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TURFGRASS TRENDS

Volume 8, Issue 4 • April 2000

RESEARCH UPDATE

Subsurface Air Movement: Timing, Intervals and Direction

By B. Todd Bunnell and Bert McCarty

Pushing or pulling ambient air through the soil column of golf greens via subsurface drain lines is an innovative method of potentially reducing heat and water stresses, and toxic gas buildup. Commercial air exchange units currently utilize a blower/vacuum attached to the drain line outlet of a golf green. The proposed advantages are improved soil aeration, purging of unwanted gases, root zone cooling, improved soil water status, and overall root and shoot performance (Dodd et al., 1999).

Limited research exists in this area. Preliminary results show temperatures can be increased or decreased as much as 2 C during the summer months depending upon direction of air movement (Dodd at al. 1999). Pulling air heightens soil temperatures 2 C at the 10-cm depth while injecting air reduces temperatures 2 to 3 C at the same depth during the afternoon. Differences in rooting and shoot densities have not been found with either air direction (Dodd et al., 1999).

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