

Vertical mowing

A vertical mower has a series of knives vertically mounted on a horizontal shaft. The shaft is rotated at high speeds and the blades slice into the turf and rip out thatch and other debris (Fig. 10). Different objectives can be met with vertical mowing depending on the depth of penetrating knives. Grain of greens is reduced when knives are set to just nick the surface of the turf. Shallow vertical mowing also is used to break up cores following aeration which facilitates a topdressing effect. Deeper penetration of knives stimulates new growth when stolons and rhizomes are severed and results in removal of accumulated thatch. Blades should be set at a depth to just cut stolons and no deeper if new growth stimulation is the objective. Desired depth of thatch removal will necessitate depth that blades are set when dethatching is the objective. The bottom of the thatch layer should be reached by vertical mowing, and preferably the soil surface beneath the thatch layer should be sliced. However, there is a limit to the depth blades should be set or excessive removal of turf roots, rhizomes, stolons, and leaf surface may occur. Vertical blade spacing for thatch removal in bermudagrass should be between 1 and 2 inches. This range provides maximum thatch removal with minimal damage to bermudagrass. Seedbed preparation prior to overseeding is also accomplished by vertical mowing.

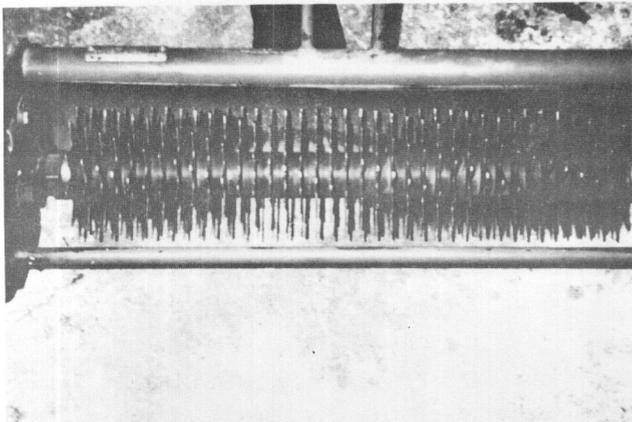


Fig. 10. Narrowly spaced, power driven blades of a vertical mower used to remove excessive thatch in turf.

Deep vertical mower penetration requires the use of a heavy-duty machine which can penetrate 2 to 3 inches. Deep vertical mowing grooves the turf surface thereby topdressing is required following this to smooth the surface and cover exposed stolons. Shallow-rooted or immature turf can be severely damaged or torn out by deep vertical mow-

ing. The turf should have some preliminary testing at the site to be verticutted by hand pulling to measure if favorable rooting of the grass exists. Irrigation and topdressing should follow such deep vertical mowing to prevent quick drying out of exposed roots, rhizomes, and stolons and to help smooth and encourage bermudagrass recovery.

Rate of thatch accumulation dictates the frequency of deep vertical mowing. Vertical mowing should begin once the thatch layer on golf greens exceeds 1/2 inch. This layer can be periodically checked by using a knife to slice a plug from the green. Areas prone to thatching may require heavy vertical mowing several times per year. This should begin in mid- to late-spring when bermudagrass is actively growing and repeated 2 to 4 weeks prior to fall overseeding. A mid-summer vertical mowing may also be necessary. With any vertical mowing, a 30-day period of favorable growth is needed following vertical mowing for time to recover. Therefore, the last heavy vertical mowing of the season should be timed at least four weeks before the first average frost (north Florida).

If the thatch layer has become excessive (> 2 inches), it may become uncontrollable by vertical mowing (Fig. 11). In such extreme conditions, the grass and thatch layer need to be removed with a sod cutter and soil added to level the areas and then is reestablished. This problem can be best avoided by verticutting and topdressing frequently enough to keep the thatch under control.

Interchangeable vertical mower units are now available for many of today's triplex greensmowers. This equipment allows for frequent vertical mowing and simultaneous debris collect. The vertical blades on greensmowers should be set to only nick the surface of the turf so the surface is not impaired. By conducting frequent vertical mowing, severe vertical mowing needed for renovation may be avoided.

The grooming mower is a recent improvement in vertical mowing. In front of the reel cutting unit of triplex greensmowers is an attached miniature vertical mower (Fig. 12). Each time turf is mowed with this unit, the turf is lightly vertically mowed (or groomed). This unit improves the playing surface by standing up leaf blades before mowing, thus removes much of the surface grain. New shoot development is also stimulated by slicing stolons, and thatch near the surface is removed.