

NON-IRRIGATED TURFGRASS STUDY

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Introduction

The purpose of this study was to evaluate turfgrass varieties for home lawn use in the Central Texas area when maintained under non-irrigated conditions. This study consisted of 11 turfgrass varieties in plots of 1000 square feet in size. The plots were planted in July of 1997 and then maintained using best management practices until the end of March, 1998. From April 1998 until 2001 the plots only received supplemental irrigation with spring and fall fertilization applications of 21-7-14 at 5 pounds per 1000 square feet. They were mowed weekly at a height of 1.5 inches and fertilized in the spring and fall. The grasses were rated monthly during the growing season. Grasses included in the study were: Common Bermuda, Tifway 419 Bermuda, Baby Bermuda, Palmetto St Augustine, Raleigh St Augustine, Floratam St Augustine, 609 Buffalo, Top Gun Buffalo, JaMur Zoysia, Crown Zoysia and El Toro Zoysia.

Results

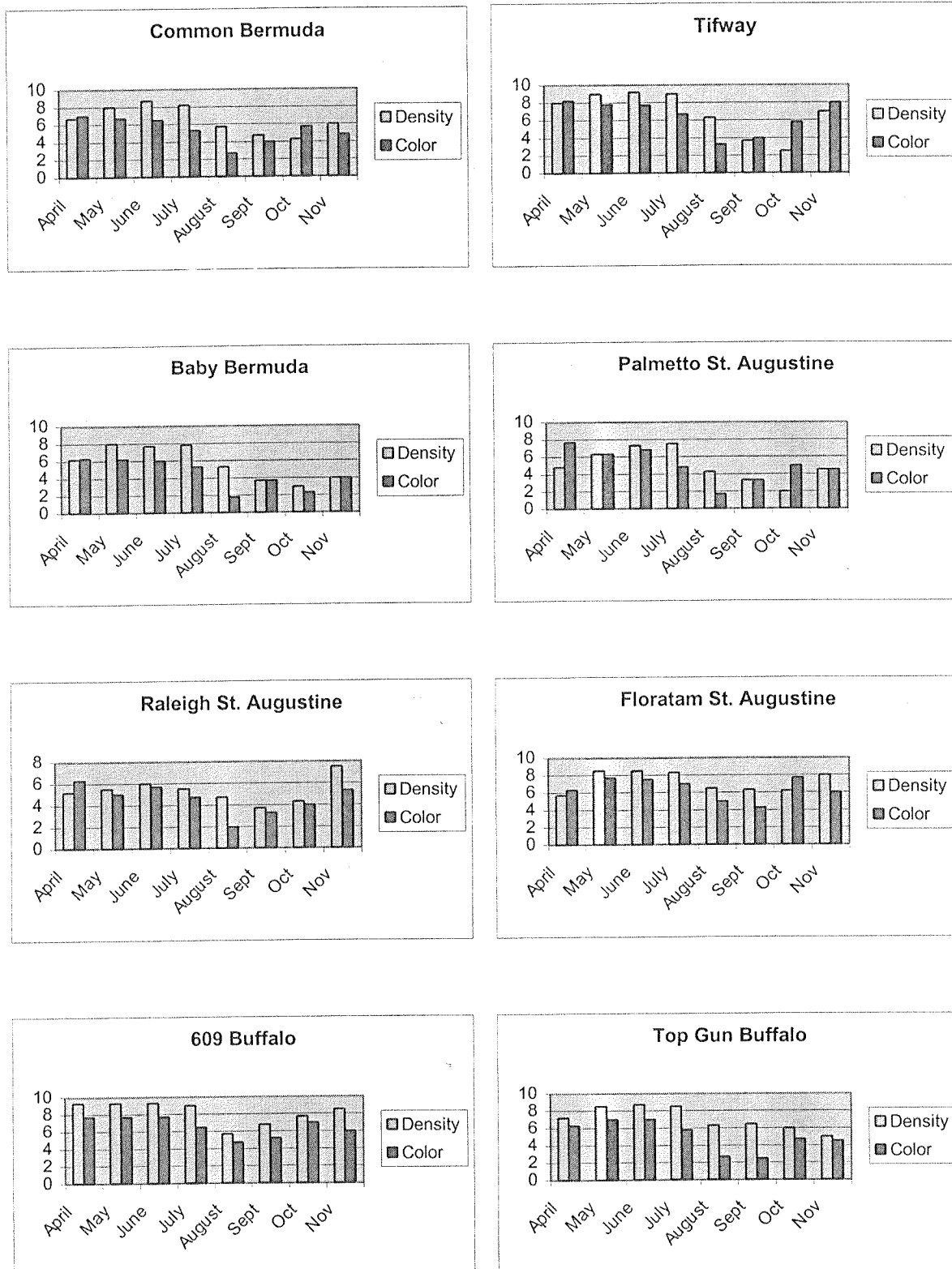
Figure 1 shows the average monthly ratings for color and density for 1998, 1999 and 2000. In this study, the buffalograsses and zoysiagrasses were the first turfgrasses to lose their color once the hot, dry weather occurred. All turfgrasses included in this study demonstrated good to excellent recovery in the fall for the first two years following the occurrence of fall rainfall events. One of the surprises for this study was how well Floratam St. Augustinegrass performed until the spring of 2001. This particular turfgrass was right behind the two buffalograsses in performance until the freeze for the 2000-2001 winter killed the Floratam.

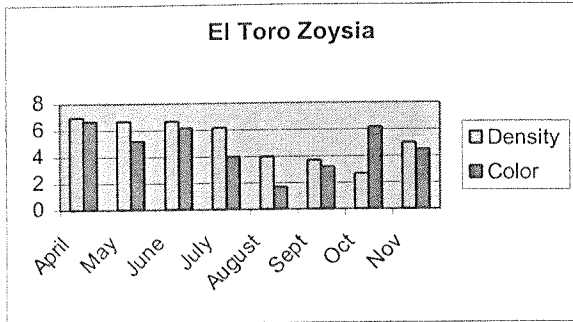
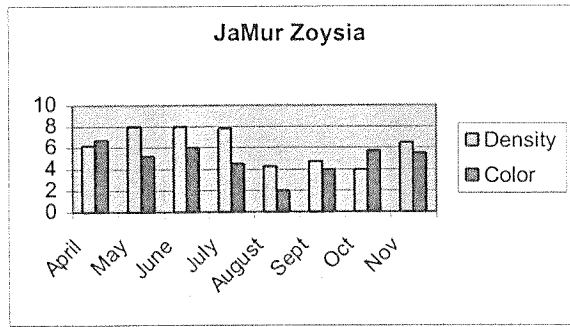
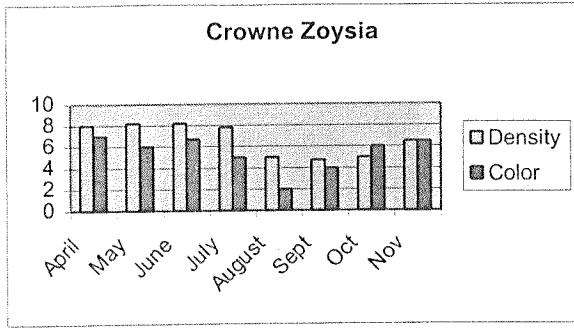
Figure 2 shows the percent survivability for the 11 turfgrasses included in this study. These ratings were taken in April of 2001, three years after the study was initiated. Based on these ratings, the two buffalograsses performed the best in this study with 98% survival for 609 and 85% for Topgun following three years of no supplemental irrigation except to water in the fertilizer applications in the fall and spring. Following the buffalograsses, Jamur zoysiagrass with 70% survival and Crowne zoysiagrass with 40% were the next two best turfgrasses in this study.

The least amount of survival occurred in the three St. Augustinegrasses with Plametto at 2%, Floratam at 1% and Raleigh at 0%. Note, the loss of the Floratam was due to the freezing winter temperatures in the winter of 2000-2001 and not to the dry conditions.

Of the three bermudagrasses included in the study, common bermudagrass ranked the highest with 35%, followed by Tifway at 25% and Baby at 5%.

Figure 1. Three year average ratings for color and density (1998, 1999, 2000)





Color: 1-9 (Natural color of grass)

1=brown

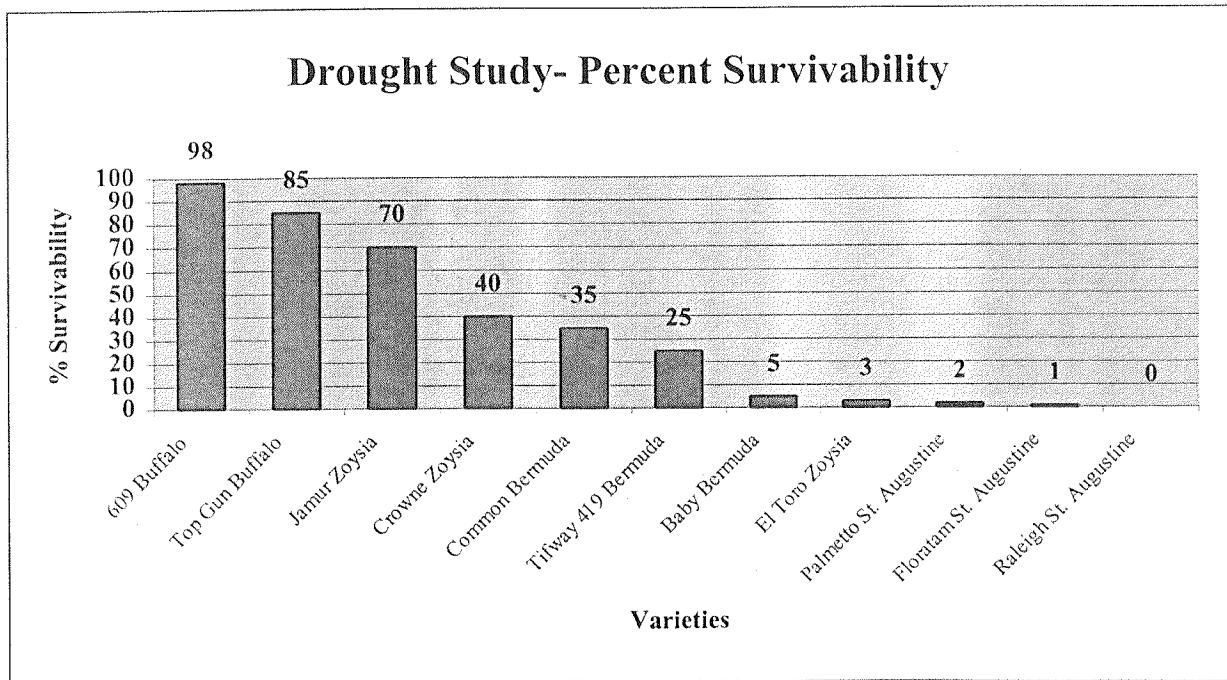
9=dark green

Density: 1-9

1=all brown

9=total green coverage

Figure 2. Percent Survivability for Turfgrass Varieties (April 2001).



Conclusion

This study demonstrated that 609 and Top Gun buffalograss can be grown in the central Texas area without supplemental irrigation and still provide a very high percent of coverage. This study also demonstrated that Floratam St. Augustinegrass has good to excellent drought tolerance and can survive very well over a three year period without supplemental irrigation as long as freezing temperatures do not occur.

While it was not investigated in this study, both authors feel that the buffalograsses, Floratam St. Augustinegrass, zoysiagrasses and bermudagrasses can successfully be grown in the central Texas area with a minimum amount of supplemental irrigation during the hot, dry summer months.