



# Ray Smith & Associates, Inc.

Tree and Plant Health Care  
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## LAWN MOWING

Mowing is one of the most important cultural practices performed in lawn maintenance. Regardless of whether the lawn is fertilized, irrigated or receives applications of control products, proper mowing practices are essential if a high quality lawn is to develop. Properly mowed lawns will have fewer weed populations, better moisture stress tolerance and generally better quality than lawns not properly mowed.

### **Lawn Mowers**

Lawn mowing is a partial defoliation of the turfgrass plant. The blades (leaves) of the grass plant are cut with mechanical machines called mowers.

The primary type of mower used on most home lawns is the rotary mower. This mower uses an engine (gasoline or electric powered) to horizontally rotate a blade. The blade is designed to create a vacuum resulting in the grass being lifted then sharp edges of the blade cut the leaf blades. Rotary mowers are constructed to trim close and are useful for mowing at higher mowing heights. Height adjustments of rotary mowers is relatively easy. Many sizes and models are currently on the market ranging from small push models to large riding units capable of mowing large areas in a short period of time.

One of the most recent advancements in rotary mower technology is the refinement in mulching mower design. Recently, a number of manufacturers have introduced mulching mowers into their product lines. These introductions are in response to the demand of homeowners to assist in making the return and recycle (i.e. "Don't Bag It") programs an aesthetically satisfactory option. In general, the mulching lawn mowers are modified standard rotary mowers designed to cut then recut the clippings many times to allow the filtration of the fine pieces into the canopy of the lawn and not remain on the surface. The design modifications intended to assist in this recutting include the use of high lift blades with expanded cutting edges and restrictions on the grass discharge ports.

### **Cutting Heights**

Mowing height is probably the most important parameter of mowing. Turfgrasses, like other plants, must manufacture sugars through photosynthesis in the leaves if they are collectively to develop into a high quality lawn. Turfgrasses mowed at low heights have limited leaf area to sustain photosynthesis rates necessary to maintain good plant vigor.

In addition to leaf area, a direct relationship exists between the height of the turfgrass and the depth and total mass of the root system. Research with Kentucky bluegrass has shown that root growth was more than twice as great when the grass was mowed at a 2.0 inch height versus a 0.75 inch height. In general, a lawn mowed too short will have a shallow root system with little total root mass. The impact of shallow, weak root systems is most apparent during summer stress periods. When soil moisture becomes limiting, the closely mowed lawns

usually exhibit stress first and the loss of turfgrass plants is more likely. Higher mowing heights during the summer period will keep soil temperatures cooler, preserve soil moisture and help maintain turfgrass quality. Recommended mowing heights of cool season turfgrasses cultured in Ohio include:

	<b>Mowing Heights During</b>	
<b>Turfgrass Species</b>	<b>Spring and Fall</b>	<b>Summer Stress Periods</b>
Kentucky bluegrass	2.0 - 2.5	2.5 - 3.0
Perennial ryegrass	2.0 - 2.5	2.5 - 3.0
Fine Fescues	2.0 - 2.5	2.5 - 3.0
Tall Fescue	2.5 - 3.0	2.5 - 3.0

Turfgrass mowed at the recommended height will have deeper, stronger root systems.

Mowing height can play an important role in prevention of lawn weed establishment. Research has shown that higher mowing heights result in fewer weeds per unit area. This is due to higher grass providing more shading and competition to the weed seedlings during the initial establishment phases.

### **Mowing Frequency**

The lawn should be mowed frequently enough so that no more than 1/3 of the leaf blade length is removed during any one mowing. For example, if Kentucky bluegrass is normally mowed at 2 inches, the height should not be allowed to grow beyond 3 inches before it is mowed back to 2 inches. If 1 inch is mowed, 1/3 of the total blade length is removed and the 1/3 mowing rule has been followed. During periods of active turfgrass growth, many lawns will require mowing more than once per week if this recommendation is to be followed. Proper mowing frequency is a key to successful implementation of the "Don't Bag It" clipping return program.

### **Additional Mowing Considerations**

#### **Mower Maintenance**

All mowing equipment should be kept in good working condition. Having the mower serviced prior to the heavy spring mowing period will help ensure routine, maintenance-free mowing. Mower blades should be sharpened each spring and as needed during the season. A dull mower blade frays the ends of blades and results in brown tips which are unsightly and indicate damaged turfgrass.

#### **Clipping Return**

Turfgrass clippings contain measurable amounts of nitrogen, phosphorus and potassium. Research has shown that when clippings are removed, 20 to 25 percent more fertilizer was necessary to maintain comparable color and quality as areas where clippings were returned. Contrary to popular belief, turfgrass clippings do not contribute to thatch accumulation if proper mowing practices are followed.