Virginia Tech

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Plant Productivity with APEX-10 In Irrigated and Drought Conditions

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Dr. Erik Ervin, professor of turfgrass ecology and physiology, specializing in plant ecology, physiology, and biochemistry, evaluated the effects that **APEX-10** had on Penncross Creeping Bentgrass. The sites were grown under well-irrigated conditions and drought conditions.

IRRIGATED TEST PLOTS

APEX-10 was applied on Penncross Creeping Bentgrass. All plots treated with a 46-0-0 in April, June, August, October at 1/2 lb. per 1000, and November at 1 lb.

Sites were arranged, 4-plots for control and 4-plots for **APEX-10**. all areas with well irrigated to avoid any type of drought related conditions and harvested 10/14.

DROUGHT PLOTS

On 10/14, two 4” plugs were harvested from each plot, roots & soil were removed at thatch layer.

Each plugs were cut to thatch layer to simulate a sod cut. Then transplanted to sand filled cans, placed in greenhouse for 26-days without irrigation

IRRIGATED Plots

APEX-10 did not greatly increase the quality, color, or percentages of nitrogen within the leaf tissue.

However, after 6½ weeks there was an increase in photochemical efficiency in plants treated with **APEX-10**. This is a precursor to what we found under drought stress conditions.

DROUGHT PLOTS

After 3½ weeks in drought conditions, **APEX-10** treated turf retained much higher visual quality, far less wilting, with greater sustained growth, and function when compared to the control.

Conclusion

The trend is quite clear. **APEX-10** provided greater photochemical efficiency resulting in an increased in SOD antioxidant activity than plots without **APEX-10**. Plots treated with **APEX-10** under irrigated conditions had greater root mass and root growth. As a result, allowed for sustained leaf function and root growth under drought conditions. These are very promising results.

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90-Days, with fertilizer and irrigation

26-Days without irrigation

Irrigated Conditions Increase

- Photo Chemical Efficiency 12%
- Root Weight 42%
- Quality 9

Drought Conditions Increases

- Photo Chemical Efficiency 52%%
- Root Weight 70%
- Quality 36%
- SOD Antioxidants 28%

Green Nature

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