Minimizing Traffic Damage to Your Florida Lawn

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Excess vehicular or foot traffic causes multiple injuries to turfgrass. One injury is that to grass shoot tissue, where physical damage to leaf blades appears as abrasions, tearing, or stripping of the leaf tissue. This injury results in death of the leaves and a reduction in photosynthetic capacity. Another area that can be damaged by traffic is the root system because of soil compaction from the weight of the traffic. Root growth and viability are greatly reduced, resulting in less capacity for roots to seek out water or nutrients. Often, damage from traffic causes both types of injury simultaneously. Rates of recovery vary based on a) the capacity of the grass to tolerate traffic injury; b) the growth rate of the turf, which determines how long it will take the grass to recover from the injury; and c) the severity of the injury. In addition, there are specific management and maintenance practices that will improve the wear tolerance of your turfgrass.

Wear Tolerance of Warm-Season Grasses

The warm-season grasses grown throughout Florida are generally more wear tolerant than cool-season grasses grown in northern climates. A typical ranking of wear tolerance for our warm-season grasses is as follows:

1. Seashore paspalum and bermudagrass (most tolerant)
2. Zoysiagrass
3. St. Augustinegrass, bahiagrass, and centipedegrass (least tolerant)

In some cases, a species may have one cultivar (or type) that exhibits better wear tolerance than another within the same species. This is due to genetic differences within a species and differences in rate of regrowth. There are generally few differences among the cultivars within the common lawn grass species used throughout the state. For example, all of the St. Augustinegrass cultivars have poor wear tolerance, with some minor differences between cultivars.

How You Can Improve the Wear Tolerance of Your Lawn

There are some things that you can do to reduce injury from traffic. If vehicular or foot traffic is unavoidable, then pavement, bricks, or stone provide a better groundcover than grass in the affected areas. Avoiding repeated traffic paths also alleviates injury and allows the grass time to recover.

Fertilization

Fertilization regime can strongly influence the ability of the grass to withstand injury as well as its ability to grow out of it. While nitrogen fertilizer is an important component in encouraging recovery, applying nitrogen in excess reduces wear tolerance. This occurs because the nitrogen causes grass to grow rapidly, resulting in lush, succulent tissue that is less able to withstand the injury. Proper nitrogen
fertilization, however, improves wear tolerance in two ways. First, it promotes greater shoot density (number of shoots per unit area) of the grass, thereby providing more shoot tissue to absorb the injury. Second, it allows for faster regrowth following the injury and promotes new lateral growth to help the grass cover any bare ground resulting from the injury. For more information about the recommended fertilizer rates for your lawn, please refer to The Lawn Fertilizer Toolbox (http://edis.ifas.ufl.edu/ep435).

Potassium fertilization also strongly influences turfgrass tolerance to many stresses, including wear injury. Adequate potassium fertilization helps the grass to survive with less injury and also helps it to retain adequate carbohydrates for subsequent regrowth. Potassium and nitrogen should be applied to traffic-stressed turf in equal amounts. An example of a fertilizer that would supply this is a 15-0-15 fertilizer.

**Mowing**

Proper mowing practices influence grass wear tolerance. Higher mowing heights improve tolerance by leaving more shoot tissue available to absorb the injury. It also results in deeper rooting than closely mowed turf. Deeper rooting provides greater stress resistance. Scalping, or low mowing, of stressed turf results in greater damage, slower recovery, and possible turf death.

**Irrigation**

Irrigation also can influence wear tolerance. Research has shown that properly irrigated turfgrass (not over- or under-watered) allows the leaves to better absorb the impact of the injury. Additionally, deep rooting is encouraged by infrequent, longer irrigations applied only when the turf shows signs of wilt. Daily or frequent watering results in roots that remain in the top few inches of soil and a grass plant with less capacity to withstand any environmental or biotic stress. It is important, however, to apply adequate irrigation to wear-stressed turf. As mentioned above, this allows the turf to better absorb the injury and results in less damage than would occur on dry turf.

**Aeration**

If soil compaction is the primary problem, it can be alleviated by aeration of the soil, which helps loosen the soil and allows oxygen to reach the roots. Aeration can be as simple as using a small foot-press aerator in small areas, or as complex as a job requiring commercial equipment to drill holes in the soil. This procedure should be followed by topdressing, which is the application of light amounts of soil (approximately ¼-inch application) over the top of the turfgrass. Over time, topdressing may minimize compaction, reduce thatch, and improve the drainage or water retention of the site.

Remember that some traffic may be unavoidable on your lawn. In these cases, adopting a “wear-tolerant” attitude may be helpful.