



Fans improve creeping bentgrass greens in the Southeast

Bert McCarty, Ph.D., is a professor of turfgrass science at Clemson University and has conducted research on the impact of fans on creeping bentgrass greens. Bert can be reached at bmccrty@clemson.edu.

Q What are the benefits of fans on creeping bentgrass greens in the southeast U.S.?

In my opinion, fans have been the biggest development in helping to grow high quality creeping bentgrass greens in the summer in the Southeast. Fans cool the turf plants, which lowers heat stress, resulting in healthier plants. In addition, fans dry the putting surface and reduce the number of consecutive hours of leaf wetness. Between having a healthier plant and a drier turf canopy, disease pressure is also reduced.

Q How much is the surface putting green temperature lowered with use of fans?

On a sunny 90° F day, the surface temperature of the green is in the range of 100 to 105° F. With a fan running, the surface temperature will drop to about 85° F. With the use of mist nozzles on the fan, the surface temperature can drop to 75 to 80° F.

Mist nozzles on a fan can be a double-edged sword. If used for short periods during the heat of the day, mist nozzles and the fan can help reduce surface temperatures. If overused, the surface will become too wet, leading to turf decline and more disease.

Q What are the situations where fans are most effective?

My experience is to use fans on the worst greens and soon they will be the best greens. What were formerly the best greens will look bad in comparison to the greens that have fans.

Any green that has restricted airflow is a prime candidate for a fan, as are greens that are in a high humidity microclimate, such as greens near or surrounded by open water.

Q What is the trigger to turn fans on and off?

The scientific answer is to turn on the fans anytime the air temperature is greater than 86° F. Above 86° F, the rate of respiration exceeds the rate of photosynthesis and the plant is using more energy than it is producing. The practical answer is any time there is going to be a long period with air temperatures above 86° F and/or the greens are wet and the humidity is high.

In the Carolinas, superintendents generally run fans 24 hours a day from Memorial Day through Labor Day on the worst greens and from about 10:00 a.m. to 7:00 p.m. on the best greens. A general guideline is that it costs about \$300 per month, per fan for electricity.

Superintendents stop using fans when the daytime air temperature drops below 86° F and the night-

time temperature drops below 70 to 75° F.

Q How big of an area do fans impact?

That depends on the fan, but we recommend that the fan generate a wind speed at the putting surface of three to nine mph. Lower than three mph and there is not much benefit to the turf, higher than nine mph the turf tends to dry out.

Most greens have two fans and some have three, depending on the surface contours. Orient the fans to take advantage of the prevailing wind. On the best greens, only one fan may be needed.

Q Anything else you would like to add?

Location of the fan is critical. It is the surface of the green that needs increased air flow; not six feet above the surface. Take advantage of oscillating fans. Most golf courses start with fans on two or three of the worst greens and when they see the improvement, they gradually add fans to all the greens.



Clark Throssell, Ph.D., loves to talk turf. Contact him at clarkthrossell@bresnan.net.



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