JACKLIN SEED by Simplot

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RESEARCH NEWSFLASH

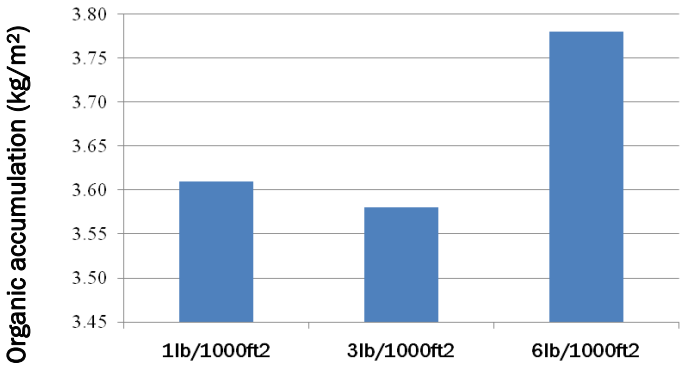
Putting Green Thatch

by Christian Baldwin, Ph.D.

Thatch is defined as an accumulation of decaying organic material, such as roots, clippings, and stolons, that build up in the upper portion of the soil profile, just underneath the surface. Excessive thatch accumulation is undesirable because it absorbs water and nutrients applied to the plant, thereby limiting root absorption. Thatch can also cause a putting green surface to be too soft, leading to scalping and poor playing conditions. Therefore thatch accumulation is closely monitored and managed through an aggressive cultivation program.

Thatch accumulation on Penn A-4 at this public daily fee course in Iowa led to mower scalping damage. Some people suspect A-4's high shoot density may be to blame.

For decades Penncross was the standard putting green cultivar. However, cultivars like **L-93** and others provided better shoot density and disease resistance for superintendents in the mid-90's. In the mid-2000's, several new bentgrass cultivars were released, like **T-1** and **Alpha**, which possess greater quality and shoot density. With increased shoot density, many practitioners often assume these new, high shoot density *Continued p. 2*



Thatch accumulation of creeping bentgrass from nitrogen regimes of 1, 3, or 6 lbs. N per 1000 ft² per year applied in 2009 and 2010 in Post Falls, ID. Results were averaged across 18 cultivars.

2011 Seed Harvest Forecast

by Glenn Jacklin

We are anxiously waiting for spring to finally "sprung" after a long, cold winter here in chilly Idaho. Our winter gave us ample moisture and good snow cover to withstand some of the sub-zero cold spells, so even though the fields are slowly coming out of dormancy, plants should be in good shape.

Acres of turf-type tall fescue are at record lows. This has allowed consumption to bite into the oversupply, strengthening pricing in this species. Supply will continue to be good, but most likely will tighten up in late spring 2012 as we near new crop. The 2011 crop in the ground is in good condition and should have good yields and very good quality, as marginal fields have been rotated out.

Perennial ryegrass acres are also considerably down below normal, and supply has leveled out with consumption. Minnesota and Canadian production areas suffered through some Mother-Nature events, and so that crop will be down as well. We look for high commodity prices to keep new plantings in check. Supply will be good, as will quality, and should be in line with consumption. Keep in mind consumption levels are at less than half 2005 levels, and may even tighten up further in late spring 2012.

We go into the 2011 Kentucky bluegrass crop with substantially less acreage than years past, and maybe at levels not seen since the 70's. Supplies of elites, low end proprietaries as well as commons are still substantial, and it will take another cycle to work through. Nevertheless, pricing remains firm and with reduced acreage, we should start seeing headway in bringing supply in line with consumption. *Continued, p. 2*

Coming in April...

Jacklin Seed announces the release of a new game-changing turfgrass

Watch for it in the next *NewsFlash*
This is no April fool!

Thatch, continued

cultivars will quickly accumulate thatch to unmanageable levels. In light of these comments, a research trial was conducted at Jacklin Seed to determine if this is fact or fiction.

Research Trial Details

The trial was conducted in Post Falls, ID from 2009 to 2010 on a putting green consisting of 18 creeping bentgrass cultivars established in July, 2006. The plots were not aerified or topdressed in 2009 and 2010; this was done intentionally in order to determine the "true" thatch buildup tendency of each cultivar without the interference of cultivation practices.

During the 2-year study period, nitrogen (N) was applied in the form of urea every 2 weeks (14 applications) from April to October for a total yearly N rate of 1, 3, or 6 lb per 1000ft^2. Additional P and K were applied monthly from June to August in each year. Mowing height was 0.125 inch 5 days per week.

Thatch accumulation (kg/m^2) was sampled in fall, 2010 and determined using a muffle furnace, which burns off the organic matter and provides ashed organic-free weight. Thatch was expressed as organic matter weight per square meter of putting surface.

Research Results

There was no significant N-rate-by-cultivar interaction, meaning that all cultivars reacted the same to higher N levels: They all grew more thatch. Therefore, thatch data for each cultivar were averaged over the three N rates.

Jacklin research technician Jami Mayer weighs thatch samples before incinerating them in a muffle furnace to determine organic matter content.

While numeric differences up to 24% were seen, after running the data through statistical analysis, no significant differences were detected between cultivars. Another interesting observation to note from the data was that no trend emerged indicating that newer cultivars with increased shoot density were any more prone to thatch accumulation than older, more open canopy cultivars. For example, **T-1**, which has a high shoot density, was numerically among the least thatchy cultivars, while Penncross thatch production was intermediate and Penn A-4 and G-6 were among the most thatchy.

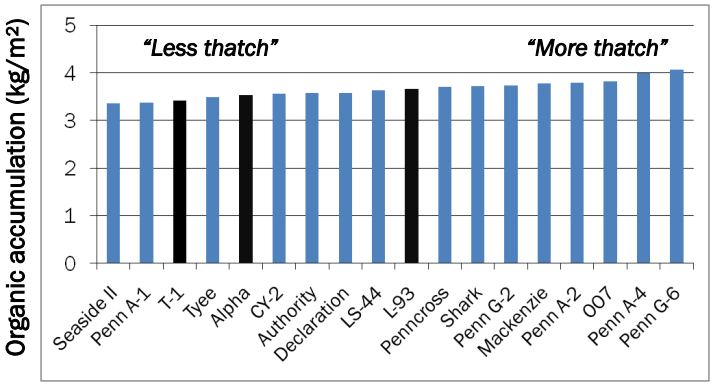
In related studies, researchers at the Univ. of Nebraska also examined the thatch accumulation of several bentgrass cultivars and found minimal differences. Similarly, Purdue researchers could not detect a clear relationship between shoot density and surface firmness. While cultivar differences were not detected in the Idaho study, increasing the N rate to 6 lbs./1000ft^2 resulted in increased thatch accumulation compared to the two lower rates.

Recommendation

Based on data collected in this and other trials, I recommend that bentgrass buying decisions should not be based solely on anticipated thatch accumulation differences. The fact remains that no significant cultivar thatch differences were noted under these trial conditions.

Jacklin Seed breeders have long asserted that experimental cultivars that possess undesirable traits (like scalping tendency or stemmy vertical growth) can be identified during the breeding process and eliminated. "False crowning" and uneven vertical growth seems to play more of a role in scalp tendency than does the actual grams of organic matter a cultivar produces.

One thing is clear: High N rates (6+ lbs.) are likely a thing of the past – not just for the additional organic matter they produce, but for the way they slow the green speed by inducing higher vertical growth. Implementing a good cultivation and sand topdressing program is still the best control measure for thatch accumulation.



Thatch accumulation of 18 creeping bentgrass cultivars from a trial in Idaho. Results were averaged across the 3 nitrogen rates discussed in the text.

Seed forecast, continued

Look for commons to tighten up in supply in late spring 2012, as we have seen a huge reduction in dryland acreage. Wheat, barley, canola, peas and lentils are bringing top dollar, and growers are migrating to these commodity cash crops in lieu of grass, so this will certainly help the inventory supply situation with this species.

Very much the same scenario with fine fescue: Production acres have been in retreat as inventories clean up. Inventories of bentgrass are backed up at the dealer level, because golf construction is in net-negative numbers. Production acres are substantially reduced of this species and will be for the foreseeable future until inventories are brought into line.