MAINTAINING NEW USGA GREENS AFTER ESTABLISHMENT

Robert Vavrek
USGA Green Section, Mequon, WI

Properly managed soil-based greens can provide excellent playing conditions under low to moderate amounts of traffic. Soil, however, is much more susceptible to compaction than sand and soil-based greens tend to drain slowly. The increased amount of play at most courses is the primary reason why sand-based greens were developed - they resist compaction and drain quickly. High sand content greens built to USGA specifications have withstood the test of time. They provide a consistent, high-quality putting surface under heavy traffic and are playable almost immediately after a heavy rainfall.

Sand/peat mixtures have a limited capacity to retain nutrients, consequently, the most common mistake made during and after establishment of turf is inadequate inputs of fertilizer. Try incorporating an organic nitrogen source, such as Milorganite, Sustaine, Ringer's, etc. at a rate of about 2 lb N per 1000 sq ft of putting surface during the off-site mixing operations. Organic sources of nitrogen are less likely to leach through the profile and most sources supply a variety of minor elements.

Incorporate a high-phosphorus starter fertilizer into the upper 1/2 to 1 inch of root-zone, just prior to seeding, at a rate of about 1 lb of N per 1000 sq ft. Once the seedlings become established the turf must be monitored closely for signs of nutrient deficiencies. As much as 1/2 lb of N per 1000 sq ft may be needed every 7 to 10 days to maintain vigorous growth of a new seeding. Nitrogen rates as high as 12 to 14 pounds are not uncommon during the initial year of establishment. The appropriate inputs of other major and minor elements, especially phosphorus, are equally important. The rates described above should be considered general guidelines, not hard and fast rules. Lower rates can be used at the superintendents discretion as turfgrass density develops adequate growth is observed.

The turf on new greens must be "pushed" to develop a thin layer of surface organic matter. The organic matter provides a cushion that protects crowns and imparts resiliency to the putting surface. Consider leaving the clippings on the putting surface until the greens are opened for play. Clippings decompose rapidly and do not contribute to thatch accumulation. In fact, clipping decomposition will help recycle nutrients back into the root zone and provide an additional source of organic matter.

Nutrient levels in the root-zone will eventually stabilize and buffer the rapid onset of nutrient deficiency symptoms that are commonly observed on high-sand content greens. Once this occurs, applications of a balanced fertilizer at rates that provide 4 to 6 lb of nitrogen per 1000 sq ft will need to maintain adequate growth and quality. Annual soil test results are a useful tool to monitor nutrient levels as the greens mature.

Light, frequent applications of topdressing are needed to prevent the thin cushion of organic matter from developing into an undesirable thatch layer. Topdressing the greens also smooths the putting surface. Initiate the topdressing program as soon as strong stolon growth occurs. A good rule of thumb is to apply about 3 cu. ft of topdressing per 1000 sq ft every three weeks during periods of active turf growth. Ideally, the rate and frequency of topdressing should match the growth of the turf. The choice of topdressing materials is a personal decision. A topdressing similar to the original construction mix is usually acceptable as long as the sand used in construction is not too coarse. Sand particles larger than 1 mm remain on the putting surface to dull mowers and deflect putts. Straight sand has been used successfully by a number of superintendents. Sand is less expensive than a sand/peat mixture and is easier to apply.

USGA greens are easy to over-water because they accept irrigation readily. Performing a physical soil test before a particular sand/peat mix is accepted ensures a proper balance between drainage and moisture holding capacity. The result is a green that drains well, yet does not require excessive supplemental irrigation.

Monitor the root-zone before scheduling irrigation. Many superintendents are surprised to find how little irrigation is needed. Schedule a deep irrigation cycle every seven to ten days during prolonged periods of drought to flush salt accumulation from the root-zone. This practice also firms the putting surface and "pulls" air into the soil as the green drains.

Try to avoid the three most common mistakes regarding the management of USGA greens: 1) inadequate nutrition, especially during establishment, 2) waiting too long to initiate a light, frequent topdressing program, and 3) over-watering.