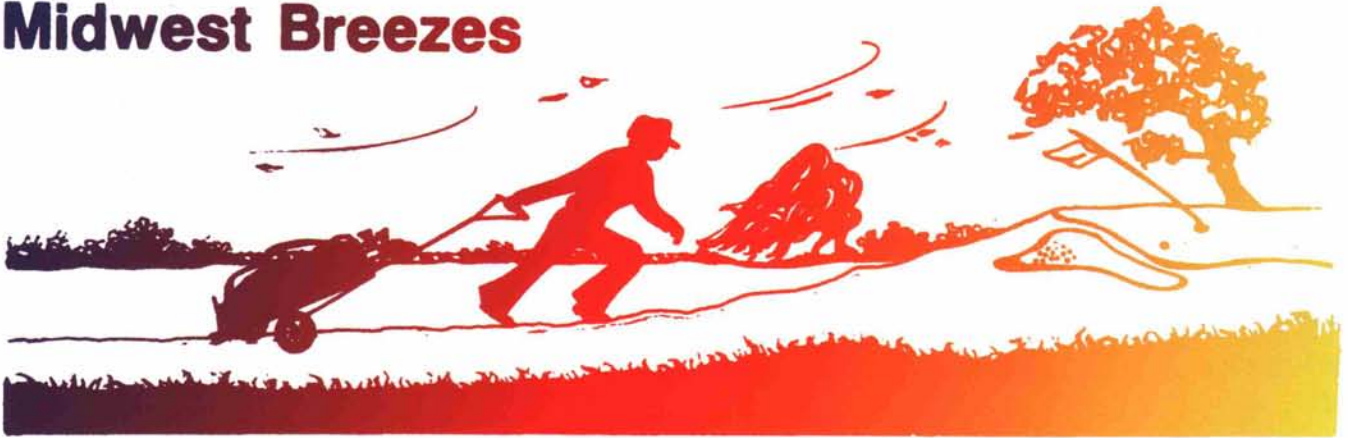


Midwest Breezes



Bunker Renovation Gives Barrington Hills Country Club a New Look

This past fall, Barrington Hills Country Club (BHCC) renovated the bunkers on all 18 holes and the chipping green. The course was built in 1921, thus some of the original bunkers were out of play due to tree growth over the years. The original bunkers also had poor sand quality and no drainage.

The renovated bunkers, designed by Don Placek of Renaissance Golf Design and constructed by MacCurrach Golf Construction, feature new design, new sand and new drainage. Liners were also installed in cases where erosion would be a prevailing concern.

The new design of the bunkers features both grass-facing and sand-flashing slopes. Construction utilized the pre-existing native soil. Surprisingly, the newly renovated bunkers contain approximately one acre less of surface area. The old bunkers, on average, were 2,200 square feet, and the new bunkers average 1,000 square feet. Also, in instances where existing bunkers were eliminated, extensive bentgrass sod work tied into existing fairway lines, giving the fairways a different shape. Removal of greenside bunkers saw these areas graded and sodded with bluegrass.

Before the project, BHCC contained 61 bunkers. After the renovation, the course tallies 66 bunkers, and four bunkers around the chipping green instead of three. Although these numbers are very close, the project entailed elimination of numerous bunkers and new construction of others in places where there were previously no bunkers, giving the course a new look.

The new design has also created new maintenance procedures for the BHCC staff. Before the renovation, bunker maintenance included daily raking with a Toro Sand Pro, and perimeter mowing with a Toro Sidewinder. Post-renovation, all bunkers are going to be hand-raked and mowed around with fly-mows.

Before construction began, superintendent Mark Bobb decided to test three different types of sand. The types of sand that he considered were Meyer FA-9, North-face and Antioch Root Zone. To get member feedback, we excavated the sand in the bunkers around the chipping green and set up four different plots: one for each type of sand, and one with the original sand. After months of testing and feedback from the members, we decided to go



Sandtrapper II liners were used in cases where sand-flashing slopes presented erosion potential; liners were tucked into the drainage mechanism.

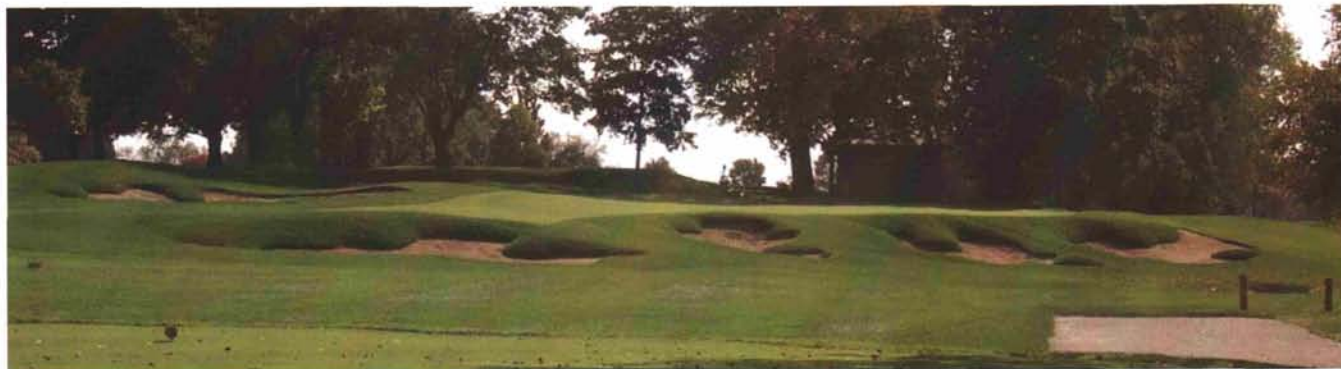
with the Antioch Root Zone because of its consistency and smoothness. It was placed at a six-inch depth throughout the new bunkers.

All the newly constructed bunkers underwent drainage installation. Four-inch perforated corrugated pipe was used in all cases. Due to the fact that the old bunkers contained no drainage, we had to connect new drainage to the pre-existing clay tile throughout the golf course when possible. In all other cases, a 3' x 3' x 3' sump was dug and filled in with pea gravel. Also, all drain tile underwent grading with a laser transit to ensure proper drainage. In cases when the slope presented possible erosion problems, Sandtrapper II liners were put in place. Liner installation occurred only on the sand-flashing

slopes and tucked into the drainage to channel the water into the new drainage system. Six-inch sod staples were installed one inch apart along the seams and edges, and six inches apart throughout the rest of the liner.

Next on the list for the new year is the reconstruction of the 17th green along with the greenside bunkers that were not included in the overhaul project, and new bunker irrigation. We'll also be revisiting green expansions resulting from new bunker placement, and the leveling and repositioning of tee complexes. So look forward to updates on these projects.

—Rob Nixon
Barrington Hills Country Club



After bunker renovation.



Before bunker renovation.

Turnberry's Jim Evans Brings Chemistry Down to Earth

Contrary to Midwest legend, Jim Evans is not a mad scientist. Jim's unique approach to greenkeeping chemistry is actually very sensible and down-to-earth. He may be mad, but he is not a scientist.

For more than 25 years, Jim Evans has been fertilizing his greens, tees and fairways entirely through his sprayers, which are calibrated to apply three gallons of water per thousand square feet solution. To illustrate the creativity of some of Jim's fertilizer mixes, I have outlined one of his fairway applications from May 4, 2005:

ELEMENTS	PER 210 GALLONS	PER THOUSAND SQUARE FEET
Urea 46-0-0	14 lb.	0.10 lb. Nitrogen
Urea Formaldehyde 38-0-0	17 lb.	0.10 lb. Nitrogen
Ammonium Sulphate 21-0-0	20 lb.	0.06 lb. Nitrogen
Sulphate of Potash 0-0-53	83 lb.	0.67 lb. Potassium
90% Elemental Sulphur	15 lb.	0.21 lb. Sulphur
Sprint Iron	7.5 lb.	2.00 oz. Chelated Iron
Mangenes Sulphate	1.5 lb.	0.12 oz. MnSO4
Zinc Sulphate	1.0 lb.	0.10 oz ZnSO4

(continued on page 8)

Note that this mixture contained eight different elements and compounds, and a total of 159 pounds of material, in a 210-gallon spray tank!

Jim has discovered that he can add as much as one pound of material per gallon of water in a spray tank, but he emphasizes the necessity of syringing these applications off the leaf canopy before they dry. With any application of this concentration, particularly on fairways, it is important to finish the work before the morning dew evaporates. The dew helps to hold the material in suspension while the sprinklers run through their sequence.

What are the merits of this type of nutritional program and application method?

1) The elements and compounds are being purchased in their cheapest formulations. This is the most cost-effective way to feed greens, tees and fairways.

2) The overall nutrient package may be custom-blended to whatever the soil analysis recommends. When this method is dialed in, it can provide some of the healthiest turfgrass possible.

3) The nutrients are readily available for the plants' use. This gives optimum control of the timing and rate of nutrient release.

4) Because so little of the application is lost to leaching or volatilization, the amount of annual nutrient load (to the soils) can be greatly reduced.

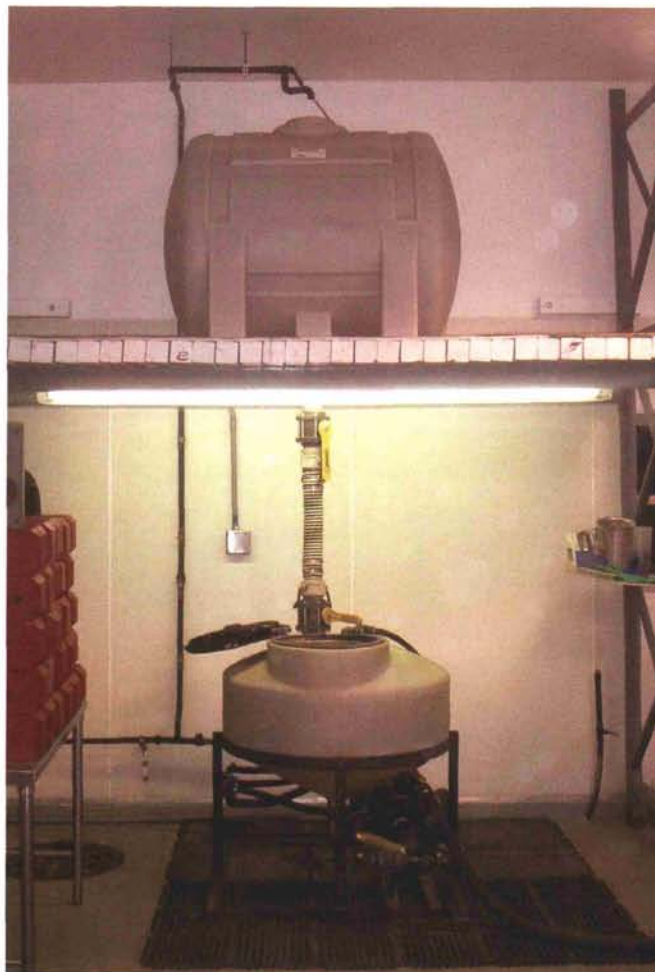
5) These applications do not necessarily require making extra trips out on the course with the sprayer. They can be scheduled along with any other products that may benefit from being watered in, such as wetting agents, growth regulators or DMI fungicides.

The only downside of the program is the amount of time and energy required to load and blend all the products to solution. However, Jim and his son, Jim Junior, have designed a mixing system to simplify and hasten the process.

The system is built with a self-replenishing 200-gallon storage tank and a 75-gallon mixing tank. The mixing tank is instantly filled with water from the storage tank by manually opening a three-inch line connecting the two tanks. A switch is thrown to activate circulation and agitation of water in the mixing tank. Products are dumped into a stainless steel basket inside the mixing tank, which filters out any solids or contaminants that would clog the sprayer nozzles. A gentle agitation bubbler inside of the basket melts down the products as they are added to the basket. An entire 50-pound bag of soluble fertilizer may be dropped in the basket and dissolved into solution in less than two minutes.

After all the materials are dissolved in the mixing tank, a lift-pump and hose connection transfers the solution to the sprayer. The balance of the 210-gallon spray tank is now filled by draining the storage tank through the mixing tank transfer pump. This process effectively rinses any residue that may remain in the mixing and transfer system. With the sprayer full, the operator takes the application to the field while the next load is undergoing preparation in the mixing tank.

—Brad Anderson, CGCS
Midlane Country Club



200-gallon storage tank and 75-gallon mixing tank



Circulation and agitation of water and product occurs in the 75-gallon mixing tank.



Catch-basin in floor with filter screen. The whole floor drains to a 20-foot trough that runs to the catch-basin.