

RESEARCH REPORT

The Summer Turf Program

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The summer Turf Program began in May with the purchase of fertilizers and equipment. The first plot work occurred at Rochester, Minnesota on June 14. The golf green nursery at the Rochester Golf and Country Club, Kurt Erdmann superintendent, was treated earlier in the spring with one application of 22-0-6, aerated with 5/8" tines - plugs removed and approximately 3 yards of sand was applied and worked into the 8,000 sq. ft. green. At campus, a similar plot was established, except no sand program. The campus plot received 1/2 pound nitrogen as urea on June 8. At Northland Country Club in Duluth, Eino Maki superintendent, the green nursery plot area was fertilized in the fall of 1977 with 1/2 pound of soluble nitrogen and 1 pound of IBDU. No fertilizer was applied in the spring of 1978.

The test plot areas were fertilized with a Scotts 3 foot wide drop spreader. The plot size varied with the area available (i.e. 6' x 60' at Rochester and at St. Paul and 9' x 72' at Duluth). The fertilizer types, treatment and color rank are presented in Table 1.

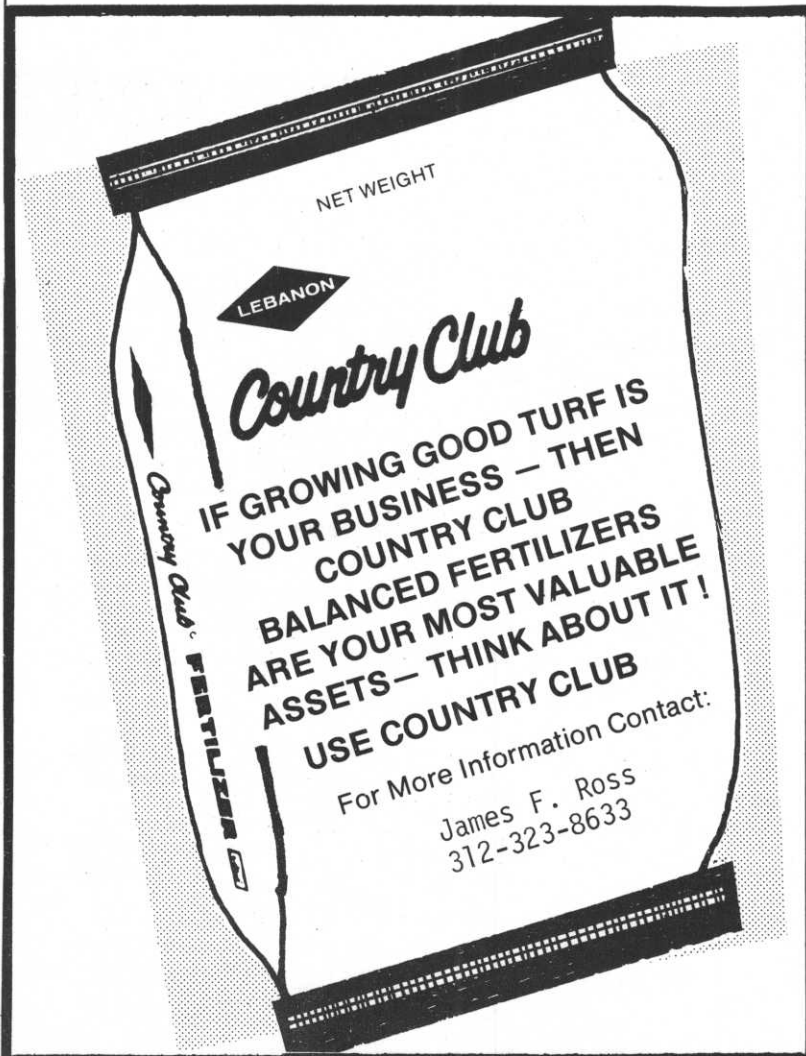
The average rank order of all treatments at all locations is given as the season rank. The Howe product was applied at one location and its rank was determined on the basis of two ratings. The rank order readings were made approximately 1 month after the product was applied, which would tend to favor slow release - long acting products and produce lower rankings for those products with quick release forms of nutrients.

Disease, dollar spot, did reduce quality at the St. Paul campus location and the higher rank of Par Ex products on 8/16 was later recognized to be the result to disease control by fungicides. The above program could be repeated in 1979 with plot plans made available to the entire organization by publication in the HOLE NOTES.

A similar trial was conducted at the Oak Ridge Country Club, Keith Scott superintendent, on Fairway turf. The products were applied with a drop spreader to 9 x 66 foot plots except for the Scotts Fairway fertilizer product, 30-3-10, which was applied to an 18 x 66 foot plot. This prevented any fertilizer over-lap. Fertilizer treatment rates and color ratings are presented in Table 2.

Heavy rains after the first treatment may have diluted the soluble fertilizer response and an application error with the rotary spreader resulted in some burn after the second application. Late season color with the Scotts Fairways Fertilizers 30-3-10 was the most dramatic response observed in 1978. This plot area will be observed again in 1979

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The third area of activity last summer was the fungicide - fertilizer - dollar spot interaction study at the St. Paul Campus. The fertilizers were applied as in Table 1. Dollar spot readings began on August 1 and continued through September 14. The data in Table 3 suggests the following: 1) nitrogen of any kind slowed disease development but did not control it and 2) water soluble nitrogen forms had slightly more dollar spot before slow release nitrogen forms. Clearly when dollar spot conditions occur, fungicides are required to manage Penncross Bentgrass.

The application of dollar spot fungicides listed in Table 4 occurred on fertilizer treatments Par Ex 31-0-0 and Par Ex 20-0-16 and in one case on Scotts greens fertilizer 22-0-16. The disease was well established when spraying began on July 25. The standard systemic product benomyl or Tersan 1991 provided excellent control. The RP 26019 rates were too low or the application interval was too long. The 2 oz. application rate of RP 26019 may be adequate when disease pressure is less. The new Daconil formulation 4 F provided better control of dollar spot than did the 6 F formulation. The experimental products are also very promising. The Ciba Geigy product at 2g/1000 sq. ft. is fifteen times less material than a 1 oz. rate. The BFN product from the Boots company in England also performed well at several rates and formulation types.

The summer plots were very exciting and did yield some valuable data. In addition to the plot work repeated here, fall fertilizer applications were made at Pierz, Forest Lake and Hazeltine Golf Courses. We are testing date of fertilizer application and type relative to snow mold development. No data is available but come the spring snow melt, we may have confirming evidence to support fall fertilizer applications and better handle on when to apply fertilizer products and what types.

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NEW MEMBER DRIVE

Share a good thing with that superintendent friend who always was going to join but never quite got around to it. Use the application blank found in the rear of this issue of HOLE NOTES to put (as salesmen say) the fast close on him and get his signature on that application. Actually, you will be doing him a favor by opening up the opportunity to meet and exchange ideas and information on a monthly basis with other people in the same field. Think back! That is probably how you joined the association and aren't you glad you did! Don't let this opportunity to help a fellow superintendent go to waste.

While speaking of memberships, perhaps this is the right time for M.G.C.S.A. members who do not belong to the Golf Course Superintendents' Association of America to take a look at their progress and advantages of membership. Just call our office for a membership folder. Most clubs are willing to pay for their superintendent's membership.

1978

Table 1.

PRODUCT	Green Fertilizer Readings																							
	Rochester								St. Paul							Duluth								
	6/14	7/17		8/15		9/17		11/3		6/14	7/17	7/24	8/16		9/14		10/24		6/19	7/18	8/14		9/16	
T	T	R	T	R	T	R	T	T	T	R	R ¹	T	R ²	T	R	T	T	T	T	R	T	R	T	T
Par Ex 31-0-0 ³ (3.5)	2	0	3.5	0	3.7	2	4	0	2	0	3.3	3	0	3	2	4	0	2	0	3.4	0	3.8	2	0
Par Ex 20-0-16 (3.2)	2	0	3.8	0	4	2	3.8	0	2	0	3	3.3	0	3	2	4	0	1	1	4	0	4.1	2	0
Milorganite 6-2-0 (3.4)	1	.5	3.8	.5	3.6	1	3.5	1	1	1	3.2	2.6	.5	3	1	3.5	1	1	.5	3.5	.5	3.8	1	1
NH ₃ NO ₃ 34-0-0 (3.1)	1	.5	3.4	.5	3.1	1	3.5	1	1	1	3.3	2.5	.5	3	1	3.5	1	1	.5	2.9	.5	3	1	1
NH ₃ SO ₄ 21-0-0 (3.0)	1	.5	3.3	.5	3.2	1	3	1	1	1	2.8	2.5	.5	3	1	3.5	1	1	.5	2.9	.5	3	1	1
Howes 20-5-10 (2.9)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2.8	.5	3	1	0
Scotts Greens 22-0-16 (3.2)	.9	.45	3.3	.45	3.4	.9	3	.9	.9	.45	3.2	2.9	.45	2.9	.9	3.8	.9	.9	.45	3.1	.45	3.8	.9	.9
Check (2.5)			3		3		2.5				3	2.6		3		3.5				2.5		2.8		

T = Pound of Nitrogen /1000 sq. ft.

R = Color Rank 5-1, 5 best

1) = Interaction with dollar spot, Scalping, & Fungicide application

2) = Severe \$ made ranking difficult

3) = Season Rank in ()

Table 2.

1978
Fairway Fertilizer Readings

Product	6/21 T	8/16 R	8/16 T	9/25 R	9/25 T	11/6 R	11/6 T
Par Ex 31-0-0	2	3.25	2	3.5	0	3.13	2
Milorganite 6-2-0	1	3.5	1	3.5	1	3.25	1
NH ₃ NO ₃ 34-0-0	1	3.25	1	3.25	1	3.	1
NH ₃ SO ₄ 21-0-0	1	3.25	1	3.13	1	3.	1
Scotts Fairway 30-3- 10	.9	3.25	.9	3.4	.9	4.38	.9
Howes 20-5-10	1	3.25	1	3.25	1	3.25	1
Check		3.25		3.25		3.5	

T Rate of Nitrogen lbs/1000 sq. ft.

R Color Rank 5-1, 5 best

Table 3.

1978
Dollar Spot Readings

Product	8/1	Date 8/7	8/16	8/21	8/28	9/5	9/14
Par Ex 20-0-16	80 ^a	73	93	144	358	375	230
Par Ex 31-0-0	67	67	102	154	367	375	247
M.O. 6-2-0	104	67	107	159	390		
NH ₃ NO ₃ 34-0-0	89	79	117	170	434		
NH ₃ SO ₄ 21-0-0	100	82	114	175	439		
Scotts 22-0-16	85	77	97	168	408	408	298
Check	103	69	137	205	440	408	224

^aData are # of spots/sq. meter

Table 4.

1978
Dollar Spot Readings

Product	Date						
	8/1	8/7	8/16	8/21	8/28	9/5	9/14
1 Tersan 1991	5.25 ^a	0.50	0.38	2.75	0.50	0.00	2.00
2 RP26019 1 oz.	6.75	2.75	24.63	84.25	45.00	3.00	11.25
3 RP26019 2 oz.	6.25	1.13	5.38	24.13	12.13	2.75	3.13
4 Daconil 27876F	9.14	0.50	16.50	41.00	18.00	5.00	2.13
5 Daconil 27874F	10.50	2.25	1.13	16.75	8.63	1.25	0.75
6 Ciba Geigy 4g/1000	11.25	0.88	0.50	0.13	0.13	0.00	0.00
7 Ciba Geigy 8g/1000	16.50	3.63	1.63	0.00	0.75	0.25	0.00
8 Ciba Geigy 2g/1000	10.00	3.00	0.75	11.00	1.50	3.25	0.25
9 BFN8090 2.5 oz	34.75	24.63	17.25	71.13	73.13	5.25	2.00
10 BFN8090 5 oz	24.13	24.38	13.13	56.00	25.13	2.25	1.25
11 BFN8090 10 oz	11.29	2.75	0.50	14.13	1.13	0.00	0.00
12 BFN8077	15.00	7.38	3.25	27.75	21.13	0.50	0.25
13 BFN7789	17.25	4.63	3.00	26.38	16.50	0.50	1.00
14 check	93.76	84.56	112.81	164.30	400.33	375.00	243.89

a) Data are # of spots/sq. meter