

Green Section Record

REGIONAL UPDATE

June 15, 2018



Roots do not extend deeper than 3 inches in this putting green because of a disparity in moisture retention between the surface layer and the original construction mixture.

EXCESS SURFACE MOISTURE YIELDS SHALLOW ROOTING

BY BRIAN WHITLARK | AGRONOMIST, WEST REGION

A rootzone with consistent moisture retention from top to bottom will encourage deep rooting. However, many courses throughout the West have putting greens with excess thatch and organic matter in the top 2-3 inches of the soil profile. This leads to excess surface moisture and shallow rooting. In these cases, roots often stop at the interface between the original green construction rootzone and the sand, organic matter and thatch that has accumulated above it.

Thatch and organic matter in the top 2 inches of a soil profile act as a sponge, encouraging excess moisture and low oxygen levels that reduce aerobic decomposition of the thatch. This wet surface layer also traps salts. It is common for salt levels in this surface zone to be 10 times higher than in the original rootzone material beneath the organic matter layer.

When excessive organic matter causes moisture to accumulate at the surface, oxygen diffusion is reduced

and root development is limited. Deep and infrequent irrigation won't fix this problem. Organic matter must be reduced to produce more consistent moisture retention throughout the rootzone. An adequate sand topdressing program will help create a healthy comingled mixture of sand and organic matter at the surface which will improve root development.

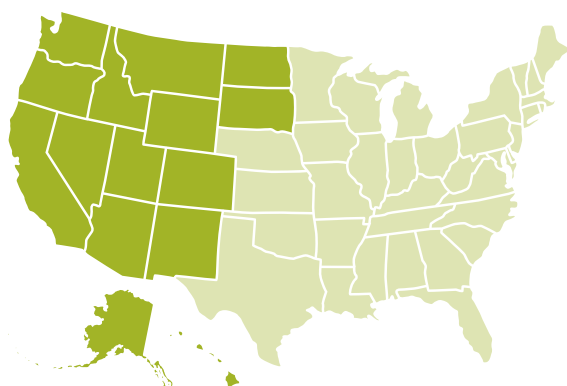
A simple way to test for organic matter issues in a putting green is to collect rootzone samples in the morning after applying approximately 1 inch of water overnight. Squeeze the upper 1-2 inches of soil with your fingers. A healthy, ventilated and well-drained rootzone will not yield any visible water upon squeezing.

For more information on developing healthy rootzone performance characteristics in putting greens, please contact your regional [USGA Agronomist](#).



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