

One Year Assessment of Three St. Augustine Cultivars Resistance to Take-All Root Rot

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Introduction

- Take-all root rot is a one of the major problems faced by Florida homeowners. The disease is known to affect all warm season turf grass species.
- Not all turf species and cultivars are equally susceptible to take-all root rot and not all species express the same symptoms.
- Take-all root rot is caused by the fungus *Gaeumannomyces graminis* var. *graminis* (GGG). The disease not only affects roots but also found on rhizomes and stolons. The disease mostly occurs in the wet, humid summer months. In January 2021, we established a take-all root rot trial in Kenansville, FL on three cultivars of St. Augustine: Floratam, CitraBlue, and ProVista.

Methods

- This was a completely randomized block design with eight replications at one square meter each.
- This area was inoculated with GGG in 2018.
- These were evaluated using a visual assessment of turf, using the Horsfall-Barratt Scale to indicate disease severity..
- Drone imagery and the enhanced normalized difference vegetative index (endvi) algorithm were also utilized in the assessment.
- All plots were cared for according to BMP recommendations.
- A visual assessment was conducted a year post planting using the Horsfall-Barratt Scale. The disease was confirmed via microscopic observation.

CitraBlue demonstrated excellent resistance to Take-All Root Rot when compared to Floratam and ProVista.

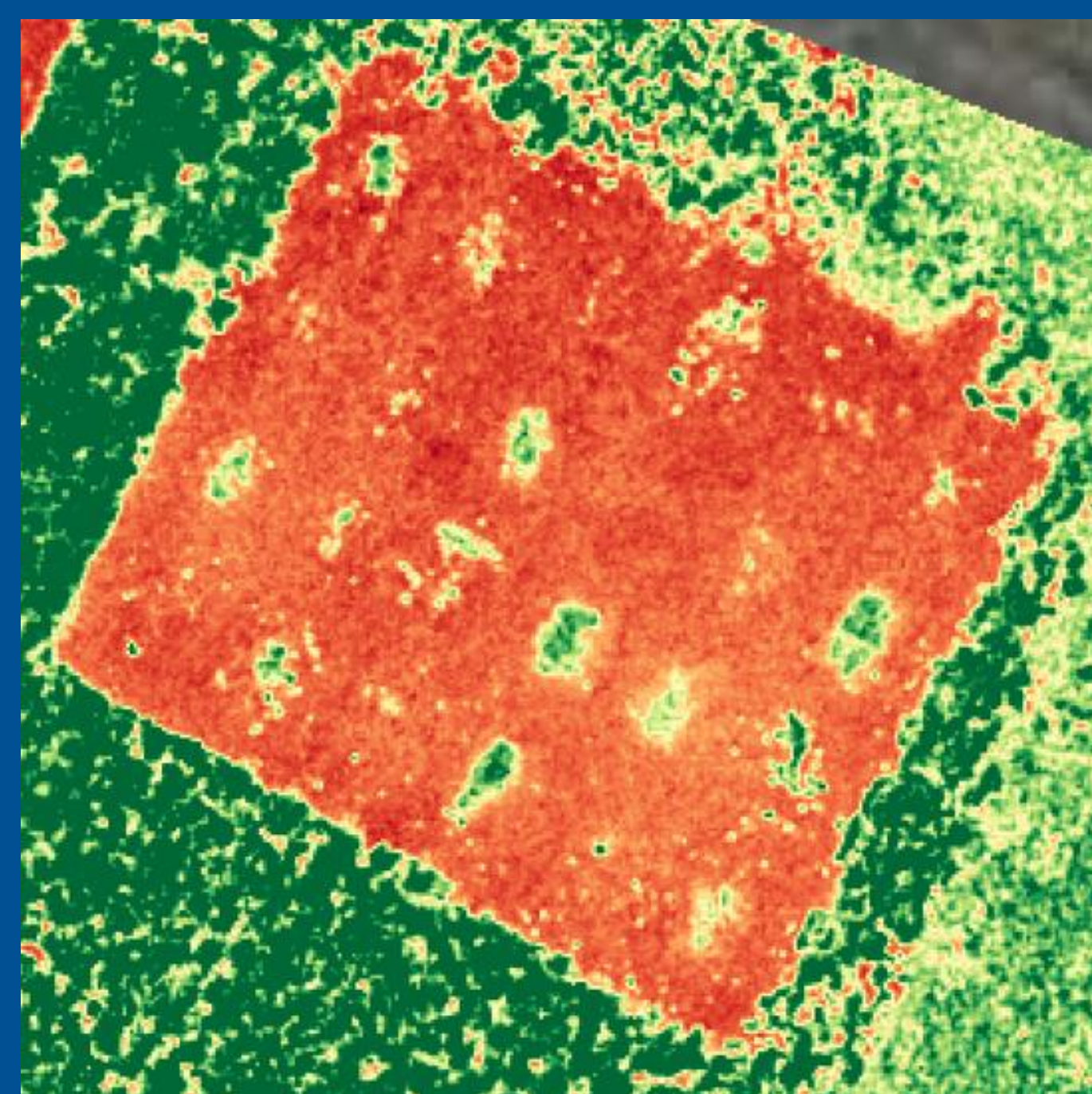
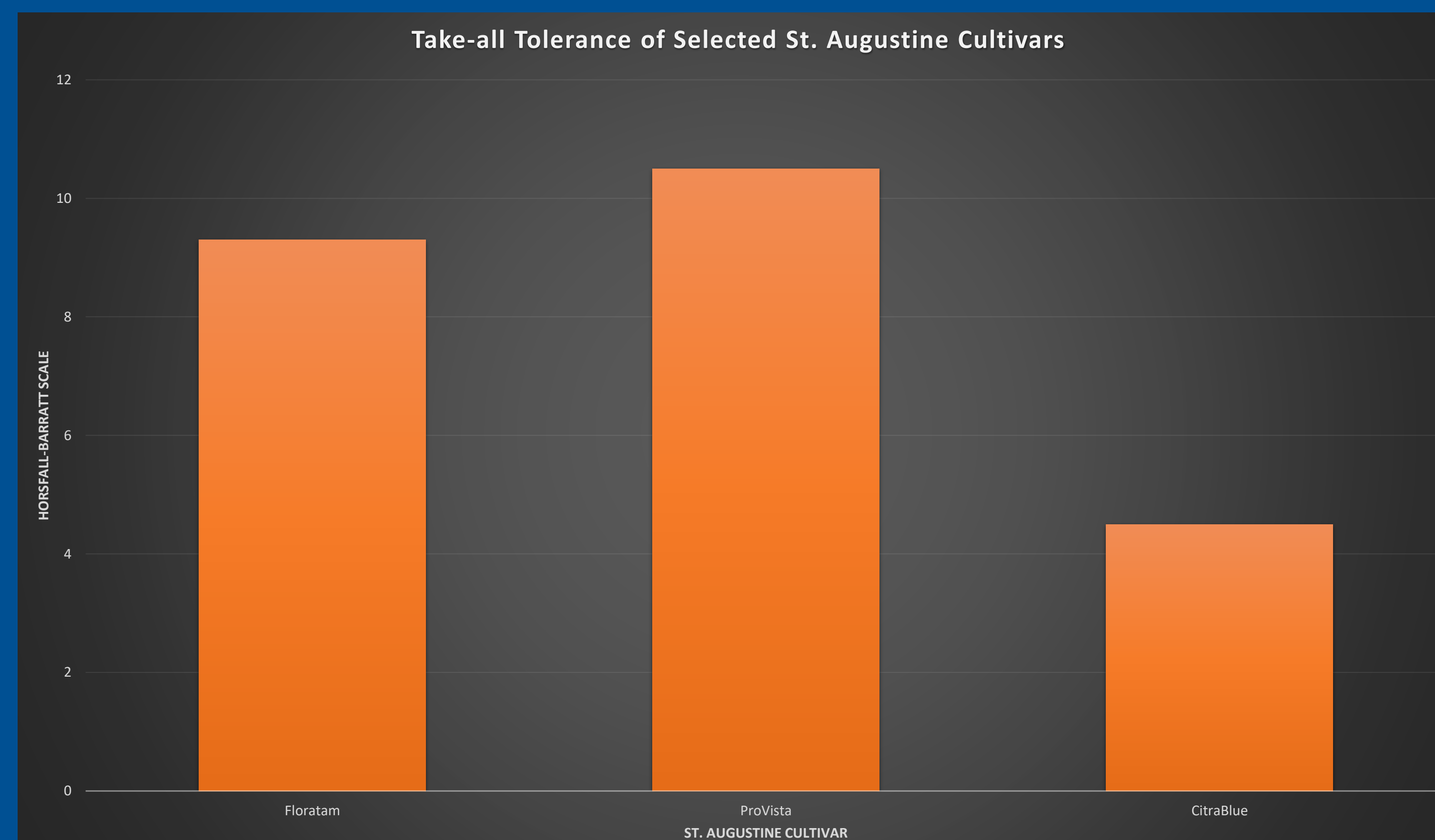


Figure 1: Excess Green algorithm applied to show healthy plots



Figure 2: RGB drone image

Results

- The Horsfall-Barratt score for CitraBlue was 4.5 (indicating 12% disease).
- Floratam scored 9.3 (indicating ~90% disease).
- ProVista scored 10.5 (indicating ~97% disease).
- Drone imagery was also incorporated into the assessment for later correlation with the Horsfall-Barratt assessment.

Discussion

- When replacement of a Floratam lawn is needed, CitraBlue is currently a very tolerant cultivar of St. Augustine turf to take-all root rot.
- We intended to establish these plots for a two year assessment, but the Floratam and ProVista turf plots are unlikely to survive for a two year assessment.



Figure 3: Turf plots on day of establishment