AIR2G2
BY FOLEY COMPANY

THE RESULTS ARE IN

Experts recommend Air2G2 for enhancing root biomass, maintaining turfgrass color and Normalized Difference Vegetation Index (NDVI), and improves turf surface hardness and water infiltration rates without causing root shear.

Optimize Turf Health Management With AIR2G2

The Air2G2 demonstrates remarkable benefits in reducing surface hardness and promoting water infiltration into the sub soil, particularly during crucial stages throughout the growing season.

Through extensive research, the Air2G2 has been shown to significantly improve root biomass when compared to solid tine aerification, without causing root shear. The long-term benefits are evident in the greater root bio-mass and length observed in treated plots compared to untreated check plots.

The Air2G2 maintained turfgrass color and NDVI levels consistently throughout the study, unlike solid tine aerification, which led to notable declines in both parameters. This impact remained for over a week before returning to levels similar to the untreated check plot.

For areas with moderate traffic and wear, a monthly application of the Air2G2 is recommended. However, for systems facing heavy use, more frequent treatments can be beneficial.

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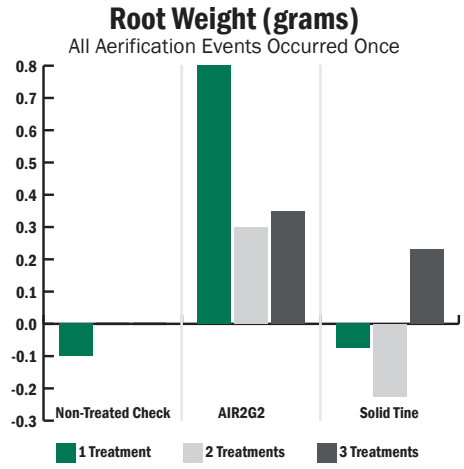
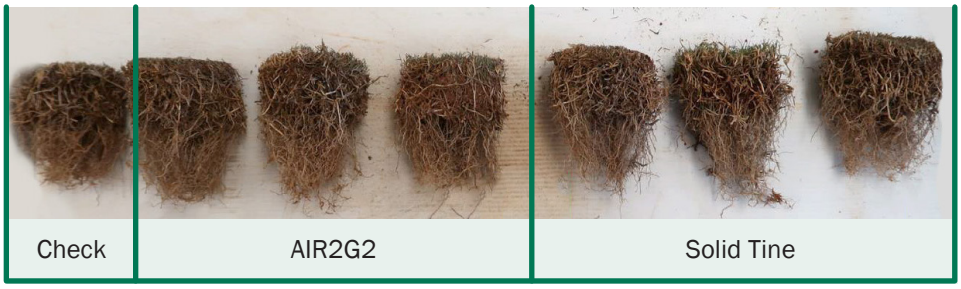
How Air2G2 Influences & Improves Rooting



(Fig. 1)

Results show that the Air2G2 treatments have proven to be highly effective in enhancing root biomass growth within just 28 days. This stands in stark contrast to the decline in root mass seen in the untreated check plots. Out of the three solid tine treatments evaluated, two led to a decrease in root biomass. These findings underscore the positive impact of the Air2G2 in promoting healthy root development and overall plant vitality. (Fig. 1 & 3)

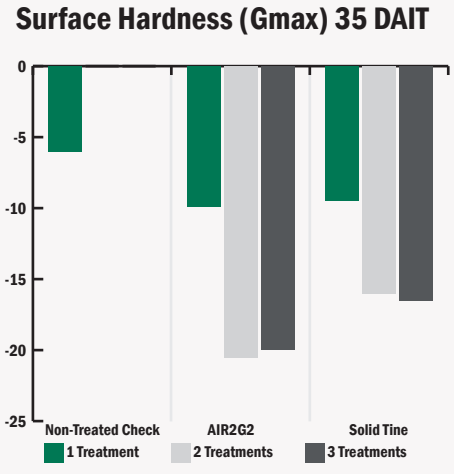
> **"all Air2G2 treatments resulted in an increase in root biomass at the 28-day mark"**



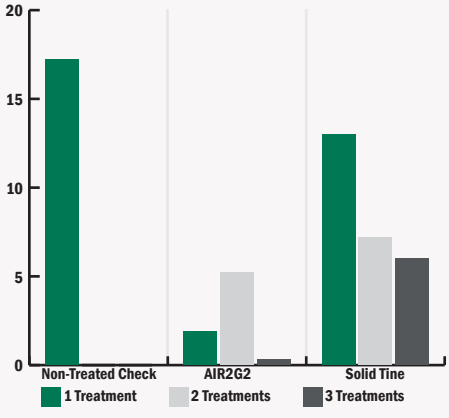
(Fig. 3)

Air2G2 Relieves Surface Hardness

The results from Figure 12 demonstrate a significant contrast in surface hardness between the second Air2G2 treatment and solid tine aerification, further emphasizing the superior and long-lasting effects of Air2G2 treatments. The data presented in Figure 13 indicates that the positive impact of Air2G2 on surface hardness remains prominent even after a substantial period of 84 days, showcasing the sustained benefits of this innovative aeration method.



(Fig. 12)
Change in surface hardness in response to treatments 35 DAIT.



(Fig. 13)
Change in surface hardness in response to treatments 84 DAIT.

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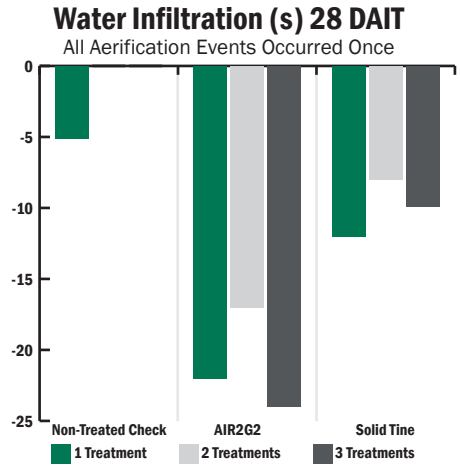
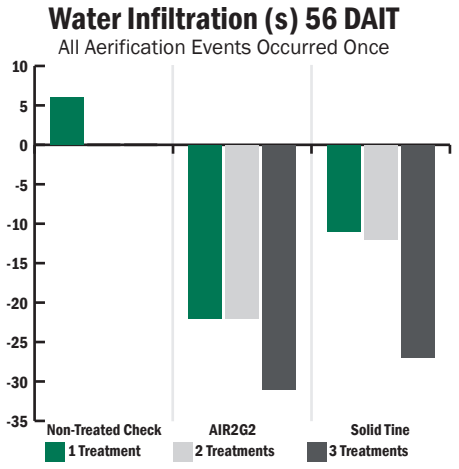
Air2G2 Improves Water Infiltration And Soil Drainage

The Air2G2 treatments showcased remarkable efficiency in water infiltration rates compared to traditional solid tine aerification methods. This superiority was evident at both the 56 and 84 DAIT marks, as illustrated in Figures 10 and 11. Whether applied once or twice, both the Air2G2 and solid tine aerification techniques outperformed the untreated control group in terms of water infiltration rates at 84 DAIT. This underscores the enduring impact of the Air2G2 treatment approach on enhancing water infiltration, proving its effectiveness months after initial application.



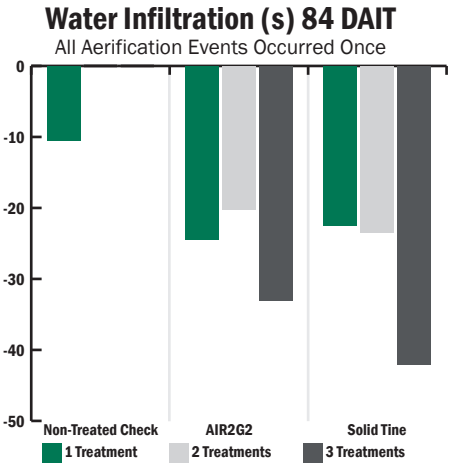
(Fig. 9)

Change in water infiltration rates in response to treatments 28 DAIT.



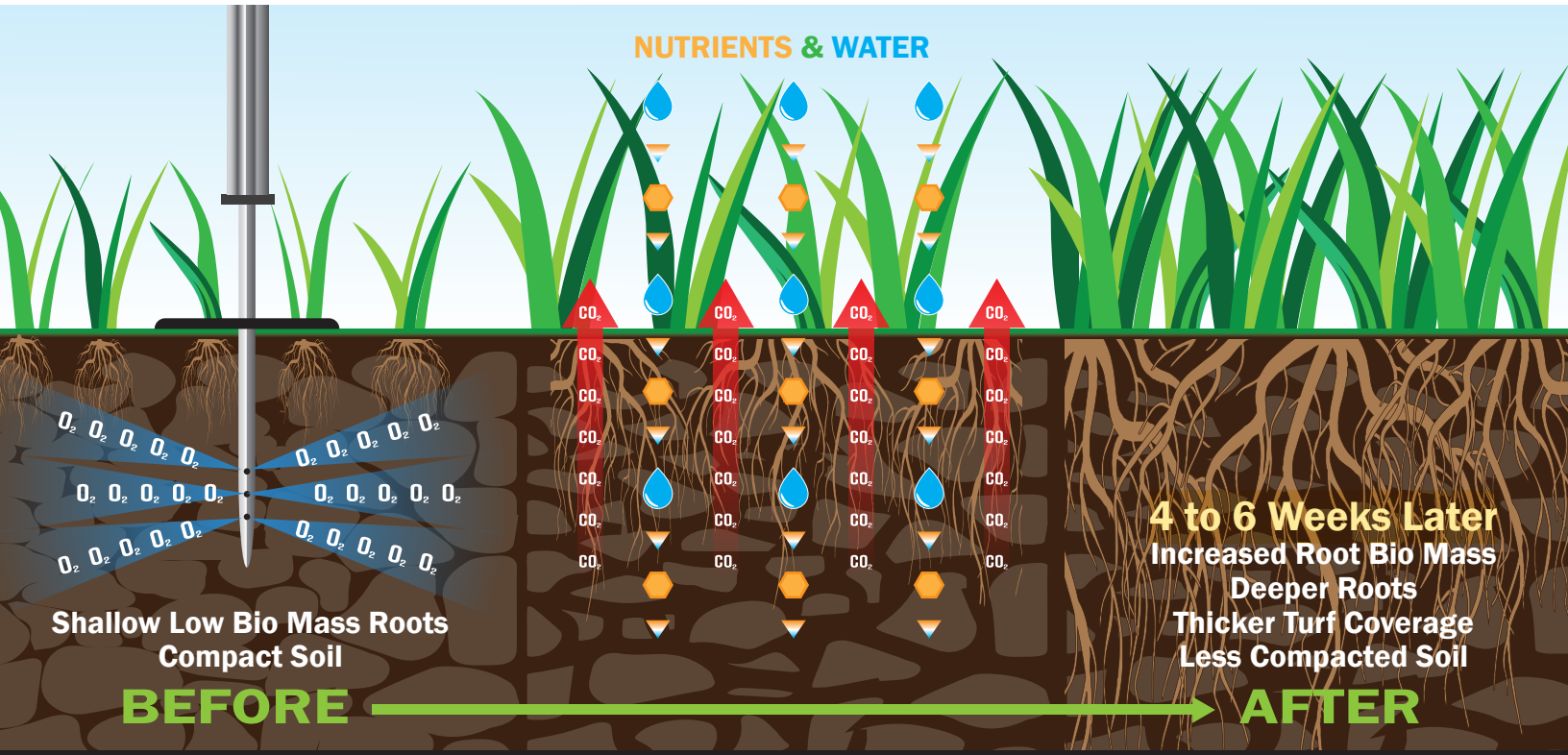
(Fig. 10)

Change in water infiltration rates in response to treatments 56 DAIT.



(Fig. 11)

Change in water infiltration rates in response to treatments 84 DAIT.



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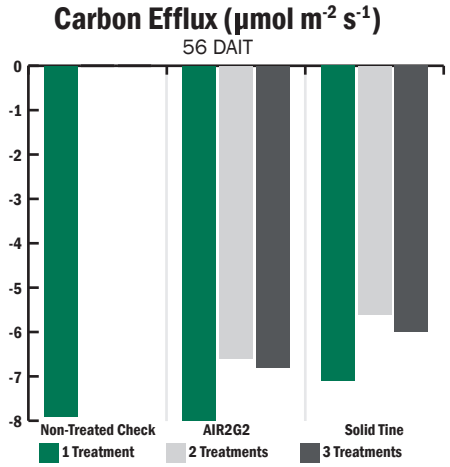
Air2G2 Improves Turfgrass Health And Aesthetic Quality

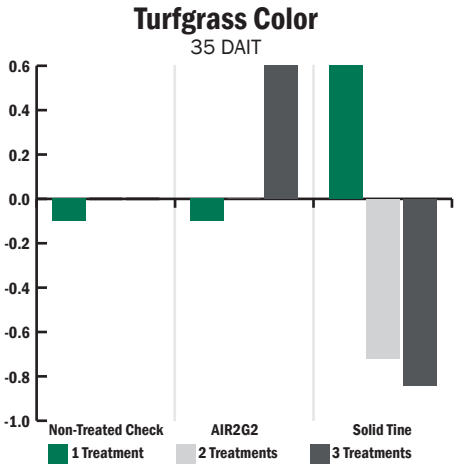
Additionally, the data also revealed that the overall health and vigor of the turfgrass significantly improved with the implementation of the Air2G2 aerification treatments.

This was evident in the enhanced turfgrass color and increased Normalized Difference Vegetation Index (NDVI) readings, showcasing the positive impact of increased oxygen levels on plant growth and resilience. These results highlight the importance of proper aeration techniques in promoting a healthy and thriving turfgrass environment.



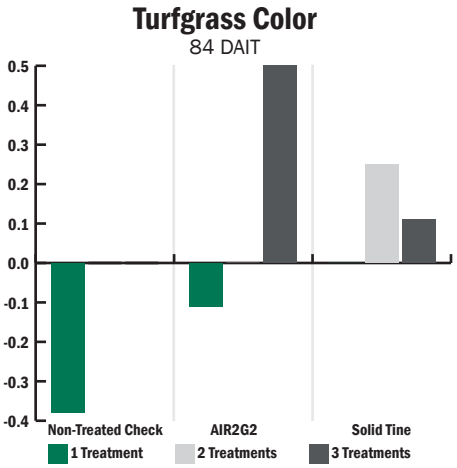
(Fig. 4)

Change in carbon efflux measurements in response to treatments 56 DAIT.



(Fig. 6)

Change in turfgrass color in response to treatments 35 DAIT.



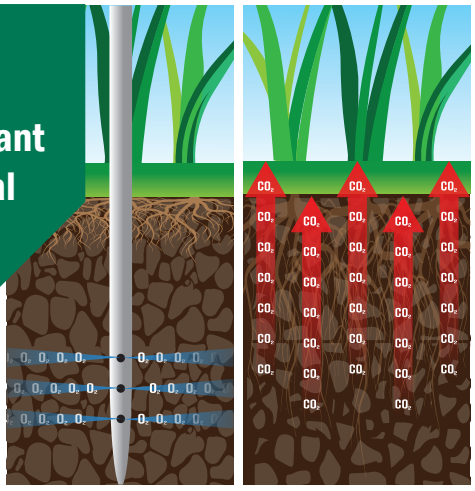
(Fig. 7)

Change in turfgrass color in response to treatments 84 DAIT.

(Fig. 5)

Carbon efflux measurements recorded with a LI-COR 8100A automated system.

> **“the soil had increased plant and microbial respiration”**



Optimize Turf Health Management With AIR2G2

A RESEARCH STUDY BY THE UNIVERSITY OF GEORGIA

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Project Title: Response of hybrid bermudagrass to the Air2G2 and solid tine aerification
Principal Investigator: Dr. Gerald Henry, PhD – University of Georgia
Location: Athens Turfgrass Research and Education Center, Athens, GA
Date: Summer 2023

Materials and Methods

Research was conducted on a 'TifTuf' hybrid bermudagrass fairway with a Cecil clay-loam native soil profile at the Athens Turfgrass Research and Education Center during the summer of 2023. Treatments were initiated during July and were arranged in a randomized complete block design with four replications. Plots measured 5 x 10 ft. Treatments included a non-treated check (no aerification); Air2G2 conducted 1, 2, or 3 times; and solid tine aerification conducted 1, 2, or 3 times. Sequential aerification events were conducted monthly. The trial was conducted over three months until it was terminated in early October. All plots were fertilized with a maintenance fertilizer (N-P-K) at 0.75 lbs N 1000 ft-2 month-1. The fairway was irrigated with an automated system that distributes approximately 1.25 inches of water wk−1. Mowing was conducted weekly at a height of 0.5 inches. A golf course cup cutter was used to remove one 4-inch wide soil core from each plot to a depth of 8 inches at trial initiation and monthly thereafter. Soil was washed from roots before they were separated from above-ground turfgrass tissue. Root length was determined (inches) and samples were dried and weighed to obtain root biomass (grams) (Objective 1). Carbon efflux (CE) (µmol m−2 s−1) measurements were recorded with a LI-COR 8100A automated system at trial initiation and monthly thereafter to provide an insight into plant root and soil microbial activity (respiration) (Objective 2). A PVC collar (4 inches in diameter) was inserted into the center of each plot (~2 h prior to measurement) to contain the sampling area (3-inch offset); a 4-inch survey chamber (infrared gas analyzer) was placed on top for measurement. A 60-s pre-purge and a 45-s post-purge period was used before and after each measurement to ensure that the collar remained clear of irrelevant CO2 buildup. A 40-s time frame was allowed to pass after closing the chamber (dead band) before the measurement was initiated to ensure a constant rate of efflux. The observation length for each measurement was 60 s. Turfgrass color (TC) and NDVI was recorded at trial initiation and weekly thereafter for the duration of the trial (Objective 2). Visual ratings of TC were recorded on a scale of 1 to 9, with a rating of 6 being considered acceptable TC. Normalized difference vegetation index was recorded with a Field Scout CM 1000 NDVI chlorophyll meter. A vegetative index was calculated (0 to 1, where 1 is best) from the reflectance readings as: NDVI = R770 − R660 R770 + R660, (1) where R770 and R660 are near infrared and red visible wavebands, respectively. An average of three readings were obtained per plot per rating date. Water infiltration rates were conducted at trial initiation and monthly thereafter (Objective 3). A 6-inch infiltration ring was inserted into the ground approximately 1-inch. Tap water (444 mls) was poured into each cylinder and a stop watch was used to determine the amount of time it took for the water to completely infiltrate into the soil profile. Surface hardness (soil compaction of the upper 2 inches of the soil profile) was determined with the use of a Clegg Hammer at trial initiation and monthly thereafter (Objective 4). Three readings were taken per plot and averaged to provide a single measurement per plot. Data was compared between Air2G2 treatments (1 vs 2 vs 3 aerification events) in order to determine the effect of aerification frequency and to better plan sequential aerification timings (Objective 5). Data was also compared between Air2G2 and solid tine aerification treatments to determine whether Air2G2 is more beneficial than solid tine aerification to a turfgrass system (Objective 6).