

Rocky Mountain Environmental Golf Institute
Press Release
2023 Research Funding

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Project title: Evaluation of Bentgrass, Fine Fescue, and Perennial Ryegrass Varieties for Water Use and Drought Tolerance under Golf Course Fairway Management

Background and Objectives

Due to the semi-arid conditions, water use on turfgrass is an issue that will continue to be highly scrutinized in Colorado and the other western states. Turfgrasses that deliver high quality with significantly less water requirements are desirable, especially for sites such as golf course fairways and athletic fields. Research is needed to evaluate new varieties of commonly used cool season turf species for drought tolerance and adaptations in Colorado. We need information about the quantity of water required for quality turf, and to use that information to influence policy makers and regulators on the improvements made in water use in turf industry. This project will collect data and provide guidance on the amount of water required by selected cool-season species and cultivars.

From 2018 to 2020, we completed a study to determine water use and drought tolerance of different varieties of Kentucky bluegrass and tall fescue. In 2023, the PI will participate in the National Turfgrass Evaluation Program (NTEP) to identify environmentally-sound turfgrass varieties that are well-adapted to our specific region. This proposed project is to evaluate three cool-season species (bentgrass, fine leaf fescues, and perennial ryegrass) under fairway management. Grasses to be included include 11 creeping bentgrass cultivars, 1 colonial bentgrass, 4 fine fescues cultivars, and 2 perennial ryegrasses (see Table 1).

1. **The objectives** of this project are:

- 1) To determine turfgrass quality, percent cover, and growth for each of the 18 entries under three different irrigation treatments [80% reference ET (ET_o), 65% ET_o, and 50% ET_o] applied twice weekly;
- 2) To determine relative drought resistance of these entries;
- 3) Record the amount of water needed by each entry to maintain acceptable turf quality and a prescribed green cover (75%).

The ultimate **goal** of this project is to select drought tolerant, Colorado-adapted bentgrass, ryegrass, and fine fescues for Colorado and Rocky Mountain region turf industry.

Table 1. Turfgrass varieties to be included in the project.

Entry No.	Name	Species
*1	Gladiator	Hard Fescue
*2	Navigator II	Creeping Red fescue
*3	Compass II	Chewings Fescue
4	PPG FRC 127	Chewings Fescue
*5	SR 4650	Perennial Ryegrass
6	Helios	Perennial Ryegrass
*7	Musket	Colonial Bentgrass
*8	Piper	Creeping Bentgrass
*9	Oakley	Creeping Bentgrass
*10	Piranha	Creeping Bentgrass
*11	AU Victory	Creeping Bentgrass
*12	007XL	Creeping Bentgrass
*13	Macdonald	Creeping Bentgrass
*14	777	Creeping Bentgrass
15	DLF-AP-3084	Creeping Bentgrass
*16	T-1	Creeping Bentgrass
*17	Kingdom	Creeping Bentgrass
*18	Penncross	Creeping Bentgrass

*COMMERCIALY AVAILABLE IN THE USA IN 2022