

PROJECT # 2: Experimental Forest and Shade Tree Planting on Alkali Soils. Lupul

SCOPE: To determine some forest and shade trees best adapted for planting in alkali soils of southern Idaho. There is need for such information; requests are received in this regard from people interested in making idle acres productive.

STATUS: On April 4, 1928, twenty species of trees (13 hardwoods and seven conifers) were planted on an alkali tract near Caldwell. Six trees of each species were alternated on a plot known to contain alkali, three of each of which were planted without a sand mulch and designated Series a, b, c, and the other three were planted in a sand mulch and designated Series d, e, f. Also three trees of each species were alternated on a plot known to be comparatively free from alkali, designated Series g, h, i, known as the "control plot". 180 trees were planted for this experiment in 1928, and enclosed by fencing. On April 6-8, 1929, an additional planting of three trees of each species was established in continuance with the "alkali planting" and designated Series j, k, l. These trees were planted in post holes drilled to an average depth of six feet and backfilled with sand. At this time also and in April, 1930 and 1931 every tree recorded as dead at the end of each growing season was replaced in order to obtain a larger numerical basis. The total planted for the four years is 542. Soil samples were taken at various places to determine the alkali content. The conifers show a very poor survival. The sand back fill in the "alkali" soil helped the survival at least until the trees' roots outgrew the sand area. Some hardwood trees on the "control plot" made excellent growth.

RESULTS:

Percentage Survival at end of 1931 growing season:

	<u>Alkali plot</u>	<u>Control plot</u>
Silver poplar	75	100
Weeping willow	30	100
White ash	53	100
Siberian elm	42	100
Black locust	32	100
Russian olive	47	100
White elm	50	75
Box elder	64	75
Honey locust	40	75
Austrian pine	20	25
American arborvitae	10	37
Norway spruce	0	50
Norway maple	35	60
European Mt. ash	8	49
Silver maple	22	50
English oak	33	75
Western yellow pine	0	39
Scotch pine	7	10
Douglas fir	3	37
Jack pine	3	16

FURTHER WORK: Periodic observations; replacement of trees; soil analyses.

DATE OF

COMPLETION: Indefinite; dependent upon condition of trees.

ASSIGNMENT:

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