

secondary-alcohol sulfates in this way has been mentioned by H. R. Offord and L. P. Winslow, of California, in *Northwest Science*. They tested various proprietary and other preparations and give a list in descending efficiency of the spreaders found most satisfactory with sodium chlorate.

Tergitol 7, a commercial preparation of a sodium secondary-alcohol sulfate, in concentrations of 0.01 to 0.1 percent was found to be the best of these products. Spreaders may also be used with other poison sprays, but the authors think it probable that the order of efficiency may vary with different materials.

RESPONSE OF DIFFERENT STRAINS OF KENTUCKY BLUEGRASS TO CUTTING

Work done on the effect of cutting on grass has invariably shown that frequent and severe cutting reduces the growth of foliage, roots, and rhizomes. For the most part, such work has been done with mixed populations of different grasses, but A. O. Kuhn and W. B. Kemp of the Maryland Agricultural Experiment Station have studied the effect of cutting on contrasting strains of Kentucky bluegrass.

One strain was tall with long leaves, the other an extremely low-

growing type. Both strains had been grown at the Maryland station under uniform soil conditions for three years prior to the starting of the experiment. The methods followed and the results secured have been described in the *Journal of the American Society of Agronomy*.

In the series of experiments reported here proportionate amounts of foliage were removed from 24 plants of each of the two strains. Five cutting treatments were used as follows: none, mid-blade, 1 inch beyond the ligule (the point at which the leaf blade joins the sheath), at the ligule, and below the ligule. Each leaf was cut separately on each plant at 2-week intervals beginning April 28, and the clippings were dried and weighed. The average height resulting from each removal of clippings on both strains was determined by a number of measurements of the tops remaining after clippings were made. At the completion of the experiment the plants were lifted, dried at 100° F. for a week, and weighed. The root, rhizome, and forage production in grams were recorded. Under the heading "Forage," the authors give the total production of clippings throughout the season as well as the foliage left on the plants at the end of the experiment.

Increasing severity of defoliation

was accompanied by similar and decidedly significant decreases in the production of roots, rhizomes, and tops in both the tall-growing and low-growing strains when the same proportions of foliage were removed from each strain. When cut at the ligule, for instance, the reduction in root production was 87 and 80 percent, that in rhizome production was 82 and 86 percent, and that in top production was 44 and 29 percent for the tall-growing and low-growing strains, respectively. The weight of the season's clippings also decreased equally in the two strains, with increase in severity of defoliation.

The removal of comparable proportions of foliage, however, resulted in strikingly different heights of cut in the two strains. For instance, clipping the leaves of the tall-growing strain just above the ligule resulted in a mean height of 1.4 inches, while a comparable height of 1.6 inches was only attained by the plants of the low-growing strain when they were permitted to grow unclipped. At these two comparable heights of top growth remaining on the plants after clipping, the low-growing strain produced approximately one and a half times as much weight of tops, more than five times as much weight of roots, and more than eight

times as much weight of rhizomes as the tall-growing strain.

The conclusion is drawn, therefore, that when compared on the basis of comparable height of cut rather than comparable proportions of foliage removed, the low-growing strain produced strikingly more tops, roots, and rhizomes than did the tall-growing strain cut to a similar height. For practical purposes, then, a low-growing strain will produce a much better turf than taller strains.

Their table indicates that when neither strain was cut the tall-growing plants produced far more "forage" than the low-growing ones. From the standpoint of turf, the lower production of forage is an advantage because it necessitates less cutting during the season.

SULFUR MAY IMPROVE THE PHYSICAL CONDITION OF A HEAVY CLAY SOIL

Owing to the high proportion of the colloidal fraction, some heavy clay soils are difficult to work. They drain poorly and remain wet in spite of drainage lines. The remedy is to flocculate the soil so as to produce a crumb structure. In farm practice this is often done by a liberal use of lime. Since lime tends to encourage certain weeds and earthworms, R. B.