

PROGRESS REPORT
ALAMEDA COUNTY

Project Numbers _____
State Project No. _____
County Project No. _____

Name of Project: Pasture Fertilization Trials

Nineteen pasture fertilization plots were active--either for test, demonstration, or observation in 1950. These were in co-operation with Davilla & Fields, L. J. Tescher, and Herman Koopman, all of Pleasanton; Armand Bankhead, Joe Medina, Bertram Christensen, Cliff Wissler, and Chester Stanley, all of Livermore; Robert Zwissig of Irvington; J. L. Martin, Guy Warren, Lew Galbraith, and Andrew Garin, all of Hayward; Carl Zwissig and L. E. Silva of Decoto; John Coelho and Ed Chadbourne of Mission San Jose; H. W. Kolb of Dublin; and Bill Barnes of San Leandro.

The Zwissig plot, on irrigated pasture, and the Kolb plot, on dry land pasture, were micronutrient plots established in co-operation with the Experiment Station. There were no observable differences in these plots with one exception. At the Kolb plot, the nitrogen gave a boost to grass growth the past, or second, season. No harvestings were made. It was found that the yellow leaf mottling on Ladino clover at Zwissig's was due to a virus disease and not a nutrient deficiency.

Results from harvested plots on dry land were as follows:

1. In the Koopman and Bankhead plots, forage production was increased from 75 to 100 per cent by the addition of fifty pounds of nitrogen per acre. The addition of 400 pounds of treble superphosphate per acre or 400 pounds of gypsum per acre did not cause any significant increase in forage production.

2. In the Warren plot, the application of 50# of nitrogen per acre increased forage production approximately 25%. The addition of 400# of single superphosphate per acre or 400# of gypsum per acre caused no significant increase in forage production.

3. In the Galbraith plot, the application of 50# of nitrogen in 1949 increased forage production approximately 50%. Without additional fertilizer, growth in this plot was increased 25% in 1950. In 1949, nitrogen and phosphorus in combination increased forage production almost 100%. In 1950, with no added fertilizer, observations showed a smaller increase from this treatment. Yields, however, showed no benefit the second season after adding nitrogen and phosphorus together.

4. In the Chadbourn plot, 50# of nitrogen per acre increased oat and vetch production by nearly 100%. The addition of 400# of single superphosphate/a or 400# gypsum/a was of no benefit to forage production. The nitrogen response was in increased oat growth, with no increase in vetch growth.

Results on irrigated pasture were as follows:

Yields from the Tescher plot showed that fertilization with 50# of nitrogen per acre more than doubled pasture production. Again, phosphorus or sulfur did not increase forage production.

No treatment in any plot caused a marked increase in the growth of bur clover.

The effect of nitrogen was solely on the annual grasses and filaree.

Until more trials are conducted, no definite recommendations for fertilizing dry land or irrigated pastures are being made.

Effect of Fertilization on Relative Yield of Dry Land Pastures
in Alameda County 1949-50

Yields Expressed as Percentage of Untreated Area

Plot	Tescher*	Chadbourne	Koopman	Bankhead	Warren	Galbraith
Check	100	100	100	100	100	100
N	298	258	182	180	120	102
S	128	98	115	100	115	81
P	159	102	82	129	112	96
K						68
NS	318	191	224	181	117	154
NP	243	183	236	154	128	155
NK						136
SK						75
PK						79
SP	109	103	78	154	153	79
NSK						126
NPK						173
SPK						108
NSP	198	224	235	234	114	109
NSPK						130

Results of pasture fertilization trials were distributed in 1949, and at farmers' requests, similar trials were continued in 1950.

Five plots on dry land pastures and one on irrigated pasture were harvested, with yields being taken on a hay basis, nitrogen, phosphorus, and sulfur were the fertilizer nutrients used.

Whether pasture fertilization will be profitable must be determined by carefully conducted fertilization and feeding trials.

Using hay yields as a basis, while not entirely accurate, fertilization was profitable on some plots, not on others.