

The Kansas experiment comprises 86 plots each 10 feet square arranged in a solid block 100 feet square. In addition to the turf plots, several nursery rows are maintained for identification purposes and to supply planting material. On these plots 18 varieties and strains of grass are being tested, consisting of Kentucky bluegrass, redtop, buffalo grass, and 15 strains of bent. The Kentucky bluegrass and 1 series of 8 plots, making an area 10 feet wide and 80 feet long comprising 8 strains of bent, are cut at lawn or fairway height. This is done to determine the adaptability of the bents for lawns in this locality. The Kentucky bluegrass must all be cut high, because it is quickly destroyed by close mowing in this section. The remaining 63 plots are kept cut close with a putting green mower. Forty-two plots are devoted to tests of fertilizers. These consist of duplicate series of 7 plots each of bluegrass, German mixed bent, and Washington creeping bent. Each fertilizer treatment is applied cross-wise of the series in strips 10 feet wide, so that duplicate plots of bluegrass, mixed bent, and Washington creeping bent receive the same treatment. The remaining 21 plots of the 63 that are cut with the putting green mower receive compost and sulphate of ammonia.

The strains thus treated consist of the following: Washington, Metropolitan, Columbia, Virginia, Arlington, Vermont, Acme velvet, seaside, Cocoos, Astoria, Narragansett, Rhode Island mixed bent, and redtop. Buffalo grass was originally included in this list, but owing to its failure to respond favorably to fertilizer and compost treatments attempts to make a putting turf of Buffalo grass have been abandoned. It may, however, be of interest to state that, under conditions of drouth as exist in central and western Kansas, Buffalo grass is well suited to fairways. It forms a firm sod, is extremely resistant to drouth, and is not injured by frequent mowing.

For the past two seasons experiments have been in progress to find a way to exterminate white clover from the turf garden by means of chemical sprays. Various chemicals recognized as herbicides and used in weed eradication have been tried. The results have been sufficiently promising to warrant a continuation of the work.

Very few projects at the Kansas Agricultural Experiment Station have attracted wider attention and interest than the turf grass experiments. The grass garden attracts many visitors and frequent inquiries are received through the mail regarding the bent grasses for lawns and putting greens. It is the unanimous opinion of those associated with the work at this station that it is fulfilling its purpose by supplying much needed and valuable information regarding turf grasses for this section of the country.

Turf Studies at the Central Experimental Farm, Ottawa

By G. P. McRostie

Our special experimental work with turf grasses was begun in the spring of 1924 by request of the Royal Canadian Golf Association, although previous to that time we had maintained a collection of bent grasses in the forage plant division of our regular work. There is now an area of about $1\frac{3}{4}$ acres devoted to this special turf work. So far the expense of the work has been taken care of solely with Federal funds, but cooperative work with golf clubs is now being inaugurated.

Centers for the multiplication and distribution of the most desirable strains of the bent grasses are also being established. In 1928 we distributed about 20 tons of stolons from the increase plots at the Central Experimental Farm at Ottawa.

Our soil is a sandy clay loam. The work now in progress includes experiments with different fertilizers, comparative tests of strains of creeping bent and velvet bent, comparative tests of seedsmen's mixtures and bent grass seed, and tests of various worm exterminators. As yet no experiments in disease control have been started, nor in heights of cutting. We keep about $\frac{1}{2}$ acre cut at putting green height and $\frac{1}{4}$ acre at lawn or fairway height.

Turf Experiments at the New Jersey State Station

By Howard B. Sprague

The first definite experimental work on golf turf at the State Agricultural Experiment Station, New Brunswick, was started in August, 1925, with the assistance of the late Dr. C. V. Piper. At that time an area of about 10,000 square feet was planted to stolons of Virginia bent grass and 1,000 square feet to stolons of Metropolitan bent grass. In the early summer of 1926, the area in Virginia bent was laid off in plots 10 by 10 feet in size.

Twelve types of fertilization were selected for study, and each of these was used separately on 8 different plots, thus making 8 series of plots with each series containing all 12 of the treatments. The treatments are as follows: No fertilizer, sulphate of ammonia, nitrate of soda, Ammo-phos, complete fertilizer, alfalfa meal, bone meal, nitrate of ammonia with sulphur at 2 rates (to make the soil acid), and nitrate of ammonia with lime at 2 rates (to make the soil alkaline). The fertilizer was first applied in the summer of 1926, and has since been added at equal rates of nitrogen per plot per season. These plots yield data as to the relative value of these various nitrogenous fertilizers.

The first 3 of the 8 series of plots noted above are being used to test the effect of different proportions of sand in the top-dressing. Series 4 receives 15 pounds of arsenate of lead per 1,000 square feet during the season, the material being applied in the top-dressing. Series 5 is used for observations on diseases. Series 6, 7, and 8 have been set aside to test the long-time effect of the fertilizers used on soil acidity, abundance of weeds, abundance of clover, annual blue-grass, number of wormcasts, and the vigor and color of the grass.

In addition to the fertilizers listed above, such materials as sewage sludge, Nitrophoska, castor-bean pomace, and sulphate of ammonia in varying amounts are being tested on single plots.

The area in Metropolitan bent is being used to compare urea and cottonseed meal with sulphate of ammonia. All of the fertilizer plots on both Virginia and Metropolitan bent receive top-dressings made up of $\frac{2}{3}$ topsoil and $\frac{1}{3}$ sand. No organic matter is added, since this would tend to mask the effect of the fertilizers.

An additional area of Virginia bent is being used to compare the relative values of mushroom soil, barnyard manure, peat-humus, sewage sludge, and peat-moss manure as compost materials.