

The area devoted to turf garden is about  $1\frac{1}{4}$  acres. The soil for project 1 is gravelly loam over gravel; projects 2 and 3, light clay loam over hardpan; project 5, deep, light, sandy loam over yellow sand; project 6, clay loam over clay and hardpan.

These plots are valuable adjuncts to the teaching of turf culture and are visited by many persons during the summer months.

## Experiments with Turf Grasses in Kansas

By J. W. Zahnley

In the summer of 1924, the United States Golf Association Green Section, through its chairman, Dr. Charles V. Piper, prepared plans for a series of experiments with turf grasses in cooperation with the department of agronomy of the Kansas Agricultural Experiment Station. The first plantings were made in the fall of that year. Since this beginning, the work has expanded and, under the direction of Dr. R. A. Oakley and Mr. H. L. Westover, has become an interesting and valuable experimental project. These experiments are financed cooperatively by the United States Golf Association Green Section and the State of Kansas. The Green Section contributes \$250 annually toward the support of the work. The State sets aside \$150 and in addition furnishes land, water for irrigation, horse labor, and compost material, and designates a member of the experiment station staff to direct the work. Hand labor, special equipment, and supplies are paid for from this \$400.



Turf garden at the Kansas Agricultural Experiment Station

The Kansas turf garden is located on the campus of the Kansas State Agricultural College, at Manhattan. The soil is a loam of the Wabash series, second bottom, nearly level, very fertile, and with fair drainage. The area is nearly surrounded by timber and subject to heavy dews which frequently remain on the grass until nearly noon except in very dry weather. Perhaps it is due to this location that considerable trouble is experienced every year with brown-patch disease.

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.

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## 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.