

# Rhode Island Field Day

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Rhode Island State Experiment station

The Rhode Island Agricultural Experiment Station, Kingston, R. I., Fifteenth Annual Greenkeepers Field Day was attended by more than 150 greenkeepers from New Jersey, Pennsylvania, New York, Connecticut, New Hampshire, Vermont, Maine, Massachusetts, and Rhode Island.

New England dealers exhibited and demonstrated labor-saving machinery and materials pertaining to turf culture, construction and maintenance.

Inspection and discussion of the experimental putting green and lawn plots was led by Dr. Keil, pathologist; Dr. Kerr, entomologist; Mr. Allen, turf foreman; and Dr. DeFrance.

Some points of interest discussed were:

In the test of improved selections of creeping, colonial and velvet bents obtained from all over the world for comparison, and adaptation to New England conditions, it has been found that Piper velvet bent and selections of individual plants of Piper rate first place based on the study of quality factors such as color, density, texture, vigor, resistance to invasion of weeds and other grasses, disease and insect injury. Kernwood and Merion velvet No. 2 rated second and third place. Among the selections of creeping bent, C-19 and C-15 were outstanding. Local selections of Rhode Island bent lead among the Colonial group.

The fertilizer used on the putting green plots for the past 3 years was a 10-5-0 (no potash) to help eliminate an invasion of clover that probably came from the use of raw (unsterilized) compost in which chicken manure was used as part of the source of organic matter. Only a trace of

clover exists at the present time, so the fertilizer the coming season will be a 10-6-4 similar to that previously used. The nitrogen sources in the fertilizer are sulfate of ammonia 5/10, nitrate of soda 2/10, and Milorgonite 3/10.

## Limestone Changes Turf Make-up

In a mixed bent putting green turf it could be noticed readily that the composition of the turf could be changed by applications of additional limestone. Lime appeared to encourage creeping bent and discourage velvet and colonial bent. Also it could be noted that limestone applications encouraged crabgrass in a fescue, bluegrass, and bent mixture cut at fairway height.

A turf-kill test on R.I. bent putting green turf preparatory to reseeding showed that the following materials would kill the existing turf when used at sufficient strength: ammonium sulfamate; ammonium thiocyanate; sodium chlorate, sodium arsenite; 2, 4-D; and Granular Cyanamid.

The continuous application of treatments of the mixture of 1/3 bichloride of mercury and 2/3 calomel over a 10-year period and every 10 days during the growing season (April 21 to September 21) for disease prevention produced what was thought to be injury from accumulation of inorganic mercury in the soil.

Several hundred strains previously selected from over 5000 selections of R.I. bent are under study with regard to disease and drought resistance and other factors relative to lawns and fairways. This study is being conducted in cooperation with the USGA.

A soil sterilization study in which vari-

J. A. DeFrance at Rhode Island Field Day explains treatment of putting green plots.



ous fertilizers and chemicals were used to kill weed seeds in the soil prior to the seeding of turf showed that some materials would kill the weed seed in the soil and leave little or no toxic residue or effect harmful to bent grass or ryegrass when planted a few weeks after the soil treatment. (A publication dealing with this study is in preparation.)

Several different 2, 4-D formulations including commercial and local preparations of 2, 4-D were used as sprays for weed control on fairway turf. Rates used were in the proportion of 1:1000 and 1:750 of actual 2, 4-D in 5 gallons of water per 1000 sq. ft. Applications were made August 29. All of the various 2, 4-D materials at the rate used gave excellent control of common and fall dandelion, narrow and broad plantain and white clover.

#### Crabgrass Control Tests

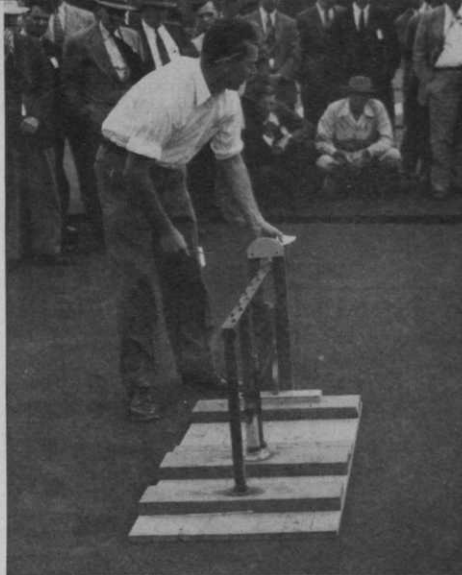
A crabgrass control study on fairway turf consisting of R.I. bent, Chewing's fescue and Kentucky bluegrass with various chemicals and commercial preparations indicated that sodium arsenite at the rate of 1 oz. in 10 gal. of water was the most promising of the materials used in that test.

With further reference to crabgrass, it was noted by Allen on 480 individual plats of creeping, colonial and velvet bent at putting green height that were under a series of tests for disease control with various chemicals that PMAS (a phenyl mercury acetate formulation) gave excellent control of crabgrass. Further observations revealed that Puraturf and Puratized 806 which are also water soluble mercurial formulations also gave good control of crabgrass. It was pointed out that a combination of a selective herbicide and fungicide applied as a single spray would be very useful and economical in saving many hours of hand-weeding of greens and other turf areas.

#### Test Turf Sponginess

A lime-compost study is under way on velvet bent to help determine a satisfactory method of avoiding soft spongy putting green turf that sometimes develops from years of root accumulation in acid soils. Limestone at rates from 3 tons to  $\frac{1}{2}$  ton yearly and various kinds and amounts of compost topdressing are being used on the various plots to study the effect on root accumulation. A "compressometer" designed by Allen is being used to determine the degree of sponginess of the turf (see photo). A 150 pound weight (supposedly equivalent to a normal golfer) is applied to a disc the size of a man's heel which penetrates the putting surface. A calibrated scale indicates the compressibility or sponginess of the turf.

A ryegrass compatibility study with basic grasses and mixtures had been started recently to determine the effect of



Charles H. Allen demonstrates compressometer which he designed at R. I. Agricultural Experiment station to measure springiness of turf.

perennial ryegrass and domestic ryegrass on the basic grasses when planted for lawns or fairways. Height of cut is  $\frac{1}{2}$  inch on half of the plots and  $1\frac{1}{2}$  inch on the other half of the plots.

A disease prevention and control study in cooperation with the USGA on two strains of creeping bent (C-15 and C-19), R.I. bent, and Piper velvet bent is being continued. Results of the past season's work will be published at a later date, however there were a few items of interest that were outstanding. Puratized 177 (synthetic cadmium complex) gave perfect control of attacks of disease including dollar-spot, large brown patch, pink patch, and copper spot. When used on turf badly infested and scarred by attacks of dollar-spot, a surprisingly quick healing effect was noted within a few days after treatment and complete recovery of injured turf occurred within 10 days. The results of the 1945 experiments were quite similar also. A cadmium shortage may prevent commercial production of this material for at least the first part of 1947.

With regard to insect pests in turf, three of the recent insecticide discoveries, included in the experimental test plots, DDT, benzene hexachloride, and Ryanox, were discussed as controls for sod webworms. Also considerable interest in control of the chinch bug, the Japanese beetle, ants and earthworms through the use of DDT was indicated by the greenkeepers. It was pointed out that DDT has been found to be effective, in other areas, against all but earthworms. Some greenkeepers expressed the belief that DDT, applied as a dust or

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