

Packers, Red Bull use grow lighting system

A LLEN JOHNSON, CSFM, FIELD MANAGER FOR THE GREEN BAY PACKERS AND STMA BOARD MEMBER, reports he has been testing and using the SGL Concept lighting system to help grow grass this fall.

SportsTurf: What prompted you to investigate using the SGL system?

Johnson: Nico [the system's inventor, Nico van Vuuren] and a representative from his company were doing a tour of the states to find suitable places to introduce their technology. I was aware that this technology was being used elsewhere but hadn't really been investigating it. I got a call from Henry Wilkinson from the University of Illinois one day asking if I would be interested in letting the group visit and talk about their technology. It went from there.

ST: How did your testing process work and what were the results?

Johnson: We were given three of the large MU360 units which allowed us to test approximately 40% of our field. We treated the southern end with the lighting units and complemented it with our underground heat system set at 50 degrees. The northern half of the field was treated traditionally by me without any supplemental lighting and the heat system set low at 38 degrees. We started October 7 and ran the trial through the first week of December. We had to stop when the ambient air temperature consistently started to drop below freezing.

"By the end of October we were collecting three times the amount of clippings than the 'control' end of the field. By late November the clipping yield on the treated half doubled from the late October amounts and the 'control' half of the field had started to go dormant and did not

yield any clippings. It was interesting, because of the layout utilized we actually had four different plots so to observe A) turf with no supplemental light and minimal heating B) turf with supplemental light and minimal heating C) turf with enhanced heat set at 50 degrees but no supplemental lighting and D) turf with both supplemental lighting and enhanced heat set at 50 degrees. The areas of the field that had both the enhanced heat and supplemental lighting produced the greatest growth and density easily."

ST: How do you plan on implementing the system [as of Sept 27]?

Johnson: Based on our observations from the trial and discussions amongst the front-office executives the organization decided to purchase 9 MU360 units, which is enough to treat our entire playing surface consistently. Those units have been delivered this past month and will be put into use following our game on October 2.

ST: How much work has been involved in setting up and using the system?

Johnson: The units came pretty much assembled. We had to update our infrastructure in regards to getting the proper electricity down to the field's edge to power the units.

Johnson also replied: "Our organization has also decided to add on to Lambeau Field. We will be filling in the south end zone with stadium seats, adding approximately 6,600. The new wall of bleachers and updated scoreboard will create significant areas of shade that we had not previously had before. The south end was fairly open and allowed a lot of natural sunlight into the bowl and down on the field. Our purpose in purchasing the lights was to assist the growing season a bit in October and November, but also to replace any sunlight lost to the new expansion of the stadium. That expansion is set to be completed in 2 years.

Dan Shemesh, director of grounds, New York Red Bulls, also has used the SGL system. "I started looking into grow lights my first day on the job back in November of 2009. Red Bull Arena has a similar design to many European soccer stadiums that have partial roofs and covered seats. When I took a look at the shade study I thought it might not be that bad since part of the roof is a certain percentage "translucent." I found out very quickly that the roof was not translucent at all and the days and sun hours were much worse when you experience them in person as opposed to a shade analysis on paper."



January 3, 2011 with no lighting treatment.



January 3, 2011 with lighting treatment.



ST: What were your growing issues before using the system?

Shemesh: Before we started using the system we had multiple shade related problems, we still do now but they have decreased significantly. On the first day of spring and fall the best part of our field sees between 3.5 and 4 hours of natural light on a sunny day. The entire south end 18 yd box including the top arc is in complete shadow all day. On the first day of summer the best part of the field receives about 5.5 to 6 hours of natural light. There is still an area in the south 6 yd goalie box in complete shadow.

On the first day of winter more than half of the field is in complete darkness. So as you can imagine we experience limited rooting, slow growth, cooler soil temperatures, excessive wetness and increased disease potential. In 2009 we did a full midseason resod at the end of July and another resod of the south 18 yard box before playoffs because of the poor turf quality.

ST: How much work is involved in

setting up and using the system?

Shemesh: There is some work involved with setting up the grow light system. We own 3 large rigs which takes two people about one hour to get in place and turn on. The greater the distance becomes between the lights and power source means more cabling and setup time. The lights require close monitoring along with the area of treatment. The lights generate some heat which can cause ET rates to go up. We also keep track of the amount of natural PAR light our field gets and turn off the lights during the day if the treatment area receives adequate sunlight.

ST: How has system performed?

Shemesh: The system had performed very well and we are still learning how to utilize the lights for the maximum benefit of the field. We have not exchanged any sod so far this year and do not plan on doing so. The south end of our field which has received the most hours of artificial lighting has the highest turf density compared to other parts. ■

About the manufacturer of SGL

THE SGL CONCEPT is for growing grass under any condition in any stadium, even during winter, by controlling all growth factors such as light, temperature, CO2, water, air and nourishment. The use of assimilation lighting is an important factor in SGL Concept.

The idea for the SGL Concept came from Nico van Vuuren. As a successful grower of roses van Vuuren has lots of experience with growing plants. Following a theoretical investigation to see what were the possibilities to optimize grass growth van Vuuren wondered why companies didn't put time into assimilation lighting tests. During the months with lower natural light intensities turf will even show negative growth. On the one hand this is caused by the fading light intensity and on the other caused by the partly or fully closed construction of today's stadium, which results in a very large temperature difference between inner and outer temperature.

At first it was thought that the problem with natural grass could be solved by just applying assimilation lighting. But it soon appeared that for a real success, a combination of all the growth factors is needed. It's the goal of SGL to provide a high quality pitch throughout the whole year. Achieving this goal needs more than just turning on the lamps. You have to combine a lot of different expertise such as knowledge about the soil, grass seeds, grass growth, growth techniques, lighting and stadium construction, the company says.

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