

State Cooperative Soil - Vegetation Survey

CALIFORNIA DIVISION OF FORESTRY
Department of Conservation, The Resources Agency

PACIFIC SOUTHWEST FOREST AND RANGE EXPERIMENT STATION
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SOIL FERTILITY STUDIES: NO. 13 - Red Bluff series

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This leaflet, a product of the Soil-Vegetation Survey, is one of a series giving results of greenhouse pot tests and field fertilizer trials on soils primarily associated with range lands. The data indicate fertility status with regard to nitrogen, phosphorus, and sulfur. Field trials also give preliminary data on potential range forage production and species changes resulting from fertilizer treatments. Methods are detailed in: Powell, W. Robert. 1964. Procedures used in range land soil fertility studies. State Cooperative Soil-Vegetation Survey, Calif. Division of Forestry, Sacramento, 15 pp.

GREENHOUSE POT TESTS

Sample A (FA61-45-116)
Shasta County, Quad 23D-3
NE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 19, T31N, R3W, MDMB
Nearly level; 530 feet
Woodland-grass
Collected 18 April 1961
Tested 17 Dec. 1961 - 16 Feb. 1962

Sample B (FA61-45-117)
Shasta County, Quad 23C-4
SW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 25, T31N, R4W, MDMB
Nearly level; 470 feet
Grassland
Collected 18 April 1961
Tested 17 Dec. 1961 - 16 Feb. 1962

Treatment	Yield
None	2.4 a
S	2.8 a
P	2.4 a
PS	3.8 a
N	2.0 a
NS	6.8 a
NP	15.6 b
NPS	28.8 c

Treatment	Yield
None	2.8 a
S	3.0 a
P	2.5 a
PS	3.8 a
N	6.8 a
NS	3.2 a
NP	12.2 b
NPS	20.0 c

(N = 200, P = 88, S = 100 lb/A)
(Yield, decigrams per pot, oven-dry)

Sample C (FA61-45-119)
 Shasta County, Quad 32B-2
 North $\frac{1}{4}$ corner Sec. 6, T29N, R5W, MDMB
 East - 5%; 715 feet
 Woodland-grass
 Collected 18 April 1961
 Tested September-November 1961

Sample D (FA56-52-11)
 Tehama County, Quad 31D-1
 SE $\frac{1}{4}$ Sec. 15, T27N, R6W, MDMB
 Near level; 1100 feet
 Woodland-grass
 Collected 20 September 1956
 Tested 15 June - 12 August 1957

Treatment	Yield
None	3.6 a
S	4.0 a
P	5.6 a
PS	5.6 a
N	7.6 ab
NS	11.0 b
NP	27.2 c
NPS	31.0 d

Treatment	Yield
None	24.8 a
P	34.2 b
N	45.2 c
NS	48.2 c
NP	74.2 d
NPS	71.8 d

COMMENTS:

Samples A and B: A strong primary complementary response to nitrogen and phosphorus; a strong third order response to sulfur.

Sample C: Similar to A and B but a milder response to sulfur.

Sample D: Primary and secondary responses to nitrogen and phosphorus; no sulfur response.