

GROWING IN A NEW LATE SPRING SEASON

BY JEFF SALMOND, CSFM

A late spring through summer grow-in on a football field can be difficult and hectic. At Northwestern University, we tackled the task in 2003. The major obstacle turf managers in the north face is the short amount of time to get good root development before the onset of a hot, humid summer. With careful planning, execution, and some help from Mother Nature with mild weather, Ryan Field responded quickly and established itself for a productive fall football season.

A MODIFIED HARLEY RAKE ESTABLISHED THE FINAL GRADE BECAUSE IT COULD GRADE SAND WITH TURFGRID FIBERS LEFTOVER FROM PREVIOUS INSTALLATION.



The Koro Topmaker and 1-ton dumps were used to strip out Ryan Field.

Removal, installation and grow-in

In very early spring we determined Ryan Field was not recovering from winter desiccation damage from the cold, dry '02-'03 winter. Insufficient rooting in the center of the field would have made it unsafe and unplayable for the spring football game in late April. The decision was made on April 1 to re-sod the field. Van's Enterprise, Ltd. of Mundelein, IL, was contacted to oversee the removal and reestablishment of grade for the field. They had been instrumental in re-sodding the field in 1999. We began stripping the field at a 2-inch depth with a Koro Topmaker supplied by RMT of Colorado on April 24. It took two full days to strip out the field. The field grinds were loaded out with 1-ton dump trucks supplied by NU Facilities Management.

The Topmaker was ideal for stripping out the field for four reasons: 1) We wanted to use the pulverized material coming off the field as a compost topdressing for the rest of our athletic fields; 2) We were able to remove the material from the field with minimal disruption to the grade; 3) We didn't have to pay for additional trucking and dumping costs from stripping and disposing of rolled sod; and 4) All amendments put into Ryan Field from the past 5 years were able to be re-used by topdressing or composting them for use in other areas.

On April 26, the field was inspected to insure all organic material had been removed from the sand-based field and the rough grade was established. Two lbs. P/1000 sq. ft. of 0-44-0 and 10 lbs./1000 sq. ft. of DryRoots were spread and the field was tilled. Van's Enterprise then established the finished grade with a modified Harley rake.

This piece of equipment, one of the only known pieces of equipment to grade sand with fibers, was used because Turfgrid fibers still remain in the rootzone from the initial field installation in 1996. Throughout the course of trying to establish the finish grade, we received more than 3 1/2 inches of rain. This was a benefit because it helped keep the sand compacted during the grading process. Before laying the sod, we spread another 5 lbs./1000 sq. ft. DryRoots to the top of the finish-graded sand. On May 2 we began laying sod. Sod was delivered by Evergreen Sod and supplied by Schaafsma Sod, all from Peotone, IL. The sod most closely matched the composition of the rootzone. Countryside Industries of Wauconda, IL, was responsible for laying the 300-plus rolls of 3/4-inch thick Kentucky bluegrass sod. Varieties consisted of P105, Midnight, and Unique. The field was laid east to west to conform to field irrigation and to easily access the main point of entry into the field. The whole removal and installation process took 10 days. The rain we received during this time extended the process about 2 more days than we had planned. Sodding was completed May 3, the field was rolled with a 2.5-ton smooth, double drum roller, fertilized with 1/4 lb. N/1000 sq. ft. of 19-25-5 and the grow-in began.

Again, timing was of the essence and we knew we had to grow roots fast. A short 5 1/2 weeks after laying sod, mid-June,

FIELD

the university's annual graduation commencement ceremonies were scheduled for the field. Three days after laying sod, emergent root hairs were prominent and showing through the bottom of the sod layer. Two days later, the roots began to multiply and branch.

We were able to mow at 1 3/4 inches on the new surface a week after laying sod. Twelve days after installation, the sod was firmly in place and we aerified with a John Deere 1500 Aercore with 5/8-inch hollow tines to a 1-1.5-inch depth in a 4 x 4-inch pattern. We dragged the cores to begin the mixing process of the rootzone and sod layer. The tufts of grass were then swept up with a Goossen Versa-Vac.

Dr. David Minner, Iowa State University, and I have considered taking this initial aerification out of the grow-in process by taking delivery of the sod already aerified. In that way, field managers wouldn't have to worry about proper timing before aerifying new sod.

In addition, twice as much potential rooting activity will occur with the addition of aerification holes along the sod layer interface. (I would be interested to



Roots off sod 5-6 inches long 5 1/2 weeks after installation

know if anyone has ever used pre-aerified sod.) At the end of May, we topdressed the field with a 1/4-inch layer of rootzone mix. We made our first preventative fungicide application at the same time and began a bi-weekly preventative fungicide maintenance program. The keys to the first month of the grow-in were to, 1) not push the turf with too much fertility, and 2) good water management.

Fertility took place in and on the open rootzone and on top of the sod after it was laid. After the sod was down, the goal was to initially wet the entire rootzone,

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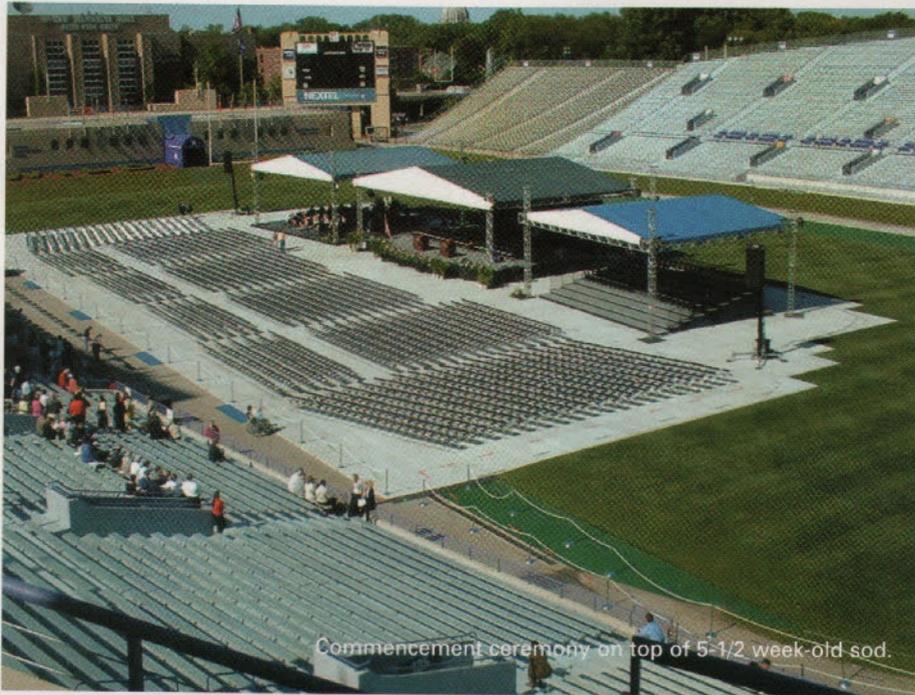
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and then apply supplemental watering after signs of wilt. These two practices helped force the roots into the sand-base rootzone. The Chicago area was also blessed with an average high temperature for the month of May of 63 degrees, with beneficial rains.

Graduation ceremony

At the beginning of June, we lowered the mowing height to a game-height cut of 1 1/2-inch and applied 1/4 lb. N/1000 of 14-0-24 with micronutrients to feed the turf in preparation for graduation. We felt that keeping the field at game length for the summer months ahead would pay off in the fall. Keeping the turf at this height helped increase rhizomatous activity producing a denser mat. The week-end before graduation we determined the field was a little soft to support the incoming Terraplas flooring system and staging. In response we again rolled the field with a 2.5-ton roller to help firm it up. We then aerified the field with 5/8-inch solid tines to begin drying the field down and slowing growth. This in turn also solidified the sand-based field. By mid-June, the roots were growing about an inch a week and we had 5-6 inch roots.

We mowed the field every day until the Terraplas was put down. We also applied a preventative fungicide to support the turf during its time under cover.



Commencement ceremony on top of 5-1/2 week-old sod.

Graduation was a 3-day process: Wednesday Terraplas and staging was set up on the field; Thursday we placed the rest of the staging, equipment and had a sound-check; then Friday was reserved for chair set-up and last-minute details, with graduation at 6 PM. The nightmare never fails to appear though, and on Wednesday we had the hottest day of our year coupled with rain. On graduation day, the temperature under the Terraplas got up to 100 degrees. Although this may seem extreme, in hindsight we felt that the 3-day covering with Terraplas actually enhanced rooting and helped toughen the turfgrass plant in this particular situation.

After graduation the field was vacuumed with the Goossen to help stand-up the grass, then we let the

field sit for a week. At the end of June, we fertilized the field with 1/2 lb. N/1000 14-0-24, 3/4 lb. K/1000 0-0-45, DryRoots, gypsum, and micronutrients. We also made our first application of Merit insecticide. Our main goal at that point was to start making the plant more rigid and durable for football season. Again we were blessed with good weather, as June's average high temperature was 75 degrees. At the beginning of June, we also began to take monthly tissue samples to see if we were lacking in essential nutrients.

July and August

July started out with much warmer temperatures and increased humidity. We applied another topdressing layer of 1/4-inch of rootzone sand and brushed it in. These light application layers, coupled with the fast root development, were significant in providing ballast over the entire field. At a month and a half before the season, we felt that core aerification would be damaging to the overall stability of the field. We instead opted to use slicing tines on the field. This would be less aggressive and potentially create more vigor in the plant. After slicing, we fertilized the field with 1/2 lb. P/1000 19-25-5 to revive the sliced rhizomes of the Kentucky bluegrass. We also applied DryRoots.

In July, the grass began to lay over more than usual. We had been mowing the field every other day so we decided to start mowing every day to help it stand up better. This began to visibly stress the plant. After monitoring, through tissue analysis, we observed that the turfgrass was slightly low in iron. Other environmental factors may have been the cause in the laziness of the grass, such as increased humidity and the way the grass may have been trained in the sod field.

Many field managers experience "lazy grass syndrome" during this time of year and most opinions point to changing environmental conditions as the foe. As soon as the heat and humidity of summer left, the laziness went away. We could also visibly pick out individual rolls of sod throughout the field. This could be explained as varietal differences in each of the rolls, one variety showing different characteristics over the others. This difference in "shading" also went away when humidity and heat decreased.

At this point, we decided to introduce other varieties of Kentucky bluegrass into the field. We overseeded the field with 1.5 lbs./1000 Kentucky bluegrass consisting of Blacksburg, Blackstone, Midnight, and Apollo. July temperatures were mild for Chicagoland, 81 degree average.

August was the month we started putting the field in game mode. Head coach Randy Walker said he wanted to have a mock game on the field when they returned from summer camp in mid-August. The field received another application of gypsum, DryRoots, and micronutrients in early August. We were concentrating on getting more Ca, Mg and K into the plant, giving it more heartiness with these applications. We also topdressed with another 1/4-inch layer of rootzone sand. The mock game was August 20, and would be the first time players had been allowed on the field. After the mock game, we made another application of DryRoots, Roots 1-2-3, Roots Stand-up, and 1 lb. K/1000 of 0-0-45 in preparation for the first home game September 6. At the end of August, the field was consistently averaging 7 to 10-inch roots.

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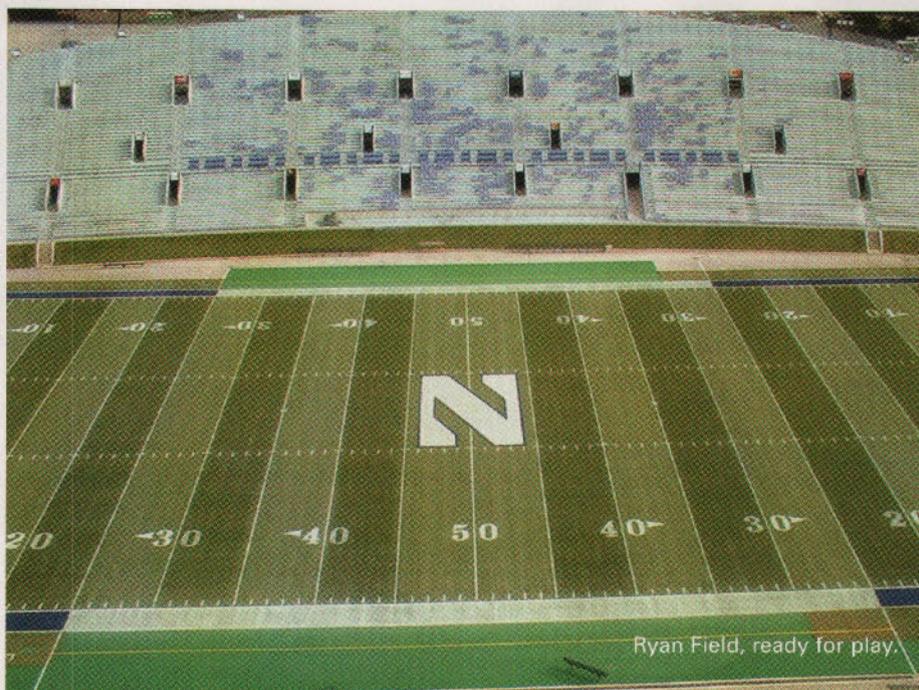
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The football season

Ryan Field performed well throughout the season. We started the season with back-to-back games and ended the season with back-to-back snow/rain games. One practice we implemented during the season was using pre-germinated Kentucky bluegrass/sand divot mix after games. This is a post-game field management routine Mike Andresen, CSFM, Iowa State, has stated is an important aspect for maintaining quality turfgrass cover for the season and seasons to come. We worked to get a mass of grass growing back into every divot. With this practice we were not necessarily looking to get mature grass back in the divots for this season, but more importantly we were working to get grass for next season. We thought we were that much further ahead of the game, even if 10-15 percent of the divot got kicked back out again. Throughout the season, we attempted to stay on the higher side of the potassium range of N-P-K. The field was maintained with 14-0-24, 0-0-45, and Roots products. We overseeded the field with 100 lbs. of pre-germinated Kentucky bluegrass after each game. We topdressed the field twice during the season, once in September after back-to-back games and again in October. The latter procedure



was a very light application. We didn't aerify the entire football season, as we were not willing to sacrifice stability for any additional drainage or rooting. On November 8 we experienced a lake-effect snow game, then a wet-rainy game November 15 to close out the season. Immediately after this game, our crew went into our post-season repair program.

The 2003 NU football team and field were a success. The team was invited to play in the Motor City Bowl and Ryan Field's grow-in and daily maintenance programs withstood the rigors of a punishing season.

The success was due to the successful execution by the people that installed and maintained it. NU Athletic Grounds Foreman Randy Stoneberg and Groundskeepers Rich Thorn and Joe Berube were instrumental

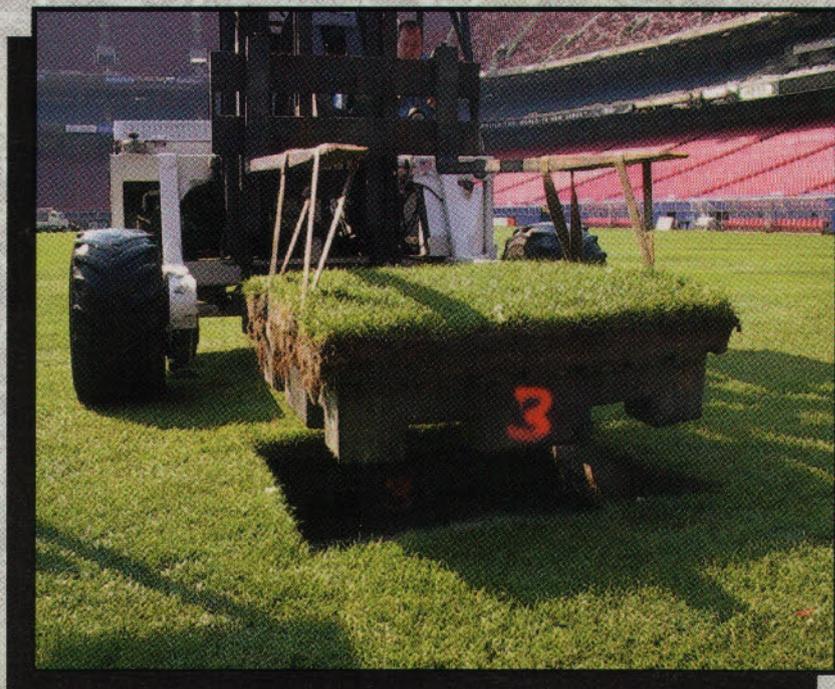
in bringing Ryan Field to fruition in a short amount of time. Their dedication and attention to detail resulted in a safe, playable, and aesthetically pleasing field. Now we all wait for the snow to come off the field so we can duplicate the performance next season! **ST**

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