

Practical Thatch Control

Marcus Oliver gives some practice advice in dealing with thatch.

Very few Greenkeepers will need much of an introduction to the effects of thatch. Greens that are soft and spongy in damp conditions and quickly dry out and scorch when it is dry, are immediate giveaways.

Such symptoms can be quickly analysed by taking soil profiles. Any build up of yellow-brown thatch interspersed with anaerobic black streaks will be immediately apparent, as will the characteristic sour smell that goes with it.

A widely accepted definition of thatch is: "a tightly intermingled layer of dead and living stems and roots that develops between the zone of green vegetation and the soil surface". As such, thatch starts to accumulate where the production of dead organic matter exceeds the rate at which it decomposes. Therefore, much can be done to prevent thatch accumulating by the use of sound greenkeeping practices.



Note how much easier it is to identify the thatch layer on larger soil profile

THATCH PREVENTION

Because the natural decomposition of thatch is accomplished by the activity of aerobic bacteria, an effective aeration programme is essential to keep those bacteria alive and active. Slit tining is favoured by many Greenkeepers, due to its non disruptive action which enables it to be used repeatedly through the season.

Much greater care must be given to the timing of hollow core aeration - this is not merely to choose a time that will least frustrate the members, but in particular to prevent opening up the surface to the invasion of weed grass seeds. To avoid getting a polka dotted invasion of dark green *Poa Annua* plants in the midst of your fine turf, make sure you don't hollow core when *Poa* is flowering.

Besides aeration, good drainage and the avoidance of over-watering and over-fertilisation, are the other main factors in preventing thatch build up.

TIME FOR ACTION!

So what if, for any number of reasons, you have inherited a deep thatch problem - what are the steps to curing it?

Step 1 - Analyse and Report

Analyse the extent of the thatch by taking soil profiles of all greens and any other problem areas. Show these or photos of them, to your management and members to get their support for the necessary remedial action. Let them know that the desired improvement in putting surface quality and firmness can only be achieved if you have their practical support for carrying out the following steps.

Step 2 - Reduce the Causes

Review your feeding programme and check with other Greenkeepers, whose greens you admire, what they are applying and at what rates. You may be surprised how little feed many of the best courses use.

Check your irrigation sprinklers are effectively positioned without excessive overlaps. Far better to hand water certain areas when necessary, than just to turn on more automatic irrigation everywhere.

Install additional drainage, both to the greens themselves - if this is needed and also to prevent flooding from water running onto greens from slopes above.

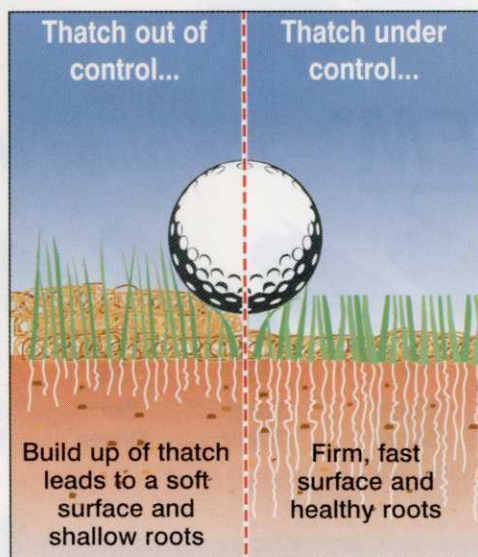
Avoid using topdressing mixtures with a high content of fine particles, which clog the surface and impede drainage.

Step 3 - Aerate Regularly

As mentioned earlier, a carefully executed programme of slitting and hollow core aeration, is one of the basic weapons in the battle against thatch. The important thing, especially with hollow coring, is to warn the members in advance as to what you are doing and why it is essential. Putting up copies of the poster "Aeration - what it is" (available from BIGGA) on the notice board and at the first tee, is a proactive step you can take towards gaining their understanding.

Step 4 - Verticutting and Scarifying

Once the underlying causes have been tackled, it is time to establish a programme of regular mechanical treatments to start reducing your thatch layer. These treatments are also the ideal accompaniment both before and after using the biological methods covered elsewhere in the feature. With a liquid product, your verticutting frequency can continue unaltered, but after applying a granular thatch remover, you should wait a fortnight before resuming verticutting.



Keeping thatch under control is vital for healthy turf and a fast true ball roll

Let's now look in more depth at these various mechanical methods, which have themselves been going through quite a revolution in recent years.

Probably the most significant development in greens maintenance, was the introduction of the worlds first ride-on greens triple mower by Jacobson in 1968. This was soon followed by "vertical mowing" or "verticutting" attachments which fitted in place of the standard mowing units. Thatch control was then a triplex operation, but was still barely able to keep up with the amount of thatch that the new automatic irrigation systems were starting to cause.

The most recent developments in this sequence were when in 1998 Thatch-Away introduced the worlds first verticutting units with tungsten tipped Fan-Force blades. This was followed in 2002 by the Supa-System, which was the world's first Interchangeable Cassette System for triple mowers. This now enabled genuine scarifying, as well as verticutting, to be carried out using a ride-on greens triple mower.

SO WHAT DO YOU USE AND WHEN?

Verticutters, continue to be the most widely used attachments and can be used virtually all season long at different working depths. Start at 1mm below surface level increasing this to 2mm, on a weekly basis once the grass is growing strongly. Reduce to monthly usage, in the height of summer and then increase again to weekly use in late summer and early autumn.

Scarifiers should only be used when there is strong growth in the late spring, late summer and early autumn. Never scarify (or verticut deeply) when *Poa Annua* is flowering. Typical working depth for scarifying is around 8-12mm and this has the two-fold effect of both removing a substantial amount of thatch and also allowing oxygen to penetrate the root zone, which further assists the decomposition of thatch.

Sarel Rolling and Deep Slicing to a depth of approximately 20mm, are two further treatments which are non disruptive of the playing surface, but which assist oxygen entering the root zone and therefore help promote the natural decomposition of thatch. Both pieces of equipment are now available as cassettes to fit the Supa-System, enabling these operations to be quickly carried out using a greens triple mower.

Step 5 - Topdressing

Topdressing is an important element in creating a free-draining surface, with capillary continuity to the root zone. This in turn, helps to provide an environment in which thatch decomposition can naturally occur. Effective brushing-in is vital, to fill coring holes and to avoid burying the thatch under deep layers of topdressing which can result in the development of anaerobic black layer.

Choose your topdressing material carefully, avoiding mixtures with a high concentration of fine particles which can lead to sealing of the surface. For USGA specification greens, the recommended objective is to maintain the root zone at 3% organic matter by weight by diluting the thatch with regular sand topdressing.



Modern tungsten bladed verticutters can remove vast amounts of thatch whilst leaving an immediately playable surface

CONCLUSION

To sum up the key elements of a successful thatch control program:

- Don't be complacent. Diligent soil profiling may reveal more thatch than you might imagine.
- Don't over feed or over water. These are two of the most common causes of thatch.
- Do aerate regularly
- Do verticut regularly. A little and often approach is by far the safest and can be highly effective in reducing thatch layers as deep as 3" down to an optimum level within a couple of seasons.
- Do scarify if you have a serious thatch problem but use discretion as to how deep you go and when you do it. Aim for periods of strong growth, to give a quick recovery and avoid times when *Poa Annua* is seeding.
- Do verticut deeply, or scarify, before using biological thatch control products, to enhance their effectiveness.
- Do keep a good supply of oxygen into the thatch zone by regular sarel rolling and deep slicing.
- Do topdress after scarifying and hollow coring but be certain to use a compatible, free draining material and to brush it in evenly.

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Cassette mounted equipment has opened the way for most greenscare operations to be done using a greens triple mower