EFFECT OF HYDROGEN-ION CONCENTRATION UPON GROWTH AND DEVELOPMENT OF HALOGETON

FEW weeds have received more publicity in recent years than has halogeton (Halogeton glomeratus), an annual poisonous range plant. New infestations or discovery of old infestations are continually being reported. The weed, now in California, Colorado, Idaho, Montana, Nevada, Utah, and Wyoming, is estimated to cover over 1½ million acres of semi-arid rangeland. The present infestation is of much concern; however, of greater importance is the potential spread of this undesirable range plant. The possibility of halogeton spreading to more productive lands poses a constant threat. While the weed has not been found growing on acid soils, there is no reported evidence that it will or will not thrive in an acid environment. It has not been studied under greenhouse conditions due to the difficulty of maintaining a normal artificial environment. In an effort to study the adaptability of halogeton and to determine the effect of hydrogen-ion concentration upon growth and accumulation of oxalates, experiments using nutrient water cultures were conducted under greenhouse conditions.

Germination studies were instigated to determine the alkaline or acid tolerance of germinating halogeton. Fifteen normal seeds were placed upon blotter paper and each blotter moistened with a nutrient solution which had been previously adjusted to an acid or alkaline pH. The following pH values were used: 4.0, 7.0, 8.4 and 9.0. A total of four replications were used for each experiment and the tests were repeated three times. Three days after germination the healthy halogeton seedlings were

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