

EFFECTS OF MANGANESE APPLICATIONS ON TURFGRASS QUALITY

The studies to evaluate the affect of foliar manganese applications on turf quality of a Penncross creeping bentgrass green at the Hancock Turfgrass Research center were continued in 1991. The first study utilized applications as shown in Table 14 on May 24, June 26, July 10 and July 30. Manganese sulfate did not provide a consistent improvement in turf quality although there was some increase in quality ratings from the first date of application. Thereafter, and in a second study (Table 15) established on September 3, there was no apparent benefit from manganese applications on this Penncross green on this loamy sand green. Ferrous sulfate did give generally improved quality ratings. However, some phytotoxicity can occur from foliar applications ferrous sulfate as was observed from the June 26 applications. Use care when making any soluble fertilizer application during high environmental stress conditions (high temperatures, wilting of turf, etc.).

EFFECTS OF USING ISOLITE IN TOPDRESSING PROGRAMS

A study was established July 2 on a Penncross putting green turf at the Hancock Turfgrass Research Center to evaluate the effect of mixing Isolite with sand in a sand topdressing program. Treatments were: sand alone; 90% sand, 10% Isolite; and 80% sand, 20% Isolite. Parameters evaluated included turfgrass quality ratings, volumetric moisture content (Table 16); soil temperature (Table 17); and root weights and surface hardness measurements (Table 18). Topdressing treatments were applied at the rate of 3 cubic ft. per 1000 sq. ft. at 3 week intervals. There were no differences observed in any of the parameters measured during this relatively short-term study. To properly evaluate a soil amendment like this, longer term studies are necessary.

WETTING AGENT EFFECTS ON TURF AND SOIL MOISTURE

The effects of wetting agents on turf and on soil moisture were evaluated in a series of studies on putting green turfs in 1991. The study was concentrated on the use of the Paragon wetting agent, which was compared to label rates of AquaGro and LescoWet, as well as an untreated check. One study involved treatments on July 30 and September 2 (Table 19). There were no meaningful differences in the moisture content of the soil.

Table 16

Isolite Topdressing Study, Volumetric Moisture Measurements Measurements from the top 7.5 cm Initiated July 2, 1991					
Initial treatments were 18 cubic feet per 1000 sq. ft. of each topdressing material applied after double coring with .5 inch tines. 3 cubic feet of material per 1000 sq. ft. applied on three week intervals after initial treatment. Final season treatment was 18 cubic feet of each topdressing material per 1000 sq. ft. Treatment dates were initial July 2, 3 week treatments: 7/22, 8/13, 9/3, 9/24. Final treatment applied 10/15.					
Treatment	VMC 7/23	VMC 7/30	VMC 8/6	VMC 8/13	VMC 8/28
80% Sand 20% Isolite	23.7	25.8	24.0	20.9	24.9
90% Sand 10% Isolite	24.5	27.0	24.6	21.2	25.2
100% Sand	24.6	26.0	24.1	19.6	17.4

Table 17 Isolite Topdressing Study, Soil Temperatures
Initiated July 2, 1991

Initial treatments were 18 cubic feet per 1000 sq. ft. of each topdressing material applied after double coring with .5 inch tines. 3 cubic feet of material per 1000 sq. ft. applied on three week intervals after initial treatment. Final season treatment was 18 cubic feet of each topdressing material per 1000 sq. ft. Treatment dates were initial July 2, 3 week treatments: 7/22, 8/13, 9/3, 9/24. Final treatment applied 10/15.							
Treatment	2.5cm 8/20	2.5cm 8/27	5.0cm 8/27	5.0cm 10/17 10 am	5.0cm 10/17 3 pm	10 cm 10/17 10 am	10 cm 10/17 3 pm
80% Sand 20% Isolite	24.0	29.5	28.2	45.6	54.4	45.1	46.7
90% Sand 10% Isolite	23.9	29.2	28.1	46.0	54.6	45.4	47.7
100% Sand	23.8	29.2	28.1	45.9	54.5	45.4	47.6

Table 18

Isolite Topdressing Study, Root Weights and g-max readings Root samples taken 9/17/91 Initiated July 2, 1991				
Initial treatments were 18 cubic feet per 1000 sq. ft. of each topdressing material applied after double coring with .5 inch tines. 3 cubic feet of material per 1000 sq. ft. applied on three week intervals after initial treatment. Final season treatment was 18 cubic feet of each topdressing material per 1000 sq. ft. Treatment dates were initial July 2, 3 week treatments: 7/22, 8/13, 9/3, 9/24. Final treatment applied 10/15.				
Treatment	Root Weight kg m ⁻¹ 0-3 inch	Root Weight kg m ⁻¹ 3-6 inch	g-max July 30	g-max Nov. 13
80% Sand 20% Isolite	20.7	9.5	66.9	50.8
90% Sand 10% Isolite	7.7	10.5	68.6	50.8
100% Sand	13.6	2.6	70.0	48.4

Table 19

Precision Laboratories Paragon Wetting Agent Study Soil Moisture Measurements, HTRC Treatments Applied July 30, September 2, 1991						
Treatment	Rate OZ/M	8/1 VMC-7.5	8/23 VMC-7.5	8/23 VMC-15	9/20 VMC-7.5	9/20 GMC-7.5
Paragon	0.5	24.80	33.53	26.45	31.50AB*	12.60AB
Paragon	1.0	24.40	34.22	27.73	30.70 B	11.80 B
Paragon	2.0	23.40	33.72	26.70	31.40AB	12.48AB
Paragon	4.0	24.83	34.28	26.83	31.20AB	13.90A
Paragon	8.0	23.88	35.10	25.80	30.98AB	12.65AB
Paragon	16.0	25.80	34.85	28.30	32.90A	13.50AB
AquaGro	4.0	24.42	33.10	26.72	30.92AB	12.43AB
LescoWet	0.5	25.80	34.53	27.85	31.95AB	12.60AB
Check	--	23.85	33.33	27.42	31.60AB	12.65AB
* Means followed by the same letter are not significantly different at the 5% level using the LSD mean separation test.						