

Don't Fertilize the Lawn This Late



Photo, special to Democrat: Current research indicates that it's best not to fertilize your centipede or St. Augustine lawn this late in the year.

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Some lawn care companies promote heavy nitrogen fertilization in the fall months for centipedegrass and St. Augustinegrass lawns and claim to have no problems resulting from this fertilization. While some lawns may experience no winter injury and will surely remain greener longer and may green-up earlier in the spring, there are still reasons to be cautious when approaching this type of fertilization regime. Possible problems include:

- Winter injury that may damage tender new growth promoted by the nitrogen
- Depletion of carbohydrates to produce the growth that follows a nitrogen application
- Fewer stored carbohydrates to provide greater stress tolerance to both biological (insects, disease) and environmental (shade, traffic, under or over-irrigation, etc.) stresses
- Warm-season grasses slow down their growth in response to both temperature and daylength. Nitrogen application disrupts the natural cycle by promoting growth, again leaving the turf susceptible to other stresses.
- Because the root system is less active during the fall and winter, the lawn is able to take up less of the nitrogen applied to it. The nitrogen that is not taken up has a greater probability of leaching past the root zone, potentially resulting in non-point source pollution of ground waters.

Don't Fertilize the Lawn Too Early

Previous research on late fall nitrogen fertilization of lawngrasses has looked only at bermudagrass. Quiroga-Garza and Picchiono (2003) found that nitrogen applied as urea or sulfur-coated urea at the onset of short-days (fall) increased clippings and color but could also potentially increase leaching loss of the nitrogen and that the increased color did not justify this potential risk. Richardson (2002) found that late season applications of nitrogen and trinexapac-ethyl (a plant growth regulator sold as Primo) enhanced fall color retention and promoted early spring green-up of bermudagrass with no harm to rhizome or stolon development. Similar responses were observed by Goatley (2000), who looked only at late season nitrogen application with no growth regulator. While it would appear that bermudagrass can safely be fertilized with late-season nitrogen applications, none of these researchers directly measured the fate of the nitrogen and how much was taken up by the grass vs. how much was leached through the soil.

When considering these findings, it is critical to consider the morphological differences of bermudagrass vs. centipedegrass and St. Augustinegrass. While bermudagrass has rhizomes, which serve as the primary underground nodal regrowth organs and carbohydrate repository, centipedegrass and St. Augustinegrass do not have rhizomes, which makes them more vulnerable to environmental stresses and leaves them less able to survive severe injury to shoot tissue. This is an important, and often overlooked, morphological disadvantage of these two types of grasses.

When looked at from a turf physiological and morphological perspective, there is not much to recommend late season nitrogen applications to centipedegrass and St. Augustinegrass. Late season potassium, on the other hand, may well offer benefits to both species, provided it is not applied too late in the season for adequate root activity to take up the ions. This is the justification for winterizers such as 5-0-15, 5-0-20, or 0-0-7. But, considering that research findings do not support the benefit of higher nitrogen winterizers, and then also considering the potential negative environmental implications due to potential nitrogen leaching, late fall fertilization with nitrogen should be approached with a great deal of caution.

So, you ask, why has the University of Florida not done this specific research to answer this question on lawn care in north Florida? The University has a research contract with the Florida Department of Environmental Protection to answer these and other questions over a 5-year period. Research will be conducted in three locations state-wide, including Milton and Gainesville, on the late season nitrogen application issue. We will provide two years of research data from both locations to determine the effect of late season nitrogen fertilization on the physiology, survivability, and future stress tolerance of the grasses. More importantly, we will look at the potential for non-point source pollution that may result from these activities.

Until this research is underway, we suggest proceeding cautiously with late season fertilizations, particularly those with much nitrogen. For north Florida, mid-September would be about the latest that the University of Florida recommends applying nitrogen.

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