14946	18.91	2821	166
10.	Gypsum	SO_{4L}	10818	19.95	2158	127
11.	TSP + Gypsum	P_ESO_{4L}	11950	18.63	2630	155
12.	SSP	P_LSO_{4L}	14894	18.96	2822	166
13.	El. S	S_L	11776	22.17	2615	154
14.	TSP + El. S	P_ES_L	11776	20.86	2444	144
15.	TSPS	P_LS_L	12560	19.97	2508	147
16.	TSPS + Mo	P_ES_EMo	14162	20.35	2882	169
	L.S.D. (between individual treatments)		2787	3.05	475	±28%
	Coefficient of Variation		10.8%	7.1 %	8.5%	
	Major Response		P,S,PS	P,S,PS	P,S,PS	

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