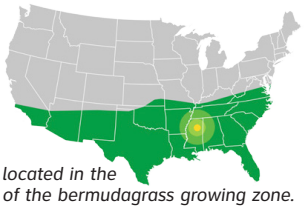
NOVEL METHODS OF MANAGING ORGANIC MATTER IN SOUTHEASTERN GOLF COURSE GREENS

DryJect®

The Only Injection Service that Aerates, Topdresses, and Amends in One Pass.

Research conducted by
Christian Baldwin, Ph.D. and Jordan Craft, Department of Plant and Soil Sciences, Mississippi State University



MSU is located in the middle of the bermudagrass growing zone.

BACKGROUND

DryJect is often asked about applications in southern regions, where the greens are predominately bermudagrass with some courses using bentgrass varieties where conditions allow.

While DryJect research has been done in many parts of North America, this study takes a close look at how DryJect Aeration measure up against traditional core aeration in Southeastern golf courses where climate conditions present unique management challenges.

DryJect commissioned Mississippi State University to study and compare DryJect Aeration with hollow tine aeration, and how it affected four primary characteristics important to golfers, superintendents and golf course general managers and owners: Play disruption, infiltration, firmness and organic matter.

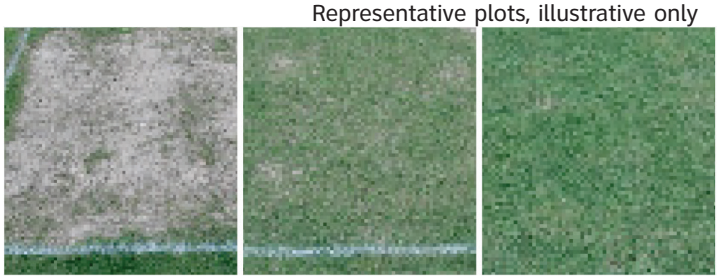
This was done in the context of widely accepted principles based on research on organic matter management on golf course greens. These principles have been proven in multiple studies.

> Increasing the amount of surface area impacted and the number of aerification events improves soil physical properties.
>
> Reducing aerification frequency, yet impacting the same amount of surface area, improves turf grass quality but tends to yield poorer soil physical properties.

RESEARCH OBJECTIVE

Optimize the combination of dry injection technology (DryJect) with a modified traditional aerification program to achieve minimal surface disruption without compromising soil physical properties and playability of an ultradwarf Bermuda grass putting green.

Representative plots, illustrative only

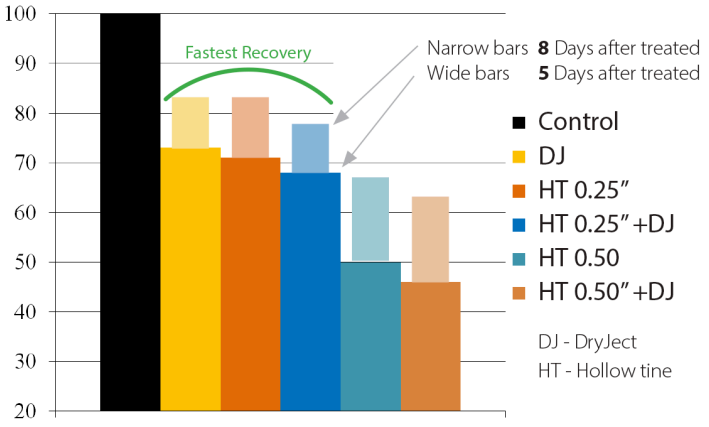


SUMMARY

Play Disruption

DryJect treatment resulted in a smooth surface immediately following treatment, which was 80% completely recovered after one week. This was an improvement over turf canopy surface smoothness resulting from traditional, hollow tine aeration and amendment, which typically requires 14 to 21 days for complete recovery, allowing for play of quality rounds to be resumed.

July Recovery (%) 5 & 8 Days After Treatment



Data comments
The three most-recovered greens are roughly equivalent. DryJect added to hollow tine treatment did not slow recovery. However, with DryJect, the added benefits include sand injection, and deeper infiltration improvement to 7" depth, than with 0.25 tines alone.

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Infiltration

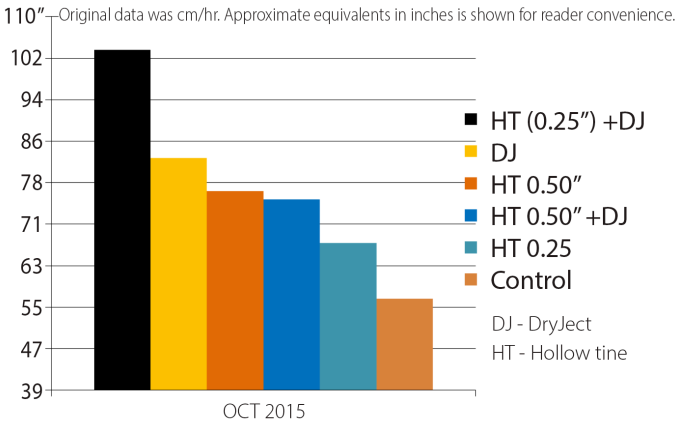
Infiltration rate from surface to 3" depth (inches / hr)

DryJect-only treatments were 2 times greater than the control for increasing infiltration rates in the top 3" of the profile. Hollow tines 0.50" provided the greatest infiltration rate boost in the top 3", a benefit offset by surface disruption.

Infiltration rate from 4" to 7" depth (inches / hr)

DJ-only treatments resulted in 2 to 3 times greater infiltration than the control at 4" to 7" depth. The 0.25" hollow tines with DryJect were 2 times greater than 0.25" hollow tines alone. Hollow tine treatments rarely penetrate to this depth. Thus DryJect used in combination with hollow tine aeration provides more uniform infiltration to a deeper depth than hollow tines alone.

Infiltration at 4" to 7" Depth (inches/hr)



Data comments

Three of the four most effective treatments include DryJect. Each is equivalent to or better than 0.50 hollow tines. However, DryJect provides other benefits that are likely to be seen as added value by golf course owners and managers.

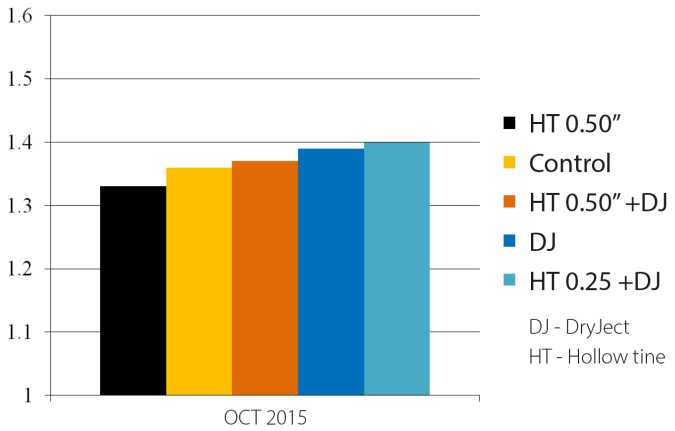
Photos courtesy of Dr. Christian Baldwin, Mississippi State University

Green firmness

DryJect treatments have been used at top courses, including numerous courses known for hosting major PGA tournaments. Results have been well documented and reported. DryJect has earned a reputation as a treatment results in a smooth, firm, and highly playable surface that allows quality rounds to be played shortly following treatment.

To golf course owners, general managers and superintendents, this is a significant advantage compared to hollow tine aeration and amendment, where the result is a rough surface that requires both time and labor resources for greens turf to recover to levels required for quality golf play. – *Dr. Christian Baldwin*

Bulk Density (g/cm3)



Data comments

While 0.50 hollow tine aeration reduces bulk density near the surface, where greens firmness is affected, the three most effective treatments include DryJect sand injection. The result is a firmer putting surface. When combined with faster recovery, a surface that golfers find attractive can directly and positively affect overall golf course revenue.

Organic matter

The organic matter content from all treatment plots had no statistically relevant difference. One can conclude that DryJect is as effective as hollow tine aeration treatments for the control of organic matter content. – *Dr. Christian Baldwin.*

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