Turf Studies at the Florida Experiment Station

By Charles R. Enlow

The inauguration of experimental work with turf grasses at the Florida Experiment Station, at Gainesville, dates back to 1922, when a series of lawn plots were set out. This particular work has grown, until we now have 15 plots being maintained under lawn conditions. Our turf plots at present cover about ½ acre of land, but in addition we have 18 or 20 acres of land devoted to pasture experiments and from which we expect to obtain valuable fairway information. A contribution of $900 a year toward the expense of the work is made by the United States Golf Association, additional funds being contributed, as needed, by the Florida Experiment Station. Our prevailing soil at Gainesville is Norfolk sand. In places we have stripped this to a depth of four inches and have substituted other kinds of soil. Our experimental work has consisted chiefly of testing a wide variety of grasses and many different fertilizers, also the seeding of winter grasses on permanent turf and alone. Approximately ¾ of the area in plots is cut with the putting green mower and the remainder with the lawn mower, the areas in pasture grasses being kept down with a horse-drawn mowing machine. A weed-control experiment is being conducted on the 15 lawn plots, consisting of a comparison of the effects of sulphate of ammonia and nitrate of soda, the former being applied at the rate of 1,000 pounds per acre per year, and the latter at 1,290 pounds. The applications are made once a month, and are equivalent to about 2 pounds of sulphate of ammonia and 2½ pounds of nitrate of soda per 1,000 square feet at each application. On November 2, 1928, these lawn plots were planted with mixtures of winter grasses, consisting chiefly of Italian rye grass.

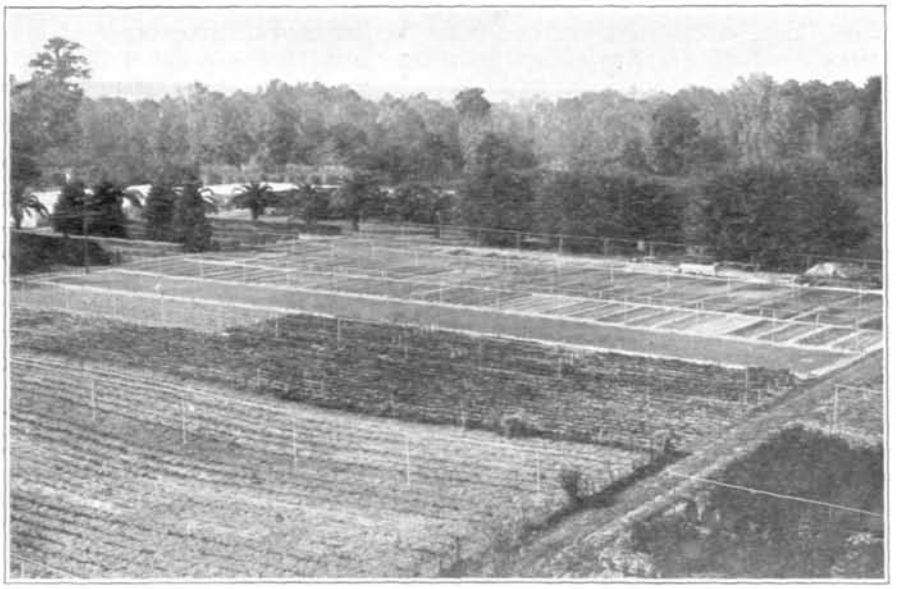
In April, 1925, our first fine turf plots were started. These consist of 5 plots, 10 by 25 feet in size, one-half of each plot being Norfolk sand and one-half Gainesville clay loam. They are planted with Atlanta Bermuda grass, Arizona Bermuda grass, St. Lucie grass, blue couch grass, and Manila grass, and are kept in putting green condition.

In February, 1926, 22 plots were set out for testing rates of application of sulphate of ammonia. These plots are 5 by 22 feet in size and are kept in putting green condition. There are 10 plots of Atlanta Bermuda grass, 7 of blue couch grass, and 5 of Manila grass. Two plots of blue couch grass and 2 of Atlanta Bermuda grass are left unfertilized as check plots.

A solid block of Bermuda grass was seeded in March, 1928, for testing different fertilizers. It is kept in putting green condition. A portion is divided into 18 plots for a source of nitrogen test, the following fertilizers being used: urea, cyanamid, calurea, nitrate of calcium, leuna saltpeter, sulphate of ammonia, nitrate of soda, phosphate of ammonia, dried blood, tankage, cottonseed meal, castor bean meal, poultry manure, and tung oil meal. Four of the plots are left unfertilized as check plots. A comparison of six special commercial fertilizers sold under trade names is also being made on this block of Bermuda grass, the applications being made four times a year. An inorganic equivalent of each of these special fertilizers is used on other plots, and on still others another equivalent of each is used in which one-half of the nitrogen is inorganic and the other half organic.

We also have a demonstration putting green, 25 by 36 feet in size, which was set out with Atlanta Bermuda grass on August 15, 1928. This is on Gainesville clay loam, and is fertilized as needed.

Our winter turf seedings for the current winter were made November 1, 1928. Four of our Atlanta Bermuda lawn plots were seeded respectively with Italian rye grass, Kentucky bluegrass, redtop, and bulbous bluegrass, leaving a small area of each plot unseeded as a check. Our solid block of Bermuda turf was seeded over its entire area with Italian rye grass. Our demonstration putting green has



Bird's-eye view of the experimental plots at Gainesville, Fla. Photograph taken December 6, 1928, from a water tower

The long strip near the center of the picture is the solid block of Bermuda grass which was seeded with Italian rye grass November 1. Next beyond this is seen a tier of 30 fine turf plots. The first 8 plots in the right of this tier are the winter grasses seeded alone. The bare plot fifth from the right is bulbous bluegrass carried over the summer but which failed to come up. Near the center of this tier are seen three dark plots; these received the heavy applications of sulphate of ammonia. The next tier consists of lawn plots, and just beyond this is another tier of fine turf plots, at the extreme left of which is the demonstration putting green

been divided into quarters and seeded to mixtures of redtop, Kentucky bluegrass, and Italian rye grass in different proportions. In addition to these seedings of winter grasses on permanent turf, we seeded 8 plots alone, consisting of redtop, Italian rye grass, perennial rye grass, Oregon rye grass, bulbous bluegrass, Kentucky bluegrass, annual bluegrass (*Poa annua*), and a seaside bent. Each of these plots receives two different fertilizers. In the fall of 1927 we also planted considerable bulbous bluegrass in order to ascertain the possibility of its becoming a permanent winter grass for both putting greens and fairways.

Miscellaneous experiments in weed control have been conducted with a mixture of sulphate of iron and sulphate of ammonia, in the eradication of nut grass and other pest grasses with chlorate of soda, and in the control of a small black billbug (*Calandra inaequalis*). Also some work is being done with various strains of centipede grass as possibilities for lawns and fairways.