

Playing with thatch levels

Stephen A.G. Prinn MSc, lecturer at Askham Bryan College, York, with an alternative look at thatch

With today's budget constraints that many clubs are imposing it may seem ironic that the members and visitors to the course are also demanding more and more from the greenkeeping staff.

It is the greens where most of this focus would seem to lie and given that each hole allows for two putts per green it may be surprising to note that an allowance of 50% of the game is played on the greens. That's 50% of the game played on a little over 1% of the golf course. So the greens are often what greenkeepers are judged on, rightly or wrongly! This means the effect the green has on the ball, the playability of the surface, is of great importance.

When too much thatch is present the turfgrass environment changes and the effects of this can be seen in the way the ball interacts with the surface. Should levels of thatch become excessive then the disadvantages far exceed the, often stated, advantages of; providing a level of protection and resiliency against traffic stress and ball impact.

Several problems are associated with excessive thatch and need to be understood, the most notable issues as outlined by Beard (1973);

• **Increased disease and insect problems**

ABOVE: Thatch build-up on a putting green. Top dressing has been applied but a lack of mechanical removal has resulted in a layer forming.



- **Localized dry spots**
- **Soft, often referred to as, 'spongy' surfaces**
- **Decreased heat, cold and drought tolerances**

Thatch provides some pathogens with an ideal environment for the development of disease. Development of diseases will cause a thinning out or dying of the grass plants which in turn leads to uneven ball roll.

Localized dry spots occur when thatch dries out and becomes hydrophobic, preventing water, irrigation or rainfall, from reaching the soil surface, lack of soil water moisture will result in poor root growth and possibly the eventual dying of the turfgrass.

Soft surfaces can have several detrimental effects on the quality of the greens sward. The potential for scalping increases leaving uneven mowing heights across the greens and damage to the grass plant. Foot-printing may also occur, affecting the ball, which does not hold the line of a putt.

If a golf club has small greens, coupled with limited space for walk on and walk off areas perhaps due to surrounding bunker placements or the proximity of the next tee, or have limited hole placements within the green and this green has

high thatch levels, then those areas which receive the greatest amount of wear will compact the thatch in these areas.

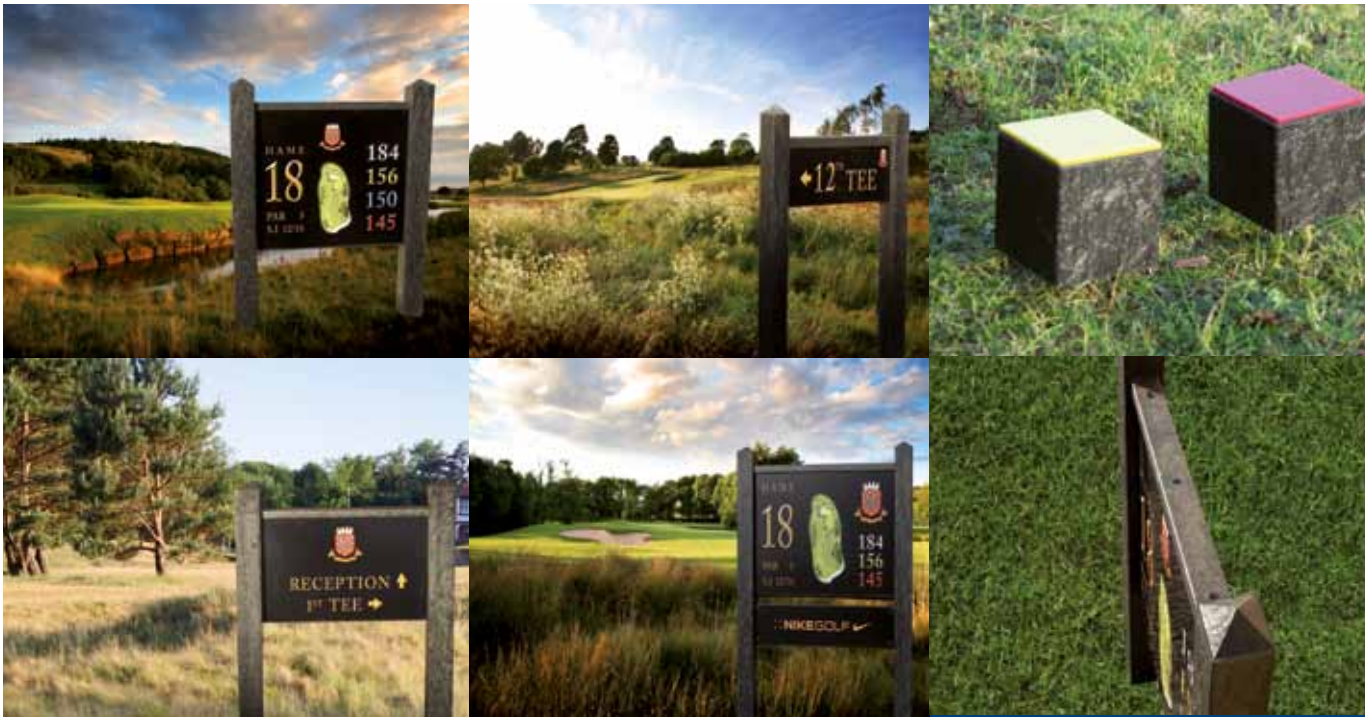
This will increase the ball roll distance in these zones, leading to a putting surface which has variability across the surface for ball roll. There will, therefore, be a variation in ball roll distance across the same green. Even without small greens high thatch levels may lead poor ball roll due to the softness of the surface.

It should also be noted that when greenkeepers attempt to combat the slowness of the thatch by double cutting; Nikolai (2005), found that scalping was much more prevalent on the second pass, resulting in a decline in the turfgrass quality and poorer ball roll.

While an equal increase in ball roll distance could be obtained from rolling rather than double cutting and that may be considered an option, studies by Nikolai (2005), have also shown that the effects of an increase in ball roll distance on a heavily thatched surface only last around 24 hours whilst compared to a green which is relatively thatch free where the effects of rolling may last up to 48 hours.

High thatch levels will also elevate the crown and roots of the grass plant above the soil surface,

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this exposes the key parts of the grass plant to extremes of weather that may subsequently weaken or kill off the plant.

Higher thatch levels therefore can be seen to lead to poorer playing surfaces, either directly through the surface becoming soft, or indirectly through the side effects of a weaker, or perhaps more stressed grass plant which is less able to deal with environmental factors and this subsequently causes a decline in grass cover.

Decline in grass cover may be addressed with over-seeding, but, seedlings that develop in thatch are more susceptible to injury from weather conditions, traffic and other stresses than seedlings which develop in soil (Turgeon 2007). Producing a weak sward in an already weak sward!

Therefore, it is vital to realise that there is an inverse relationship between thatch accumulation and putting green performance.

Thatch can be kept at bay with good maintenance regimes, but invariably mechanical methods will be brought into play. There are many terms that are used in the industry; scarification, verticutting and grooming have all been with us for many years.

Forms of aeration such as hollow coring could also be considered.

They do all have one thing in common; they disrupt the playing surface to a greater or lesser extent.

Disruption of the playing surface will affect the playability of the surface.

These operations should also be carried out when the environmental conditions are suitable.

Unfortunately this usually coincides with periods of better weather and subsequently more golfers and just maybe with an increase in the comments from the players about the "state of the greens".

Greenkeepers may suddenly find ourselves in a no win situation, the club don't want the work carrying out, because of the amount of play, whether from members or visiting parties. The greenkeeper may not want to do the work and face the comments about the greens. As for the initial problem, the thatch just continues to get worse and the putting surface quality is once again on the decline.

In conclusion, learn what causes thatch, learn how to deal with it without sacrificing the playability of the surface.

If thatch is a problem, there may need to be some changes.

But change is good. Remember, If we keep doing what we're doing, we're going to keep getting what we're getting.



ABOVE: Thatch should be regularly maintained through mechanical means along with top dressing, which will help dilute the organic matter layer.



LEFT: In low maintenance turf, thatch build-up occurs at a significant rate over a growing season. However, some thatch is good as it provides protection against moisture evaporation and resilience to wear and tear.