

The Benefit of Turf Groomers
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Scalped turf is a problem for most turfgrass managers and for the health of the grass. The unsightly appearance from scalped turf is second only to the recovery time to superior play (Fig 1.). Understanding how a plant recovers from scalp is the first step in knowing how proper cultural practices can minimize turf injury and to expedite recovery.

Grooming is a mechanical process which can avoid the severity of scalping. Grooming turf is not rocket science, nor is it verticutting or aerification. Grooming, simply put, is a proactive means of managing the plants growth habit to provide for a high quality, healthy plant. It is important to distinguish grooming from vertical mowing. Both processes use vertical rotating blades but from a biological stand point their similarities end. Rotational speed, depth of penetration, and width of blade are the primary physical differences.

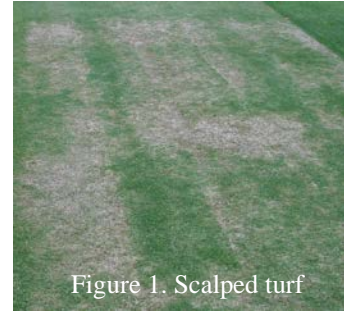


Figure 1. Scalped turf

The verticutter utilizes the process of rotating vertical blades which penetrate deep into the crown area of the plant and severs stolons and stems. Verticutting is a remedial process that is correcting a problem by reducing, removing or eliminating thatch. A verticutter will be spaced $\frac{1}{2}$ - 1" apart, is made of heavier gauge steel, and most often will be on a stand-alone rotating shaft

The groomer, on the other hand, has much thinner blades, and a higher rotational speed. It may be a stand-alone reel or in combination with a reel mower.



Figure 2a
Groomer $\frac{1}{4}$ " - $\frac{1}{2}$ " spacing

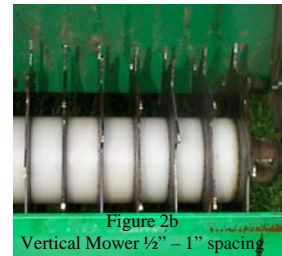


Figure 2b
Vertical Mower $\frac{1}{2}$ " - 1" spacing

The leading edge of the groomer blade is cutting the turf below the height of cut (10 - 30%) and removing (scalping) a single or a few meristems (growing points) each time the grass is mowed. As the growing points are removed, the plant's crown will

initiate a new growing point as part of the recovery. With each mowing, growing points are removed, new buds are initiated, and the plants maintains juvenility rather than senescence and growing vertical rather than horizontal. The rotating vertical blades may be spaced between ¼ - ½” apart and measure less than 1/8” in thickness. To differentiate between a groomer (Figure 2a) and a vertical mower (Figure 2b) note the difference in blade thickness, blade spacing, depth of cut and general overall expectations.

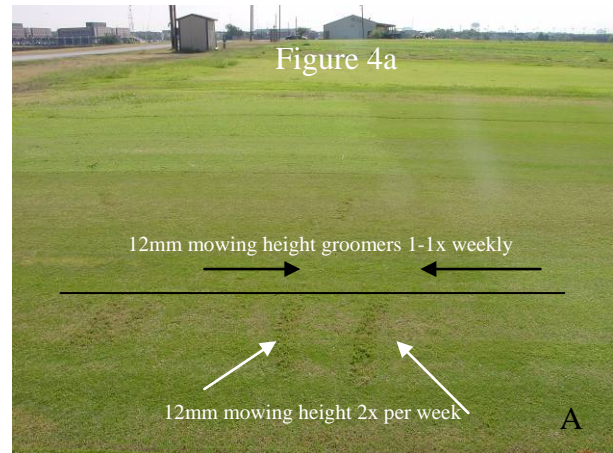
The product of these two pieces of equipment are quite different as demonstrated by the Figure 3 where groomed turf (Figure 3a) is less impacted from a visual standpoint and causes little or no disruption of the turf surface whereas the more severe Verticutting (Figure 3b) can be quite disruptive. While verticutting is a remedial cultural practice requiring follow-up removal of debris, it is a highly effective process of opening the turf. Verticutting and aerification are two very effective ways of reducing organic matter in the soil profile. *Organic matter management in the root zone will be discussed in greater detail in a follow-up article.*



Understanding the basic differences are essential to proper use of each of the pieces of equipment. A groomer is not a verticutter – a verticutter is not a groomer. Groomers are designed with much lighter construction, have lower power requirements, and are often incorporated into the mower in association with the reel. The verticutter is a series of only vertical blades. Groomers were not designed as a verticutter nor will they stand up to the severe pressures imposed on a verticutter.

To best understand the difference, this discussion will concentrate on how the vertical rotating blades of the groomer actually condition the plants growth response and the impact this growth response will have on the performance of the turf. The use of groomers can aid in the reduction of grain and aid in lifting the turf for a cleaner cut. Brushes can accomplish much the same results. However from a biological standpoint the

adjustment of the blades below the height of cut provides stimulus to the plant to initiate new growing points from the crown. This effectively results in a controlled scalping. For example with ½” spacing between vertical blades that are approximately 1/8” in thickness results in approximately 20% of the stems being subjected to clipping each mowing. ($\frac{1}{8} + \frac{1}{2} = \frac{5}{8}$). Each grooming then “scalps” a fraction of the turf which is staged in the timed recovery response. By repeatedly utilizing the groomers, the entire



turf community is eventually forced to be in a rejuvenated state with new growth from the crown of the plant. Grain in the turf occurs when the culm or stem is allowed to elongate and “lean” a particular direction with the growing point at the cut end of the stem. If a few stems are removed periodically and new growth is initiated from the base (crown) of the plant the subsequent growth is more vertical and less prone to developing a grain. The scuff test (Figure 4a-c) demonstrates this very well. The top photo (4a) provides a cross section of the ½” height mowed turf area including reel mowed only (front) and 1 reel only and 1 x per week grooming with scuff marks.



A close up of each of these areas also suggest the higher degree of scalping noticeable in Figure 4c than 4b. The reason for the scuffing which will equate to graining tendency is the true length or height of cut as the plant extends far beyond the crown area

of the plant (Figure 4). This turf is mowed with a ½” bed knife setting, however the increased stemminess has forced the reels to ride on top of the turf and the use of heavier reels are used to counter the increased thatchiness. This stemminess leads to the graining and thatching of the turf. If groomed the stems and graininess are removed with new leaf tissue originating closer to the crown area of the plant making for a tighter less spongy surface. A major positive attribute of grooming is maintaining juvenility in the plant community.

In addition to altering the way orientation of leaves and meristems, the position of the growing point is also changed. With the extending stem being removed, the plant will initiate new growing points at the crown. Repeated mowing with turf groomers will encourage and or condition the plant and turf to grow tighter to the soil making for a



firmer, more open canopy. This open canopy aids in escape of excess moisture in the turf canopy and penetration of light to the leaves and crown and results in generally a healthier, more resilient turf (Figure 6). On the left is turf mowed weekly at ½” 1 mowing with reels only and 1 mowing with groomers engaged. On

the left is the same cultivar of grass (Tifway 419) mowed at ½” twice weekly with reels only. The reel mowed only turf (right) was more prone to scalping and loss of green tissue. This is also the turf represented in Fig. 3 and 4.

Any of the stoloniferous and/or rhizomatous grasses will behave in a similar manner. This approach will effectively control thatch in the canopy, allow for a much drier canopy and turf the will tolerate more disease pressure, and provide sustainable performance with minimal inputs. Grooming reduces or eliminates the need for verticutting which is disruptive to play. With grooming you will have a juvenile, resilient turf capable of provide in quality sustainable turf with fewer cultural inputs.