

UNIVERSITY OF CALIFORNIA  
AGRICULTURAL EXTENSION SERVICE

*LJ Bury*

Date:

To: August 24, 1967  
Walter R. Spivey, Farm Advisor, Del Norte County

DAVIS, CALIFORNIA

From:

Title: William E. Martin  
Re: Extension Soils Specialist

AUG 28 Rec'd

Dear Walt:

I am enclosing herewith the completed yield data from the Smith River large-scale fertilizer strips which you laid out last year and which I helped you harvest in June. Somewhat earlier I sent you the data on the fresh weight yields but have delayed getting the dry weight yields until you could have completed the plant species separations. We will a little later give you some chemistry on the clover and grass yields, but that is not yet completed.

The data from the Scotty Tryon strips are shown on the attached sheet. Here you will note on the fresh weight that phosphorus was the first limiting factor and that potassium was only effective after phosphorus had been applied.

You will also notice that the percent dry matter in the fresh forage was decreased by both phosphorus and by potassium where added to phosphorus. This reduction in percent dry matter, which we associate with increased succulence due to more clover, reduced the spread between the check and the fertilized treatments. This we are seeing in nearly every plot where fertilizer treatments increased the percent clover. Here it was clear that the percent clover in the forage was significantly increased by phosphorus and perhaps a little additional increase from potassium. The net effect, however, was that the biggest increase in our yields of dry material was due to the increase in clover with no really significant increase on the grass fraction.

The data from the Ulrich plot on the other side of the valley showed much the same interspecies competition. Here, yields were increased by potassium but not phosphate. The potassium fertilized forage tended to have a lower percent dry matter or greater succulence. The total dry harvest was not significantly affected by fertilization, although the percent clover was. The result of this was that we increased the yield of clover but did not affect the yield of grass.

I think you may be interested, Walt, in the results from a field plot we ran on the Mendocino coast on the McGuire ranch. A copy of this is attached for your interest, since it shows that where phosphorus was added, which greatly increased the growth of clover, we definitely made the forage much more succulent. When expressed on a fresh weight basis, phosphorus here increased on a 53 percent yield - when we took it back on a dry basis, we only had a 27 percent increase.

I was sorry not to be able to rush right over and look at your fertilizer experiment at Ulrich's next week. I do have plans with my kids to go up to Oregon. We might drop back through Smith River but don't count on it too seriously. I will be harvesting the greenhouse experiment on the Tryon soil one of these days when the plants get a little bit bigger.

WEM:gl

Encs.

Summary of 1967 Yield Data

Ulrich Fertilizer Strips

Smith River - Del Norte

Treatment	Total Yield Fresh wt. lb/ac	% Dry Matter	Yield - Dry Wt. Lb/Ac			
			Total Harvest	% Clover	Yield Clover	Grass
None	20,940	20.37	4753	21.9	919	3334
Single Super	21,409	22.23	4739	11.7	556	4184
K C L	27,924	16.88	4732	39.9	1889	2918
K Cl + Super	26,235	19.13	5012	31.3	1567	3348
L S D bet. treats. (5% level)	4965	2.41	ns	18.9	880	ns
Coefficient of Variation	10.3%	6.1%	10.7%	38%	36%	24.8%

Summary of 1967 Yield Data

Scotty Tryon Strips

Smith River - Del Norte

Treatment	Yield		Yield Dry Weight Lb/Ac	% Clover	Yield of Dry	
	Fresh Wt. Lb/Ac	% Dry Matter			Clover	Grass
None	6,027	22.63	1378	18.9	265	1114
K Cl Single	6,707	23.31	1546	16.2	252	1294
Super	10,888	19.21	2021	27.5	555	1466
K Cl + Super	14,284	17.84	2558	30.9	766	1792
L S D	1,385	2.96	505	18.6	332	677
C V	7.3	6.5	13.4	40%	36.0	23.9