**Introduction**

Tall fescue (Festuca arundinaceum) is a valuable and broadly adapted forage grass covering approximately 14 million hectares across the eastern United States. The success of tall fescue is attributed to the presence of Epichloë coenophiala, a dominant symbiont that colonizes the above ground plant tissue. There are four interspecific hybrid Epichloë taxa that associate with tall fescue, E. coenophiala, Epichloë sp. FaTG-2, Epichloë sp. FaTG-3, or Epichloë sp. FaTG-4. Each can be distinguished based on genetic variation. This genetic variation is important for the development of new endophyte genetic background germplasms.

**Materials and Methods (continued)**

**Results**

**Results (continued)**

- **Stand of SD fescue were lower than expected during the establishment year (2016) due to poor cold tolerance compared to SA types.** Stand data from 2016-17 after intensive grazing are presented in (Table 1).

**Table 2.** Dry matter yields of SD fescue and SA populations x endophyte combinations under four stress treatments averaged across two locations.

- **Gene Autry, OK and Vashti, TX in the southern Great Plains, USA.** Plots were established in the fall of 2017 and all stands were uniformly excellent. Table represents preliminary data collection from 2018 only.

**Table 3.** Dry matter yields of SD fescue and SA populations x endophyte combinations at three locations in California evaluated across 3 harvests during the summer of 2018 under full irrigation and infrequent harvest treatment.

**Materials and Methods**

- To evaluate the importance of endophyte in tall fescue, clone pairs was
- Developed isogenic populations using clone pairs by intermixing the E+
- Each clone pair is initiated from a single tiller to reduce the possibility of
- Seeds have been produced from nine populations of clone pairs each E+
- Isogenic seed tested for the presence or absence of endophyte as well as

**Objective**

- Our objective is to determine the relative merits of ectotypes x endophyte combinations across multiple locations where hot and dry summers can deplete or eliminate stands of tall fescue.

**Materials and Clippings**

- To evaluate the importance of endophyte in tall fescue, clone pairs was
- Developed isogenic populations using clone pairs by intermixing the E+

- **Results**

  **Table 1.** Percent stands of cloned pair plots under intensive grazing at Noble’s Unit 3 farm in Ardmore, OK and at Vashti, TX. Sward plots were established in the fall of 2016.

**Conclusions**

- We should caution against over interpretation of the clipping data since this study is in its infancy and data collection will continue for the next several years at each site for multi-location analysis.

**References**


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