

Seed Lot Influences on Turf Establishment

It is common practice in cool season grass management to establish turf on athletic fields and golf courses using seed mixtures of two or more grass species. Differences in germination characteristics of grass species can have a significant impact on the successful establishment of turf.

Researchers at The Royal Veterinary and Agriculture University in Denmark used a curve-fitting procedure to investigate the variation in germination characteristics within and among cultivars of three turfgrass species: slender creeping red fescue (*Festuca rubra* L. var. *littoralis* Vasey), perennial ryegrass (*Lolium perenne* L.), and Kentucky bluegrass (*Poa pratensis* L.).

Cultivars differed in final germination percentage in all three species, with Kentucky bluegrass having the slowest and least uniform germination, as well as the lowest final percentage. Cultivars of Kentucky bluegrass and red fescue differed significantly in mean germination time and time from 25% to 75% germination.

Seed lots within cultivars also differed considerably in germination characteristics. Researchers noted that previous studies were conducted using only one seed lot per cultivar. These results suggest that cultivar differences should be tested against seed lot differences by representing each cultivar by more than one seed lot.

From: Larsen, S.U. and B.M. Bibby. 2004. Use of germination curves to describe variation in germination characteristics in three turfgrass species. Crop Sci. 44:891-899.

Landscape Water Quality Effects Still Uncertain

Lawn turf is perceived to be an intensively managed system requiring large amounts of fertilizers and pesticides, thereby posing significant risk to environmental quality, specifically water pollution.

In contrast, native plant systems that utilize plant material thought to be well-adapted to regional climatic conditions are thought to provide environmental benefits and require fewer inputs, thereby protecting water quality.

Researchers at the University of Florida (and Cornell alum Professor John Cisar) evaluated the phosphorus and potassium leaching of a turfgrass system compared to a native landscape on a sandy soil prone to leaching losses. The soil was typical of Florida situations and similar to Long Island and other sandy soils in NY.

The researchers found that leaching losses were very high during the establishment phase and during periods of high rainfall in both systems. However, after the planting phase the native system had high leaching losses even though much less fertilizer was applied compared to the lawn system. Over time as less fertilizer was applied the leaching losses declined.

At the end of the study the researchers concluded that minimizing leaching losses for residential landscapes is complex. It is not simply a matter of excluding certain types of vegetation, but rather consideration for species, diversity, fertilization, and water use that must be understood before real progress in improving environmental quality can occur.

From: Erickson, J.E., J.L. Cisar, G.H. Snyder, and J.C. Volin. 2005. Phosphorus and potassium leaching under contrasting residential landscape models established on a sandy soil. Crop Sci. 45:546-552.

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