root growth and lateral stem development of both warm- and cool-season turfgrasses.

In the case of cool-season turfgrasses, a pre-greenup application of water soluble nitrogen at a controlled rate can stimulate earlier spring greenup. A similar increase of approximately two weeks in early spring greenup can be achieved through the application of gibberellic acid. This strategy generally should not be utilized unless there is a critical need for early spring greenup, such as on baseball fields.

In terms of timing the application of preemergent herbicides, it is important that they not be applied until after root initiation and downward extension to a depth of 2 to 3 inches (50–75 mm) has been achieved. This strategy can be especially important with creeping bentgrass and the warm-season turfgrasses.

**Ask Dr. Beard**

**Q.** Concerning the USGA Method of high-sand root zone construction, is it better to include the intermediate coarse-sand layer or to eliminate it?

**A.** Research has shown that either method can be used. From a personal standpoint, I definitely prefer to include the intermediate layer. The interest in eliminating the intermediate layer is primarily a cost-driven issue. In this approach there also is a mind-set that if you can eliminate the intermediate layer one also can be more “flexible” in varying the underlying gravel layer and the above high-sand root zone. Point in fact, it is more critical to be well within the specifications for these two root zone layers if the intermediate layer is not included and that greater attention is needed in accomplishing proper construction.

Also we must remind ourselves that the USGA Method guidelines involve a set of ranges and not absolute single values. It is important that the constructions materials used and the specified depths are within this range. Otherwise it is not a USGA Method construction. Frequently I encounter the term “modified USGA construction,” wherein the materials or depths used are outside the guideline ranges. In many cases these fail to perform adequately. The point is that there is no such thing as a valid “modified USGA construction” in terms of successful long-term performance. Construction utilizing materials and techniques outside these guidelines greatly increase the probability of failure. One of the problems in this regard, is that the failure may not appear until four to six years later. The original decision maker with minimal technical knowledge cannot relate the subsequent failure to the original decision to not follow the USGA Method guidelines.