

# **Identification of Drought Resistant Turfgrass Cultivars for Water Conservation**

**Progress Report to:**

**Canadian Turfgrass Research Foundation**

**Progress Report from:  
Prairie Turfgrass Research Centre  
Olds College**

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# **Identification of Drought Resistant Turfgrass Cultivars for Water Conservation**

## **Summary**

Due to poor establishment and drainage concerns the plots were re-constructed and re-seeded in 2014. Establishment was good in the fall and the plan for 2015 is to seed the fine leaf fescue trial, install a sump pump, set up the rainout shelters, hang the overhead irrigation, and begin testing. It is expected that we will be able to have at least six weeks of drought testing.

In February 2014, a large research grant was received. This will allow for expansion of this research project which will include more extensive testing.

## **Research Initiated Since Last Report**

In the spring of 2014, it was obvious that plots that were seeded in August of 2103 were not going to establish sufficiently in the chosen sight to proceed with this experiment. Going into the winter of 2013-14 Kentucky bluegrass plants were at the 3-4 leaf stage and although germination had been good, establishment was slow. As a result, there was some winter damage to the various cultivars. In addition, there was some standing water on the plots.

In May (2014), Russ Nicholson (Turfgrass Water Conservation Alliance) and Eric Lyons (Principal Investigator – University of Guelph) came to Olds to view the site. At that time the decision was made to re-construct and re-establish the plots.

In February 2014, the Natural Sciences and Engineering Research Council notified us that the large grant to support research was received. This will allow for expansion of this research project which will include more extensive testing.

## **Progress to Date**

In July, construction was undertaken by Goodwin Golf Ltd. and plots were contoured and drainage swales were constructed. Two raised platforms were constructed out of the native soils that had a 1% slope from north to south. Drainage swales were constructed on each side of the raised platforms to take away excess water from the areas to be turfed. A sump pump will be installed in 2015 to keep the area free from standing water. It should be pointed out that the first platform would be used for the Kentucky bluegrass trial and the second would be used for the fine leaf fescue trial. Space was allocated for a third platform to be built to provide for a future study.

Thirty-six varieties of Kentucky bluegrass seed was received in August and seeding took place on August 19, 2014. Plot sizes were 1 x 1 meter and were replicated four times. Seed for the fine leaf fescue portion of the study has not been received. Seed for a spring seeding in 2015 is promised. As both platforms are on the same underground irrigation zone, it is important for us to be able to seed the fine leaf fescue as early as possible in the spring. Our plan is to have the seed in the ground by May 15. As fine leaf fescue establishes more quickly than does Kentucky bluegrass it is hoped that both will be at about the same stage of development when the rainout shelters are installed.



Figure 1 – Picture of plots after a rainfall event and a few weeks after seeding.

Although, quotes had been received for the original design of a rainout shelter, the construction of the two platforms will mean that an additional shelter will need to be purchased. These two shelters will be purchased for a spring delivery with installation and a planned start date for the drought testing to be July, 2015. It is hoped that we can get six plus weeks of testing in 2015!

Irrigation will have to be planned within the rainout shelters. At this point, we expect that we will have to make provision for the hanging of overhead irrigation and piping. If the fine leaf fescue does not establish as quickly as the Kentucky bluegrass, the overhead irrigation may need to be used during the establishment period.

## **Results**

There has been no drought testing completed to date.

## **Plan for the Next Period**

January to March – Receive fine leaf fescue seed from TWCA  
-order rainout shelters

May – Install sump pump at lowest point around the plots

June-July – Install rainout shelters, and overhead irrigation

July - Commence dry down on Kentucky bluegrass

August-September – Collect data on drought tolerant grasses

**Changes to the Work Plan**

With the re-construction of the plots occurring in 2014, the work schedule has been pushed back a full year. Drought tolerance testing will now begin in 2015.

However, with the NSERC grant now being in place we have additional resources to extend the trial to a third platform and to extend the actual drought testing period.