

TURFGRASS MANAGEMENT 101

By David Hackleman

Herman-Norcross Community School

Herman-Norcross Community School is located in West Central Minnesota and is a small rural school. It has a varied agricultural based economy with a population of 450. The community school houses K-12 and approximately 160 students attend the school. Over the past two years, a new course has been offered to broaden the interests and career opportunities for these students.

In September 2001, a Turfgrass Management class was offered with nine students participating the first semester. Since then, twenty students have taken the course. The objectives are to 1) teach young adults about the turfgrass industry, 2) to form a working relationship between the school, colleges, and turfgrass businesses, 3) To provide students with enough knowledge and training to seek entry-level jobs, 4) To promote the turf and lawn care industry, and 5) To encourage and assist students interested in pursuing this career.

Within the class, topics include: career exploration, turfgrass growth and development, turfgrass management and operations, turfgrass pests and control, turfgrass equipment and maintenance, and human resources.

Along with a lecture style format, students have numerous laboratory experiences. With almost every topic, there is a lab assignment to enhance understanding and knowledge of classroom materials. Students do seed identification, germinate and grow various turfgrass species in 4" pots, graph their growth, record when they mow and fertilize the pots, and monitor on a daily basis recording data 2-3 times/week. The students have also set up five 20' x 20' plots outside the school facing south. The plots have been established to do fertility studies, study the effects of mowing heights and growth, and to do soil samples, which are done in the fall. Results are then compared with past samples to see how fertilizer has changed the soil pH, and how macro and micronutrient levels in the soil have changed. Depending on class size, a group of 2-3 students will have a plot to care for in the fall and spring of the year. One plot has been determined as a control with no treatments done other than mowing at 2". As a final project in this class, each student is asked to design and draw to scale a turf facility. It could be a golf course, football, baseball, or soccer field, park, tennis court, or perhaps a large commercial property. They must also draw an irrigation system to scale. Afterwards, they must write a management plan including:

- + An introduction
- + Size and scope of project
- + Soil type, soil pH, and any amendments if needed to change the pH
- + Turfgrass species used and why
- + Mowing schedule
- + Fertilizer types, how often it is applied, how much nitrogen added per application
- + Irrigation schedule, head spacing, number of zones, and how much water is applied per watering
- + Equipment needed to maintain their project

- + Personnel needed
- + Salaries for employees
- + Total budget for their project

The University of Minnesota at Crookston was contacted in September 2002 about the possibility of articulating this course with their 4-year degree program. After all the paperwork and committee meetings were completed, they approved college credits for the students enrolled in this new and exciting high school class.

As a class project, we took one of the designs and built it to scale. The project called Whispering Pines Golf Course was chosen. It is a nine hole golf course, par 36, playing to 3400 yards with each hole having three tee boxes. It also includes undulating fairways and greens, a few sand traps, a lake for irrigation, a clubhouse, and putting green.

We used a 4' x 8' x 1/2" sheet of plywood, put a 2" border all the way around, lined it with plastic and filled it with a soil mix. Then we laid out the course to scale (1" = 40'). The greens are sand based and the fairways, tees and rough areas are a mix of potting soil, peat, and sand. After the course was laid out, we seeded the green with Pencross Creeping Bentgrass, and the fairways, tees, and rough were seeded with a blend of Kentucky Bluegrass and Perennial Ryegrass. Once seeded, the soil surface was kept moist and after 4 days seedling germination and growth was noticed. After 10 days, a very visible stand of grass was noticed throughout the site. After 21 days, most areas were covered with a good stand of grass. On day 30, the first mowing took place. We mowed the greens at 1/8", and the other areas at 1/2" using scissors. On day 35, we applied a liquid fertilizer to all areas and the course was fertilized every two weeks afterwards. Mowing heights were gradually lowered to 1/8" on greens and fairways and tees at 1". Rough areas were mowed at 2". The course is still alive and well and we plan to do another project next fall when school starts.

In November 2002, a grant was written and submitted for \$2,058.00, and in January 2003, the grant was awarded to the Herman-Norcross School. With this money, we bought textbooks, lab manuals, a soil testing kit, an aerator, a fertilizer spreader, soil probes, magnifying lenses, and a soil thermometer. We plan to utilize this equipment on the turfgrass plots to further our experiments. We plan to oversee the plots this spring with a blend of KBG and Perennial Ryegrass.

Area golf course superintendents have graciously allowed the students to come and visit. They give us tours of the course, shop, and explain their management strategies for maintaining their course. The students ask numerous questions and leave having a better understanding of how a golf course is managed and the amount of work required each day to prepare the course for the best possible playing conditions.

This class has been fun to teach and rewarding to see the kids take such an active role in learning about this exciting career in Turfgrass Management.