

LANDON'S TURF TIPS

LOCALIZED DRY SPOTS

Dry patches or spots on bentgrass greens are frequently observed throughout the Carolinas in summer and fall months. They occasionally become a major problem and the superintendent tries various methods including pitch forks, fungicides, and shovels to get the spots wet again.

J. F. Wilkinson and R. H. Miller at Ohio State completed some studies in 1977 which may be of assistance. Greens built in 1972 started developing localized dry spots in the summer of 1974. The greens were 85 to 90% sand.

The researchers core aerified one-half of each green and left the other half non-aerified. Within each area 3 wetting agents were used followed by turfgrass quality rating scores on 3 dates. The 3 wetting agents were Hydro-Wet, Aqua-Gro, and Grozyme. The combination of core aerification and either Hydro-Wet or Aqua-Gro were most beneficial in wetting the dry spots. Core aerification alone alleviated the dry spots by providing holes for water movement into the soil. Grozyme had no effect. Wilkinson and Miller found the hydrophobic (repels water) condition of the dry spots was limited to the upper 2cm of soil. Allowing the soil to become dry makes the hydrophobic condition worse. Infiltration rate within the dry spots was 20% of that for normal turf. Percent moisture in the dry spots averaged 3% 24 hours following irrigation. Moisture in the normal areas averaged 6.8%. This small difference can be critical in sandy soil.

Wilkinson and Miller carried the study further to determine the cause of the dry spots. Using a scanning electron microscope they found a coating surrounding individual sand particles from dry spots only. The coating had the appearance of an amorphous covering interspersed with fungal mycelium. The same did not occur on samples of sand from normally wet areas. In numerous cases several sand particles were found bound together by the coating. The coating was organic and acidic. Speculation is that the coating causing the dry spots was from fungal mycelium growth which took place before the dry spots appeared. The fungi were not active when the dry spots appeared.

In summary, use a combination of core aerification to penetrate the 2 cm. top layer of the dry spots which sheds water from the area and use a wetting agent to lower the surface tension of the 2 cm. layer so it can be more easily wetted.

We were talking with Fred Meda of Myrtle Beach National about this recently. He said "Penetrate" wetting agent had worked very well on his greens. And where he applied lime in solution on dry spots they did not return. The lime would be expected to work because of the acidic nature of the fungus mycelium. Wilkinson and Miller found no dry spots where there was a high level of calcium carbonate in the greens soil.

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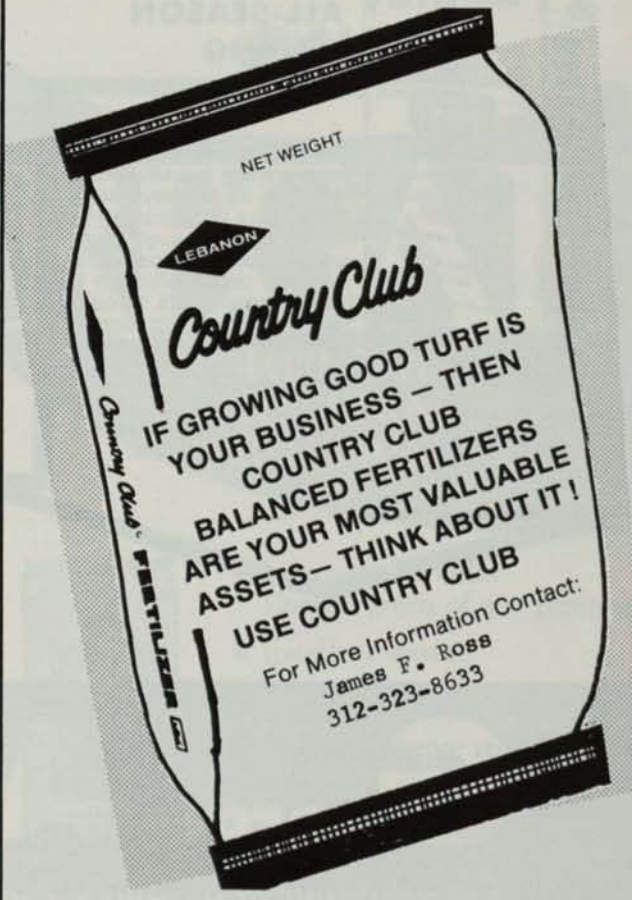
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