



Dr. H. B. Sprague of N. J. Agric. college describing turf plots at Experiment station to members of the N. J. Golf association

Jersey Turf Day Success Result of Practical Program

TURF FIELD DAY at the New Jersey agricultural experiment station, June 15, was sponsored jointly by the New Jersey Greenkeepers' association, the New Jersey State Golf association and the state's agricultural experiment station. The event drew an attendance of over 200. More than 100 of these were greenkeepers. The others were professionals, green-committeemen, park superintendents, estate owners, lawn owners, golf course equipment and supply dealers, and others interested in turf management.

The discussion of field experiments was begun by Dr. Howard B. Sprague, who is in charge of turf research at the New Jersey agricultural experiment station. Attention was called to the adaptation of turf plants to the different types of soils and the climate of the region represented by New Jersey. This was followed by a discussion of the value of various kinds of nitrogenous fertilizers on bent grass turf cut at putting-green length. The effect of these treatments on the abundance of weeds, clover, *Poa annua*, and vigor of the turf was noted. The use of lead arsenate in the control of earthworms and white

grubs was mentioned, and the safety with which this chemical may be used with other fertilizers was discussed. Following this, the tests on the relative value of nitrogen, phosphorus, potassium, and lime for bent grass alone and in various combinations was noted. The results of the foregoing experiments for earlier years have been reported in New Jersey Agricultural Experiment Station Bulletin 497.

Compare Putting Grasses

The comparison of ten important putting green grasses on plots large enough for actual putting attracted considerable attention. A number of those attending brought clubs and balls with them and tried out the various grasses. Velvet bent and Metropolitan creeping bent seemed to be the most popular.

The discussion of manure substitutes for improving the physical condition of soils followed the test of the putting-green grasses. Green house and field experiments with five types of organic matter, covering a period of two years, were reported on, and the possibility of satisfactorily substituting peat and peaty materials was of

considerable interest to those in attendance.

Mr. Evaul, associate in turf management, conducted the group over the experiments on the comparison of 12 important soil types which have been collected from various parts of the state, and placed side by side in plots given identical treatment. A similar experiment in which eight soil classes varying in texture from sand to clay were also observed. Marked differences in the inherent ability of the various soils to produce turf were apparent.

Study Seeds and Fertilizers

A series of 56 plots showing the effect of different seed mixtures and of various fertilizer treatment on turf for fairways, lawns and parks, was next on the program. This was followed by a survey of the standardized soil mixtures which were made in the fall of 1930 and seeded in the spring of 1931. The nursery, used for testing selections of various strains of creeping bent and velvet bent, was visited by the group. The afternoon program was terminated by a presentation of Dr. Sprague's experiments with the growth of grass in sand and solution cultures under controlled conditions where all of the elements required for plant growth are supplied without the need of any soil.

Search for Perfect Green

Following a dinner at Hotel Woodrow Wilson, the evening program began with Robert F. Arnott, chairman of the New Jersey State Golf association Green section, in charge. Dr. John Monteith, Jr., of the U. S. G. A. Green section discussed velvet bent grass in considerable detail. He stated that the ideal turf plant had not yet been found. Velvet bent, although one of the best grasses for greens, and likewise valuable for other turf, was not regarded as being the perfect grass. Much work still remains to be done before velvet bent may be used satisfactorily under all conditions. The U. S. G. A. Green section has for several years conducted trials of various strains of velvet bent grasses. Thirty of these are being tested at Washington in the turf gardens. There is some doubt as to the ability of velvet bent to stand the hard usage expected of grass on greens. There are many different strains of velvet bent, some of which are more valuable than others. As a group, the velvet bent grasses will stand considerable neglect in the way of failure to mow, failure to fertilize properly, etc. However, when growth

becomes poor, velvet bent is difficult to bring back to health. In spite of these disadvantages, golfers as a whole seem to prefer it for putting. The excellence of the surface seems to give the player confidence, and he easily holes putts which would be difficult under other conditions. The apparent readiness with which the grass is damaged by pitch shots is due to the perfection of the turf and not to any real difference between the ability of velvet and other types of bent to stand hard usage.

Nitrate Increases Seed Yield

Dr. T. E. Odland of the Rhode Island experiment station discussed, among other things, the production of bent grass seed. Rhode Island produces a considerable amount of bent grass seed and has done so since early colonial times. Some velvet bent is now being produced in that state. Experiments are being conducted to determine the quantity of seed produced by the various grasses, as well as their ability to breed true to form. Seed yields vary from 200 to 35 pounds per acre under Rhode Island conditions. Some strains have much greater capacity for seed production than others. In cases of Rhode Island bents, fertilization with nitrate was most important in increasing seed yields. Greenkeepers were encouraged to produce seed of their prize strains for their own use on golf courses. Dr. Odland likewise discussed briefly the experiments on increasing the acidity of the soil for control of weeds. He expressed the opinion that the acid theory of weed control had been over-emphasized, and that the originator of the experiments at Rhode Island had never intended that the information should be used in the manner commonly accepted. He called attention to the undesirability of developing excessive acidity for growth of grass.

Golf's Future in Social Scheme

Dr. Jacob G. Lipman, director of the New Jersey Agricultural experiment station, gave an interesting survey of the place which golf courses fill in our social system. Calling attention to the tendency for reducing the hours of labor in an effort to provide employment for more people, Dr. Lipman stated that it was highly essential that suitable utilization of this free time be provided. Wholesome recreation is one of the most important things in the proper utilization of spare time, particularly for young people. It is well known that outdoor recreation is of great importance in

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the correction of juvenile delinquency, and the reduction of crime. Dr. Lipman also called attention to the greater appreciation of the proper use of natural resources as a means of making conditions more suitable for human lives. Within the past 15 years forests, parks, lakes, streams, etc., have been developed, not only to provide against waste of natural resources, but to create an environment which would be helpful to all classes of people. Golf courses have been important in providing wholesome recreation and in the development of our natural resources.

The evening program was concluded by a discussion of turf problems by Dr. Sprague. The point was made that turf research at the New Jersey experiment station was not only solving problems for the golf courses but likewise for the turf of parks, cemeteries, estates, lawns, etc. The increasing number of people attending the turf field days in successive years is adequate proof of the growing demand for information on these problems.

Attention was called to the necessity for additional information before proper utilization of velvet bent grass can be accomplished. Although velvet bent is not the ideal turf, it has a great many desirable characteristics not possessed by other species of grass. Before the general use of velvet bent can be realized, there must be a better understanding of conditions necessary for the growth of the plant. Propagation of the stolons, although successful with creeping bent, does not appear to be a practical thing for velvet bent because of the slowness of rooting. Experiments have also shown that velvet bent will not spread rapidly enough to permit a thin planting of stolons. For this reason selections of velvet made in different parts of the country may have a rather limited value. In order to have proper utilization of the grass, it will be necessary to develop commercial sources of seed, Sprague said. Conditions underlying successful seed production are now being investigated at New Jersey as well as at other stations, and a breeding program is well under way to determine the constancy of various strains when propagated from seed. Several hundred selections are being grown which will furnish evidence on this point and likewise serve to fix desirable characters. The combining of desirable characters of several strains will be made possible by hybridizing and further selection. Attention was called to the need for several years' time for the completion of the program.

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