GROWTH OF STRAWBERRY CLOVER VARIETIES AND OF ALFALFA AND LADINO CLOVER AS AFFECTED BY SALT

H. G. GAUCH AND O. C. MAGISTAD

IN RECENT years considerable interest has been shown in strawberry clover, trifolium fragiferum, because of its ability to grow under conditions of moderate salinity, and because of its applicability in the reclamation of water-logged, saline soils now considered as waste lands in the western United States (9, 13). This legume, one of the more recent clover immigrants, is a perennial and native of eastern Mediterranean countries and of southern Asia Minor. It is believed to possess several advantages over alfalfa in that apparently it will tolerate more salinity (1, 11), will withstand flooding-over for as much as two months at a time (9), is shallow-rooted, and may be used to replace alfalfa when the prevalence of dwarf disease makes the growing of alfalfa no longer profitable or possible.

Kearney and Scofield (12) stated that strawberry clover, “is as tolerant of salinity as most of the native or introduced grasses, or even more tolerant”. Ahi and Powers (1), working with sand and solution cultures, found that alfalfa and strawberry clover would tolerate 2,800 and 5,600 p.p.m. of salt obtained by diluting sea water, respectively. They concluded that, “strawberry clover was found the most promising resistant legume for salinity, followed by sweet clover, then alfalfa”.

The Bureau of Plant Industry and others have made several introductions of strawberry clover and a number of strains have since been identified in the states ranging from Washington to Colorado. A comparison of some of these strains for their tolerance to salinity was suggested. In order to compare the behavior of strawberry clover under saline conditions with other legumes, alfalfa and Ladino clover were included in these tests.

Alfalfa is the most widely grown forage crop in the western United States and, as in this study, is commonly included as a standard in tests of forage crops (11). Harris (7) cites considerable data on the tolerance of alfalfa to alkali, giving the maximum salt tolerated equal to 6,000 p.p.m. of sodium sulfate in the soil. More recently, in a survey (17) of salinity conditions in the Pecos River Valley of New Mexico and Texas it was found that alfalfa growing well where the soil solution extracts (extract from a soil at the saturation

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2Assistant Physiologist and Director, respectively.

3Figures in parenthesis refer to “Literature Cited”, p. 879.

4Suggested by Dr. E. A. Hollowell, Senior Agronomist, Division of Forage Crops and Diseases, Washington, D. C.