Introduction

Seashore paspalum (*Paspalum vaginatum* O. Swartz) is a perennial, warm-season turfgrass. It has potential to be used as a turfgrass in the high saline/sodic soil areas of Oklahoma. No research previously found on the sod tensile strength and handling quality of seashore paspalum thus far (P.L. Raymer, personal communication, 2016).

Objectives

- To assess the sod handling quality (SHQ) and sod tensile strength (STS) of 10 entries of seashore paspalum grown at two mowing heights (2.5 cm and 7.6 cm) and two harvest dates.

Goals

- To determine SHQ and STS of experimental and standard entries of seashore paspalum so that variety developers can make informed decisions concerning cultivar commercialization.
- To improve agronomic production practices of seashore paspalum sod with respect to the mowing height and age of seashore paspalum sod product.

Materials and Methods

- Research Location: The Botanic Garden at Oklahoma State University, located 1.6 km west of Stillwater, OK (Figures 1 & 2).
- Sod harvest: walk-behind sod cutter (Model 544844C, Textron, Racine, WI) at 12 and 14 months after planting (MAP).
- Sod pad dimensions: 38 cm x 30.5 cm x 1.5 cm (length x width x height).
- SHQ assessed on a 1 to 5 visual scale where 1 = very poor, 2 = fair (transportable to the STS device), 3 = suggested minimum acceptable rating for industry handling, 4 = suggested minimum rating for cultivar commercialization and 5 = excellent SHQ, Han (2009) and Gopinath (2015).
- STS (in kg dm⁻²) recorded as the peak force required to cause sod pad tearing using a hand winch and force transducer/recorder system (Model DFIS, John Chatillon & Sons, Inc., Greensboro, NC) [Figures 3].
- Experimental field design: randomized complete block with split block arrangement of mowing heights.
- Analytical design: split-block split in time with entries as main plots, mowing height as sub-plots and sod harvest dates as sub-sub plots.
- ANOVA using General Linear Models (Proc GLM) and Fisher’s Protected LSD test at p ≤ 0.05 in SAS version 9.4.

Conclusions

- All entries could be harvested to produce transportable small sod pads suitable for commercial install at 12 and 14 months of age and at both mowing heights.
- There were significant differences among entries in handling quality and tensile strength. No experimental lines offered consistently great SHQ or STS than commercial standards.
- Average SHQ and STS of seashore paspalum were lower in 14 vs 12 month-old sod pads except for entry ‘UGP 73’ that had numerically greater STS at 14 MAP. The reason for reduced handling quality and tensile strength of the older product is not known but needs further investigation.
- Mowing at 2.5 vs 7.6 cm did not produce a difference in either small pad sod handling quality or sod tensile strength. Additional sod production mowing heights should be investigated.
- The experiment should be repeated across both geographic locations and time to determine the stability of our findings.

Acknowledgements

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References

Gopinath, L. 2015. An assessment of the sod handling quality and tensile strength of thirty-nine turf bermudagrasses. M.S. Thesis, Oklahoma State University, Stillwater, OK.