

## TURFAX™

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## Research Summary

### Salt Tolerance Comparisons Among Bentgrass Cultivars

The comparative salinity tolerance of 33 creeping bentgrass (*Agrostis stolonifera*), one colonial bentgrass (*Agrostis capillaris*), and one velvetgrass (*Agrostis canina*) cultivar(s) were assessed by hydroponic methods in a controlled-environment glasshouse. Following gradual acclimation, the individual cultivar treatments were exposed to moderate salinity stress of  $8\text{dS}\cdot\text{m}^{-2}$  for 10 weeks to simulate chronic salinity. Turfgrass responses to chronic salinity levels were assessed in terms of leaf clippings dry weight, percent green leaf area, root dry weight, and root length. Ranking with good salt tolerant in this investigation were Mariner, Grand Prix, Seaside, and Seaside II, while Avalon (velvet), Ambrosia (colonial), SR 1119, Regent, Putter, Pencross, and Penn G-6, were found to be salt sensitive. Ranking intermediate in salt tolerance were L-93, 18<sup>th</sup> Green, Penn G-2, and Syn 96-1. These results indicate a substantial range in the salinity tolerance among the 33 *Agrostis* cultivars. Total shoot death occurred after nine weeks for Putter, Ambrosia, and Avalon, and after ten weeks for Penn G-6, Pencross, Regent, and SR 1119.

**Comments.** For those turf sites where salinity problems may already be present in the existing soil or where irrigation water may contain significant levels of salts that can result in a buildup in the soil, it is advisable to select a salt tolerant cultivar of *Agrostis stolonifera*, if this is the species required for the use site. These findings indicate there are great differences in salt tolerance among the various bentgrass cultivars. Among the cool-season turfgrasses, bentgrass (*Agrostis*) has relatively good salt tolerance. However, one should be reminded that superior salt tolerance can be found in several warm-season grasses, including seashore paspalum (*Paspalum vaginatum*), bermudagrass (*Cynodon* spp.), St. Augustinegrass (*Stenotaphrum secundatum*), and certain zoysiagrasses (*Zoysia* spp.). **"Salinity tolerance of 35 bentgrass cultivars." Kenneth B. Marcum. *HortScience*, 36(2): 374-376, 2001.**

## Ask Dr. Beard

**Q** Are there any specific situations where a growth inhibitor should not be used on turfgrasses?

**A** It is generally advisable to not apply a plant growth regulator (PGR) in situations where the turfgrass either has been or will be in the near term badly thinned and/or browned by the environmental, pest, or traffic stresses. Under these conditions shoot growth is needed to recover the original density, health, and appearance of the turf. A growth regulator that blocks normal tiller initiation and vertical shoot growth will create problems and its use should be avoided in these conditions. Typical examples would be the pathways or entrances and exits where the turf tends to be badly thinned by concentrated traffic in a small area. Another situation would be a turf composed of a turfgrass species/cultivar that is known to be severely thinned by a particular disease common to a specific region. Since a number of PGRs are effective for a specific period of time, this may mean that the avoidance and use of it may be specific to a certain period during the growing but not the entire growing season.

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