

Demonstration Turf Garden Reports

Summary of Reports from Seventeen Gardens for 1932

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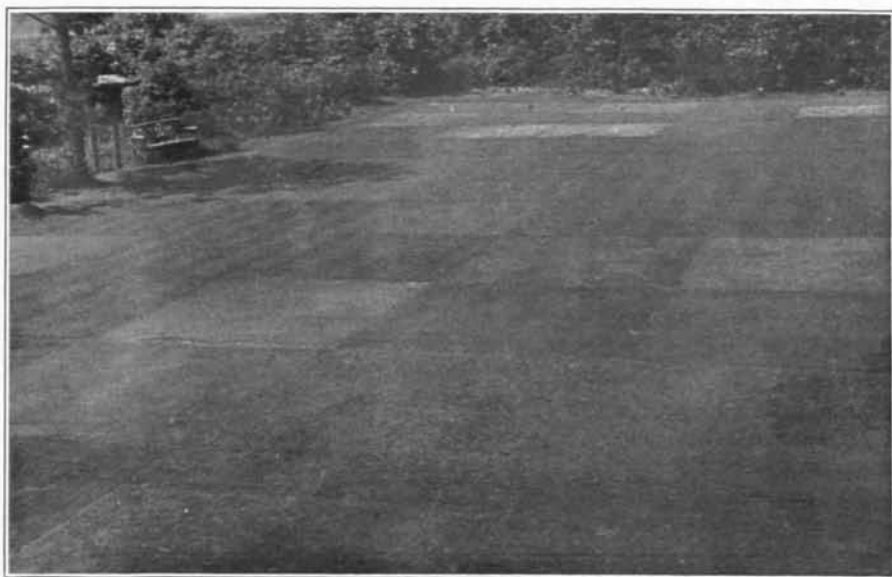
During the season of 1932 the series of demonstration gardens started in 1928 was continued. The plan of these gardens has been reported in previous numbers of the Bulletin and a summary of the first three years' results was published in the December, 1931, number of the Bulletin. The work was continued on these gardens during 1932 in much the same manner as in previous years. Due to reduced budgets some of the gardens could not be given as thorough care as in previous years, but in spite of these difficulties most of them continued to show some interesting differences between the various plots. During the summer there was held on these gardens a number of meetings of greenkeepers and chairmen of green committees. In most cases the gardens continued to serve as convenient sources of information in their vicinity for persons who are particularly interested in turf culture. Such individuals, by visiting the gardens occasionally, were able to follow any variations in the plots from season to season and could thus obtain far more information from them than could those who made only annual visits to the gardens.

Monthly reports throughout the season were received from 17 of these demonstration gardens. The locations of the 17 gardens are listed below together with the names of those who have made out the reports.

Demonstration Turf Gardens Cooperating With the Green Section

Allegheny Country Club.....	Pittsburgh
John Pressler and Paul F. Leix	
Century Country Club.....	Metropolitan District
Henry Shakeshaft and T. T. Taylor	
Charles River Country Club.....	Boston
F. H. Wilson, Jr.	
Detroit Golf Club.....	Detroit
Alex McPherson and M. Milenow	
Hyde Park Golf and Country Club.....	Cincinnati
William Harig and William Fruechemeyer	
Indian Trails Golf Course.....	Grand Rapids
Floyd Metcalf, Carl Fiedler, and Robert Cullin	
Keller Golf Course.....	St. Paul
P. N. Coates and Harold Stodola	
Lochmoor Club.....	Detroit
W. F. Beaupre and Andrew Wedyke	
Meadowbrook Country Club.....	Detroit
Thomas Slessor	
Niagara Falls Municipal Golf Course.....	Niagara Falls
Frank Bulges and Albert Bulges	
Oakmont Country Club.....	Pittsburgh
Emil Loeffler	
Philadelphia Country Club.....	Philadelphia
M. E. Farnham and Herbert Murphy	
Pine Valley Golf Club.....	Clementon
G. T. Cunningham and E. R. Steiniger	
Royal York Golf Club.....	Toronto, Canada
Frank A. Hamm	
Upper Montclair Country Club.....	Metropolitan District
Stanley Davis and T. T. Taylor	
Westwood Country Club.....	St. Louis
A. J. Goetz and Al Linkogel	
Wheatley Hills Golf Club.....	Metropolitan District
Frank Krause and T. T. Taylor	

In addition to these northern gardens two demonstration gardens located on the courses of the Sedgefield Country Club, Greensboro, N. C., and the Tulsa Country Club, Tulsa, Okla., were continued; but these two gardens were planted on a different plan, to provide information on the golf course problems of a somewhat different grass belt than that of the gardens listed above.



A view of the demonstration turf garden on the course of the Pine Valley Golf Club, Clementon, N. J., showing some striking differences between plots. This garden is planted on sand, where the absence of plant food materials in the soil accentuates the differences in turf on the plots due to the addition of various fertilizers. Where the gardens are planted on richer soils these differences are by no means as conspicuous as they are here

The information obtained from the 17 northern gardens in the form of monthly reports has been consolidated in accordance with the method outlined on pages 232 to 235 of the December, 1931, number of the Bulletin. The plots were rated numerically from 1 to 4; 1 representing *poor* turf, 2 representing *fair* turf, 3 representing *good* turf, and 4 representing the plots with *excellent* turf. The numbers in the columns under each month in the tables represent the consolidation of these ratings from the 17 gardens. The totals for the six months are given. The last column gives the total rating in terms of percentage of the total perfect score. The total score has varied from year to year, depending on the number of gardens which have contributed to the ratings, but the percentage ratings can be directly compared with those of previous years as given in the December, 1931, number of the Bulletin.

Putting Green Fertilizer Ratings

The putting green fertilizer tests were made on German mixed bent turf, except at the St. Louis garden where Metropolitan creeping bent was used. The fertilizers were applied at such rates that each fertilizer plot received the same total amount of nitrogen. The

check plots were continued without any addition of fertilizers.

The two complete inorganic fertilizers which have headed the lists in the three preceding years were again the leaders in 1932. The 6-12-4 mixture again had a slight advantage over the 12-6-4, as in 1930 and 1931.

Ammonium phosphate and poultry manure were tied for third place, decidedly behind the two complete mixed fertilizers. The poultry-manure plot averaged seventh place in the preceding years, while the ammonium-phosphate plot ranked in fourth place for the same period.

The sulphate-of-ammonia plot, which has been rated above the ammonium-phosphate plot in the average ratings for the three preceding years, has been rated slightly below it this year.

The activated-sludge plot, which in 1931 headed the list of organic fertilizers, this year fell somewhat below the poultry-manure rating, ranking sixth.

PUTTING GREEN FERTILIZER RATINGS, ON GERMAN MIXED BENT TURF, FROM 17 DEMONSTRATION GARDENS DURING 1932

(The order given is from highest to lowest rating for the year)

	May	June	July	Aug.	Sept.	Oct.	Total	Percent- age
6-12-4	54	57	64	61	59	62	357	88
12-6-4	53	58	62	60	56	58	347	86
Ammonium phosphate.....	49	49	52	55	53	53	311	77
Poultry manure.....	44	49	58	54	52	54	311	77
Sulphate of ammonia.....	47	49	55	51	52	53	307	76
Activated sludge.....	40	45	56	49	51	51	292	72
Urea	41	45	52	51	46	52	287	71
Sulphate of ammonia and compost..	45	49	49	43	49	46	281	69
Lime and sulphate of ammonia....	38	43	50	46	47	50	274	67
Nitrate of soda.....	37	36	45	38	38	45	239	59
Bone meal.....	32	36	41	43	43	42	237	58
Check 5-A (no fertilizer).....	23	25	27	28	29	25	157	38
Check 6-C (no fertilizer).....	25	23	26	29	29	25	157	38
Check 4-C (no fertilizer).....	22	22	22	26	26	23	141	35
Check 5-E (no fertilizer).....	23	22	21	23	26	24	139	34

Urea in 1932, as in the preceding year, ranked seventh.

The plot receiving sulphate of ammonia and compost was in eighth place during the season, as compared with fifth place in 1931. In this plot half of the nitrogen is obtained from sulphate of ammonia and the other half from compost.

The plot receiving both lime and sulphate of ammonia again is in ninth place, as it was in 1929 and 1931. A comparison of this plot with the plot receiving sulphate of ammonia alone gives further evidence that lime was not needed on most of the soils where these gardens are located, at least not at the rate at which it was applied to this plot.

The nitrate-of-soda and bone-meal plots were rated tenth and eleventh respectively, as they have been in the three preceding seasons.

The 4 check plots which received no fertilizers continued to receive low ratings in 1932. There was a difference of only 4 per cent between the ratings of the 4 check plots, which indicates that there is little variation of the soil in the series of fertilizer tests.

Fairway Fertilizer Ratings

The fairway fertilizer series was conducted on turf derived from a seed mixture of 80 per cent of Kentucky bluegrass and 20 per cent of redtop. As in the case of the putting green series, the nitrogen fertilizers were applied at such rates that each plot received the same quantity of nitrogen. The total application of nitrogen for the season in the fairway series was half that used in the putting green series. Applications were made in the spring and in the fall.

FAIRWAY FERTILIZER RATINGS ON MIXED TURF OF KENTUCKY BLUEGRASS AND REDTOP FROM 17 DEMONSTRATION GARDENS DURING 1932

(The order given is from highest to lowest rating for the year)

	May	June	July	Aug.	Sept.	Oct.	Total	Percent- age
6-12-4	45	43	41	42	45	47	263	68
Bone meal.....	37	41	43	42	47	47	257	66
12-6-4	49	43	40	37	42	45	256	66
Activated sludge.....	44	38	44	40	46	43	255	66
Sulphate of ammonia.....	37	33	31	33	39	39	212	55
Lime	27	32	35	36	37	32	199	51
Manure	28	32	32	36	33	31	192	49
Check 10-C (no fertilizer).....	25	26	28	30	30	30	169	44
Check 11-E (no fertilizer).....	22	23	25	29	26	28	153	39
Check 11-A (no fertilizer).....	22	25	24	25	24	24	144	37

There was a difference of only 2 per cent in the ratings of the 4 leading plots in this series, and these were the same plots as those that were in the 4 highest positions in 1930 and 1931. The inorganic complete mixed fertilizer 6-12-4, which received the highest rating in 1929 and 1930 and which dropped to second place in 1931, again headed the list in 1932. The second, third, and fourth positions represent only slight differences. In spite of the 2-point difference in the total score the percentages were the same when the fractions were ignored. Bone meal and the inorganic mixed fertilizer 12-6-4 were second and third respectively during the past season, as compared with third and fourth places respectively in 1931. Activated sludge this year received fourth place, as compared with first place in 1931. The difference of only 2 per cent in the first four places, however, indicates that there was practically no difference in quality of turf during the fourth year between these four fertilizers. The lime plot this year for the first time since the establishment of the gardens rated somewhat above the manure plot.

In comparing these ratings with those of the preceding year it is interesting to note that all of the 3 check plots received a decidedly lower rating in 1932 than in 1931. There was a decidedly higher rating given in 1932 than in 1931 to all of the plots which received fertilizer or lime, with the exception of the plot receiving manure, which received a slightly lower rating than in 1931. This gives an interesting demonstration of the influence of different seasons on fertilizing programs.

Putting Green Grass Ratings

In the table of putting green grass ratings the grasses tested at the turf gardens are grouped according to botanical relationship, and within the groups they are listed in order of favorable ratings.

The colonial bent plots which were planted with seed grown in three different regions have received similar ratings during the four years in which the gardens have been in use. There has been some shifting in the relative positions each year, which is to be expected with ratings so close. This year the results further emphasize the previous results in showing that the quality of turf produced by this species of bent varies but little according to the place where the seed is grown.

PUTTING GREEN GRASS RATINGS FROM 17 DEMONSTRATION GARDENS DURING 1932

	May	June	July	Aug.	Sept.	Oct.	Total	Percent- age
Colonial bent:								
Western grown.....	47	50	49	48	52	48	294	73
New Zealand grown.....	47	50	48	48	52	45	290	72
Rhode Island grown.....	44	49	47	49	50	46	285	71
Creeping bent:								
Seaside (seed).....	45	56	53	51	52	52	309	76
Metropolitan (stolons).....	45	49	53	52	54	51	304	75
Washington (stolons).....	45	46	51	47	56	54	299	74
Virginia (stolons).....	31	36	38	37	35	34	211	52
Columbia (stolons).....	35	36	32	36	36	35	210	52
Velvet bent:								
No. 14276 (stolons).....	41	44	51	52	51	48	287	71
Prince Edward Island grown (seed).....	46	52	49	49	48	42	286	71
Highland (stolons).....	40	42	45	48	45	44	264	65
Rhode Island grown (seed)....	41	46	44	42	45	37	255	63
Mixed bent (German).....	47	49	46	50	51	43	286	71
Fescue:								
Chewings.....	31	32	27	25	27	28	170	42
Red.....	27	32	25	24	24	26	158	39
Annual bluegrass.....	33	40	38	26	32	34	203	50

Seaside creeping bent for the first year since the establishment of the gardens leads the list of creeping bents. As in previous years, there was only a slight difference in the ratings of the three leading creeping bents (seaside, Metropolitan, and Washington). This year there was a difference of only 2 per cent between the three best creeping bents as contrasted with a difference of 22 per cent between the Washington strain and the Columbia or Virginia strains. This wide difference shown year after year between the group of better creeping bents and the poor strains emphasizes the well-known fact that creeping bents for turf purposes can not be regarded as identical in spite of the common opinion among golfers that creeping bents are all the same. The group of best creeping bents is again slightly ahead of the group of colonial bent and German mixed bent plots, which represents the type of turf which golfers so frequently refer to simply as "seeded greens."

The two best velvet bents, one planted with seed and the other with stolons, received practically the same ratings as German mixed bent and the colonial bents. The plot planted with velvet bent seed grown in Rhode Island did not rate as high as the plot planted with seed grown on Prince Edward Island.

The fescue plots again received the lowest ratings of all the grasses used in the putting green series.

The annual-bluegrass plot again was somewhat better than the fescue plots. It received a slightly lower rating than in 1931.

Fairway Grass Ratings

FAIRWAY GRASS RATINGS FROM 17 DEMONSTRATION GARDENS DURING 1932

	May	June	July	Aug.	Sept.	Oct.	Total	Percent- age
Kentucky bluegrass, redtop, and German mixed bent.....	45	51	50	50	57	57	310	76
Chewings fescue and German mixed bent	47	49	50	49	48	52	295	72
Colonial bent.....	43	45	47	45	50	51	281	69
Kentucky bluegrass, redtop, and Chewings fescue.....	44	45	46	46	48	47	276	68
Kentucky bluegrass and redtop....	42	42	44	43	45	43	259	63

The mixture of Kentucky bluegrass, redtop, and German mixed bent headed the list of fairway grasses during 1932. In the 3 preceding years this plot has been second only to the mixture of Chewings fescue and German mixed bent. This latter mixture, which headed the list in the 3 preceding years, dropped to second place in 1932. The 2 plots which were given a third- and fourth-place rating this year were in reverse order in 1931. The Kentucky-bluegrass-and-redtop mixture is again at the foot of the list, as it has been in the 3 preceding years.

Plagues of locusts in the Old World have been recorded since Biblical times, and they still constitute a great problem. The insect is now causing wide-spread damage throughout northern Africa and the Near East. Entomologists of the Hebrew University at Jerusalem are making an intensive study of its control. Fortunately its presence in vast swarms is only periodical. It appears now that the breeding places of the insects are in the moderately moist borderlands of deserts, and that a bad locust year is always preceded by a decidedly rainy winter, giving the ground where the eggs are laid plenty of water in its upper layer. The eggs require from two to four weeks for hatching. After the eggs hatch the insects pass through five larval stages, growing larger each time they shed their skins, and beginning their migratory march. During this early stage in their life the swarm will travel by hopping or very short flights above ground. In this stage the insects can be fought by poisoned baits, by trenching, and by various other mechanical and chemical means. When, however, they have grown their long wings and taken to the air, no method so far devised can avail to stop them.

If you are troubled with Japanese beetles in your turf and have wild carrots anywhere on your course it will pay you to let the latter spread. Though regarded as a weed and despised by farmers and dairymen all over the country, the wild carrot has proved its worth in affording a home and food for an insect which destroys the Japanese beetle. This is a small wasplike insect introduced from Japan some years ago, along with other insects which prey upon the Japanese beetle, in the campaign which the Bureau of Entomology is waging against the beetle. Over 140 colonies of this insect have been released, mostly in the area around Philadelphia. It is the purpose to spread the insect to all parts of the Japanese beetle territory.