

**Patience and Optimum Temperatures: Requirements for Recovery**

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The cool spring of El Niño transformed into a scorching hot summer with record heat and humidity throughout much of the Southwest. According to the weather predictions at this time (September 1, 1998), we are in for at least another seven to ten days of record temperatures. The cumulative effects of the extreme weather, traffic, salts, and other related stresses have devastated many cool-season grasses and, in particular, *Poa annua* / creeping bentgrass greens. Direct heat stress (primarily on *Poa annua*) has been noted at various locations where the only surviving *Poa Annua* was located in shaded areas during mid-afternoon. In these cases, fans and syringing could not offer enough cooling. There are also reports of anthracnose attacking greens treated on preventive fungicide programs. This may indicate that even chemical therapy has its limits under the most extreme of conditions where the turf is declining due to the primary cause of heat stress rather than disease.

If you have an unfortunate site that suffered turf loss, it is important to remain calm, think out your recovery strategy, and by all means wait for Mother Nature to cooperate! If you don't wait until the nights cool to attempt recovery, you are doing nothing but wasting time, effort and money. One can only help grass grow - it's impossible to force it to grow.

As a reminder, the temperature ranges needed for optimum germination and growth the are as follows

<b>Optimum Temperatures/Range</b>	<b>Degrees in Fahrenheit</b>
Germination - Creeping Bentgrass	60 - 85
Germination - <i>Poa annua</i>	40 - 70
Maximum Photosynthesis	70 - 85
Root Production*	60 (soil)
Root Elongation *	50 - 80 (soil)
Leaf Growth Optimum Range	60 - 80
Leaf Growth Peak	75

\*(Temperatures above 90 degrees in the first inch of soil slow root growth dramatically)

**Sources:**

Beard, J.B. 1973 - *Turfgrass: Science and Culture*, Prentice Hall, Englewood Cliffs, NJ.  
 Beard, J.B., Rieke, P.E. Turgeon, A.J. Vargas, J.M., 1978, *Research Report #352, MSU*

If you have a few hurting greens that need to be nursed back to health, some strategies that may help are:

- Raise mowing heights (even 1/64" to 1/32" will help!)
- Substitute walking greens mowers in place of triplex mowers.
- Skip mowing injured and/or weak greens a few days a week.
- Replace *Whiele* (grooved) rollers with solid rollers.
- Defer normal maintenance (rolling, topdressing and vertical mowing) until active growth resumes.
- Avoid excessive fertilizer applications or any pesticide products that have a burn potential.

Beyond this, all that can help is the patience of your golfers especially since they have witnessed first hand this season that: "Nothing happens fast in agriculture with the exception of a crop failure." Turf that has been lost in August of September will require many weeks to recover, even under conditions of optimum temperatures, to return putting surfaces back to tournament quality.

As the title suggests, patience and optimum temperatures are required for recovery. /

**Mark These Dates For Education**

Continuing the tradition of quality continuing education, the GCSANC will play host to two GCSAA regional seminars in 1999. On January 6th and 7th look for the popular "Golf Greens: History, Theory, Construction and Maintenance." The two day advanced level seminar moves from the history of golf greens, into design theories, methods of construction and management techniques used to solve specific problems. Also the reading of physical soil test results, and the establishment and maturation of putting greens are discussed.

On May 19th, Gerry Sweda will present, "Maximizing Job Satisfaction." This one day seminar will help you evaluate your level of job satisfaction. Learn to recognize your needs for job satisfaction, identify job characteristics that provide you with the greatest degree of satisfaction, determine the traits that cause you the most dissatisfaction, and work through gaps in your satisfaction level. Both seminars will be held at the Pleasanton Hilton.