

Making the Cut

by Bucky Trotter

Athletic turfgrass plants must live and perform at lower than natural heights. You must understand how the plants operate before you can develop a good mowing program.

Mowing reduces leaf surface, which plants use to manufacture and supply carbohydrate nutrition. When plants are in their active growing stages, carbohydrate production is high. This allows them to store nutrition as food reserves that will help in periods of stress or dormancy.

Mowing lower than the optimum height during the growing season can impair plants' ability to develop these reserves. When the plants die, you may cite heat or cold injury as the main cause. But the trouble started when you cut off their food supply.

When their leaves are cut, plants focus energy on re-establishing the lost surface area. This process requires carbohydrates, and the plants may need to reduce the supply of nutrition traveling to the root system to compensate. This can reduce or stop root growth.

Plant carbohydrate distribution gives the leaf system priority over the roots, rhizomes, and stolons. As the percentage of leaf tissue removed increases, so does the period of reduced root growth. The root system will continue to become more shallow, which will impair the plants' ability to withstand stress, especially during drought.

Equipment selection

Several variables should factor into your selection of mowing equipment. You have to find a price that fits your budget, while considering cutting acreage and the types of turf and terrain the equipment will cover. Don't forget to include maintenance issues in your decision, and factor in service and parts availability. Desired quality of cut and cutting height will also direct your choice.

Cutting action adds another factor to the list. Mowing units use either impact or sheer cutting.

Rotary and flail mowers produce impact cutting. Rotary units provide acceptable-quality cuts at high cutting heights. They may require more belts,

but they tend to be relatively inexpensive. Rotary mowers will not strip or cut patterns into turf.

Reel mowers use scissor-type, sheer cutting action. They provide a quality cut at lower cutting heights than rotary mowers. They also require less power, but tend to be more expensive than rotary units.

Equipment maintenance

Proper maintenance can prevent a lot of common equipment problems. Check and maintain fluid levels regularly. Closely monitor oil, hydro fluid, and water in the batteries.



Courtesy: Textron

Change filters according to manufacturers' specifications, and regularly check and maintain all belts. Tire pressure is also very important, and all equipment should be greased as specified.

Clean and wash your equipment before moving it between sites. Many turf diseases can be transported from one field to another if infected clippings travel with the mower.

Because of their high nitrogen content, clippings can also corrode and rust mower decks. Dirt can work into bearings and seals to cause damage as well. A thin layer of dirt can increase hydrostat temperature by 10 degrees, which can push it toward its breakdown level. Always allow units to cool down before cleaning.

Keep blades and reels sharp and properly adjusted at all times. Dull



Courtesy: John Deere

equipment will tear or shred plants, giving them a straw-colored tint and leaving them vulnerable to disease.

A few minutes of care before and after each mowing will extend the life of your equipment, and will improve its performance.

Quality of cut

Factors that affect cut quality include blade sharpness, blade speed, cutting unit suspension, wheel base size, grass discharge, and dispersion characteristics. Keep an eye out for the following problems:

- **Scalping:** This condition results when you remove too much leaf surface. It can also occur when a mower is unable to follow contours due to excessive speed, poor deck adjustment, low rpm, bumpy terrain, or rough soil.

- **Streaks:** One or more lines of uncut grass can stem from grass that's lying or being forced below the effective cut height. A damaged reel or blade, or a cutting unit overlap can also leave an area of the blade path uncut.

- **Clumping/Windrowing:** Mowers with good dispersion characteristics will distribute clippings evenly over the entire grass area. These clippings do not have to be removed if they are small enough to work their way into the uncut grass.

Inefficient discharge can cause clippings to accumulate in unsightly clumps or rows. If excessive clippings lie on the surface, they must be removed or scattered with a second cutting. Avoid cutting when grass is too wet, or clumping will increase.



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