

SEP 4 REC'D

UNIVERSITY OF CALIFORNIA
AGRICULTURAL EXTENSION SERVICE

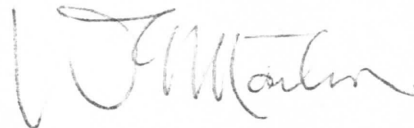
Date: September 3, 1969
To: Carl M. Wick
Butte County Farm Advisor

DAVIS, CALIFORNIA

From: William E. Martin
Title: Extension Soils Specialist
Re: Ahart

I am enclosing herewith a copy of the yield data from the Ahart plot. Our laboratory separated out the Rose Clover from the Subterranean Clover and these from the non legume fraction which we had earlier tabulated as "grass". I think you will find it interesting to note that the potassium response was almost entirely on the Subterranean Clover and that the Sub Clover competed with the Rose Clover for space with the result that the Rose Clover, if anything, gave lower yields where potassium was applied. It would have been real interesting to have run this experiment on pure populations of Rose Clover or Sub Clover rather than a mixture of the two. In any event, the data show that after phosphorus had been applied that the yields of Sub Clover more than doubled while the average effect of potassium on the Rose Clover was to reduce the yield slightly. This latter we may assume as due to inter-species competition with Sub Clover rather than a depressive effect of K per se.

What results did you get on the KCl strips in the wheat?



WEM/bp

Encl.

Bewy

SUMMARY OF YIELD DATA

AHART - K AND P RATE AND SOURCE EXPERIMENTS

1969

Fertilizer Treatment	Total Dry Matter		Rose Clover		Sub Clover		Grass	
	Check	K	Check	+ K	Check	+ K	Check	K
Check	253	292	70	61	12	16	171	215
327 Treble	3132	3292	1855	1894	699	831	577	567
275 CSPA	3187	3078	2030	1282	631	1216	526	753
480 Super	3376	3669	1331	1406	736	1723	767	538
550 CSPA	2924	3160	1571	1310	711	1235	642	615
900 Super	3014	3613	1870	1622	454	1339	690	652
1100 CSPA	2432	2712	1194	1389	457	1090	781	702
1800 Super	2903	3266	2075	1476	274	1225	527	569
<u>Av. Yield with P</u>	2995	3372	1704	1482	566	1237	653	628
Av. K Effect		+10.9%		-3.1%		+118.5%		-3.9%
F Value for K Effect		5.03*		N.S.		49.4**		N.S.

* Significant

** Highly Significant

SUMMARY OF YIELD DATA

AHART - K AND P RATE AND SOURCE EXPERIMENTS 1969

YIELDS AS POUNDS/ACRE

FERTILIZER TREATMENT	NUTRIENTS Lbs/Acre		TOTAL DRY MATTER		ROSE CLOVER		SUB CLOVER		GRASS	
	P ₂ O ₅	-S	Check	K***	Check	+K	Check	+K	Check	K
Check	0	0	253	292	70	61	12	16	171	215
327 Treble+	173	0	3132	3292	1855	1894	699	831	577	567
275 CSPS++	104	55	3187	3078	2030	1282	631	1216	526	753
480 Super+++	96	58	3376	3669	1331	1406	736	1723	767	538
550 CSPS	208	110	2924	3160	1571	1310	711	1235	642	615
900 Super	192	115	3014	3613	1870	1622	454	1339	690	652
1100 CSPS	416	220	2432	2712	1194	1389	457	1090	781	702
1800 Super	384	230	2903	3266	2075	1476	274	1225	527	569
<u>Av. Yield With P</u>			2995	3372	1704	1482	566	1237	653	628
Av. K Effect				+10.9%		-13.1%		+118.5%		-3.9%
F Value for K Effect				5.03*		n.s.		49.4**		n.s.

* Significant

** Highly Significant

*** K applied at rate of 325 KCl/Acre

+ Treble Treble Super Phosphate (TVA) 0-53-0-0

++ CSPS Sulfur Fortified Treble (Simplot) 0-38-0-20S-S

+++ Super Normal Superphosphate (Stauffer) 0-20-0-12S04-S

EFFECTS OF RATE & SOURCE OF P & S ON FORAGE PRODUCTION

MIART BROTHERS---3RD SEASON EFFECTS---APRIL 27, 1971

1968 Treatments Materials/Ac	Nutrients/Acre		Total Yield Dry lbs/Ac		Yield of Clover Dry lbs/Ac		Yield of Grass Dry lbs/Ac	
	P ₂ O ₅	S	No K	+ K	No K	+ K	No K	+ K
None	---	---	220	266	34	41	187	225
327 Treble	173	---	2126	1945	1297	1150	827	795
275 CSPS	104	55	2375	2488	1439	1512	936	976
480 Super	96	58	1602	1860	683	939	919	881
550 CSPS	208	110	3232	3562	2395	2687	837	875
960 Super	192	115	2387	2979	1489	1906	897	1072
1100 CSPS	416	220	3006	3674	2093	2690	914	984
1920 Super	384	230	2850	3377	1911	2395	939	982
<u>L.S.D. between P & PK treatments</u>			+		+			
CV			623		762			
			- 14.5%		- 25.7%		n.s.	
<u>Analysis of Variance</u> (P rate & source treatments)			<u>F values</u>		<u>F values</u>			
P rates			11.81**		7.83**			
P source			15.71**		12.44*			
P rate x source			(2.69 n.s.)		n.s.			
K effects			20.52**		10.77**			
P rate x K			n.s.		n.s.			
P source x K			n.s.		n.s.			
P rate x source x K			n.s.		n.s.			

AHART FRESH WEIGHT 1971

<u>Analysis of Variance</u>		<u>P & S Rate & Source Plots Only</u>		
<u>Source</u>	<u>Sum Squares</u>	<u>D.F.</u>	<u>Mean Square</u>	<u>F</u>
Total	762,967	35		
 <u>Rate Plots</u>				
<u>Replications</u>	2,041	2	1,021	n.s.
P rates	390,063	2	195,032	7.90*
<u>Error A</u>	98,643	4	24,660	
 <u>Source Plots</u>				
P <u>Source</u>	74,894	1	74,894	7.63*
<u>P rate</u> x <u>source</u>	18,116	2	9,058	<u>n.s.</u>
<u>Error B</u>	58,889	6	9,814	
 <u>K Plots</u>				
K effect	60,680	1	60,680	14.69**
P rate x K	7,780	2	3,890	n.s.
P source x K	860	1	860	n.s.
<u>P source</u> x <u>P rate</u> x <u>K</u>	1,472	2	711	
<u>Error C</u>	49,579	12	4,131	

AHART PLOT - BUTTE COUNTY

3rd Year Harvest-April 27, 1971

1968 TREATMENTS			1971 FRESH WEIGHT: LBS/AC	
Materials lbs/Ac	Nutrients		No K	Plus K ⁺
	P ₂ O ₅	S		
None	0	0	796	964
327 Treble*	173	---	7359	6987
275 CSPS**	104	55	7922	8439
450 Super***	96	58	5547	6447
550 CSPS	208	110	10954	12371
900 Super	192	115	8427	10698
1100 CSPS	416	220	10512	12359
1800 Super	384	230	10135	11767
LSD 5% P treatments only			652	652

+ 325 KCl/Ac

* 0-53-00 TVA Treble

** Sulfur Fortified Treble - Simplot 0-38-0-20- S-S

*** Normal Superphosphate - Stauffer 0-21-0-12 SO₄+S