

# TURFGRASS TRENDS

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## AGRONOMICS

### Thatch control in bentgrass greens

#### The influence of cultural & chemical controls on rootzone nutrients

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**T**hatch accumulation naturally occurs at many managed turfgrass sites, however if it accumulates excessively it can seriously impede the health and long-term survival of densely grown turfgrasses such as on putting greens, so controlling thatch buildup is important. Thatch is defined as a tightly intermingled layer of dead and living stems, leaves, and roots that accumulates between the green vegetation and the soil surface.

Accumulation of thatch is a direct result of intensive management which causes the rate of plant organic matter (OM) accumulation to exceed the natural degradation process. Thatch accumulation has been reported to be favored by acid soils except where calcium (Ca) was applied. Thatch accumulation rate was found to be approximately twice as great below pH 4.0 as above 5.0. The presence of Ca, applied as calcium hydroxide, and the suppressive effect it has been shown to have, suggests that Ca might be a major factor involved in thatch decomposition under acidic conditions.

There are considerable differences of opinion as to what cultural practices, chemical treatments, or treatment combinations are most effective in controlling thatch when highly maintained at sites like a golf course. These differences are broad-based and cover the spectrum of management strategies.

Some researchers have observed that mechanical practices like core aeration are effective in reducing thatch alone or in combination with either vertical mowing or limestone applications. Others have reported little or no benefit of coring on thatch levels. Vertical mowing has also been shown to effectively reduce thatch in some studies, but has been ineffective in others. Likewise, frequent topdressing with sand or a high sand content soil mixture reduced thatch when performed alone or in combination with coring and vertical mowing, while others have reported no effect of topdressing on thatch.

Limestone has been used in some studies to maintain a favorable thatch pH to enhance microbial activity to speed thatch decomposition, but in still other studies, limestone application had no effect on thatch. Even extra potassium (K) and wetting agent treatments have been tested, but were also reported to be ineffective in reducing thatch.

This variance in results was less surprising when you consider that all of these previous tests were conducted on a variety of grasses grown on soil rootzones under an assortment of management strategies - from six tests on bermudagrass greens and one lawn to three on bentgrass greens, one on a bentgrass fairway, and two on Kentucky bluegrass lawns.

To bring some semblance of order to this diversity of hosts, management practices, and

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