

EQUIPMENT UPDATE

Options for Mulching

By Bob Tracinski

If you haven't yet adopted Grasscycling, you must have some questions and concerns about how mulching grass clippings will fit into a commercial mowing program.

Consider the options available to enhance the performance of your existing equipment when mulching, such as mulching kits, blade selection and deck attachments. If you will be purchasing new equipment, analyze your specific needs under all the mowing situations your crews will encounter. A dedicated mulching deck only mulches grass clippings. It can't be altered to bag or side-discharge. Convertible mowers offer the ability to mulch, side-discharge or bag. With any mower, the operator controls the travel speed and direction and the engine throttle setting.

The cutting environment presents an assortment of variables that you must assess at each mowing. The mower operator must analyze the type and height of the grass or mixture of grasses, desired cutting height, turf lushness or thickness, turf moisture content, and the general terrain characteristics, including hills, bumps, and landscaping.

The mowing equipment, machine operator and the cutting environment together present some interesting challenges in maintaining a high-quality cut while mulching.

As the mower blade rotates it not only cuts, but it also creates a vacuum within the mower deck that pulls grass up for an even, clean cut. As the mower moves forward, the blade tips take a series of bites of grass. The grass is cut only by the sharpened portion of the blades, not by the entire blade.

Engine Considerations

Commercial mowing already makes mower engines work hard. Engines must be powerful enough for the loads they will tackle. Adding mulching to the picture will require more horsepower from the engine to handle the additional cutting load.

Mower engine horsepower requirements increase as the bite size increases. A larger volume of material must be cut and moved a greater distance within the mower deck. Engine speed controls blade speed. Engines are designed to run at full tilt, after the warm-up.

For mulching, you need to consider the aerodynamics of the blade(s) and the cutting chamber. The deck shape and blade design combine to lift clippings up within the reach of the circulating blades inside the deck. The blades cut and recut the grass until the material is small enough to blow into the turf canopy where it's hidden while it decomposes.

Lift can vary with the type of blade you choose. Some blades have little

lift and some provide large amounts, creating a tremendous vacuum or pulling action. Certain mower decks give you the option of changing the blade so you can fine tune the cutting and vacuum.

Greater lift also creates greater resistance to the blade. That means blade rotation requires more horsepower. Blade shape can change air flow characteristics. Having a longer sharpened portion of the blade is an important factor. Because the blade cuts and recuts grass several times, mulching also requires more horsepower.

Deck Design

For mulching, the inner mower deck configuration is altered. On small walk-behind mowers, the discharge chute is closed off by a mulch plug that conforms to the bottom of the deck. On larger mower decks, mulching attachments direct the cut material back into the rotating blade or blades and partially or fully close off the discharge chute. Some mulching attachments have an adjustable baffle to control the flow of outgoing clippings. This attachment ranges from complete chute enclosure to partial enclosure to no enclosure.

A clean deck, sharp blades and proper mower deck adjustment also are critical with mulching. Properly adjusted, the deck tilts slightly forward so only the sharpened tips of the blade come in contact with uncut grass. The mower bites

the grass at the front and grass height is determined by the height of the blade at its most forward position.

If the deck tilts to the rear, the front of the blade takes a major bite and the trailing edge also takes smaller bites as the blade rotates. Final cut height is determined at the rear of the blade rotation. The entire length of the blade is in contact with the grass. This causes drag and requires extra engine horsepower. It also leaves the lawn with a ragged appearance.

Debris and pulverized grass clippings can form a sticky substance that packs the underside of the mower deck. This can result in clumps of cut grass on the lawn or strips of uncut grass. It also restricts the air flow.

Cut quality also is affected by the mower's ground speed and, because the discharge opening is closed, the reduced air flow through the deck. Crews may experience initial problems with mulching because they fail to run the engine fast enough to create the necessary blade rotation or they cover the area too quickly. Operators must slow down. However, because there is no material collection, the total time spent mowing is shorter.

Today's extremely maneuverable mowers with high torque engines tend to promote faster ground speeds. You may need to caution your mower operators to slow down to Grasscycle effectively.

The turf canopy must be thick enough to hide grass clippings. The one-third rule (removing no more than one-third of the grass blade in any one mowing) is especially important in mulching.

Check your options. Grasscycling can save you time and money. Blades with greater lift and mulching kits together may turn your present equipment into mulching mowers. New equipment may give you options to handle mowing more effectively under all conditions. The pressure is on.

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