TARA

TALL FESCUE

(NC-1)

Jonathan Green, Inc., North Carolina Agricultural Research Service and Blue Moon Farms LLC are pleased to announce the joint release of Tara Tall Fescue (experimental designation NC-1) as a cool-season turfgrass for landscape use in the transition zone of the United States. Tara Tall Fescue is a synthetic cultivar developed for improved performance under extreme summer stress – heat, drought and brown patch. Tara will make an excellent addition to the Black Beauty family, especially for use in cases of water restriction, high heat or disease pressure.

SEEDING RATES:

Overseeding:
3 – 5 lbs. per 1,000 sq. ft.

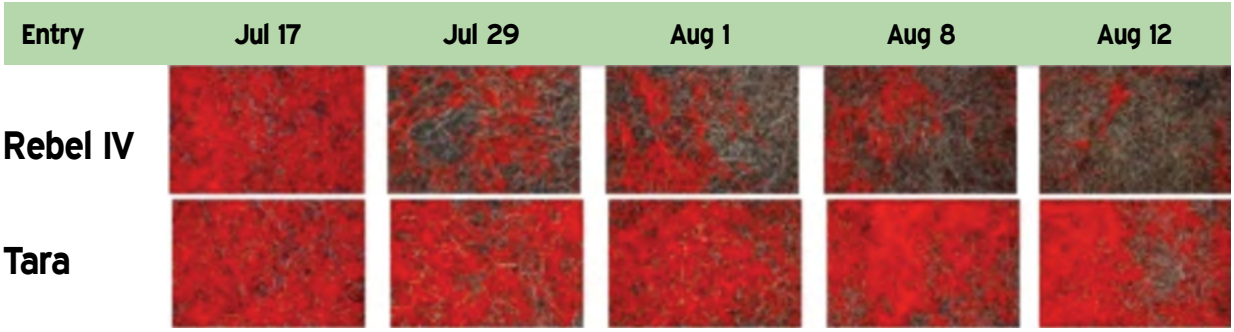
Bare Soil:
5 – 7 lbs. per 1,000 sq. ft.

Breeding History

In September 2009, 305 tall fescue families were obtained by Dr. Virginia Lehman of Blue Moon Farms. These materials originated as progenies of advanced polycrosses selected for seed yield and stem rust resistance in Oregon for the previous 12 years. After two cycles of recurrent selection for moisture stress (Sandhills Research Station, Jackson Springs, NC) and stem rust resistance (Blue Moon Farms, Lebanon, OR), 24 families (7.8% of the original 305 families) were selected for further evaluations.

In the fall of 2013, a replicated trial was established under the rain-out shelter at the Sandhills Research Station for evaluation of the selected 24 families. These entries and three commercial checks Kentucky 31, Bulldog, Rebel II and Rebel IV were established under irrigation. In the summer of 2014, irrigation was withheld for five weeks (July 14th through August 12th). During this time, the plots were evaluated twice weekly for turf quality measured visually using a rating scale of 1-9 where 1 = dead and 9 = ideal grass and by taking the normalized difference vegetation index (NDVI, a measure of plant health) with a Field Scout TCM 500 NDVI turf color meter.

Over the drought stress period, significant differences were noted among families with respect to turf quality measurements and percent cover. Families 13.0274, 13.0276, 13.0277, and 13.0278 were selected for their superior performance relative to turf quality, resistance to drought and yield traits. Seed from these families was bulked together to produce a synthetic experimental designated as Tara Tall Fescue.



Comparison of Sigma Scan calculation of percent green cover per plot. Tara versus Rebel IV across five weeks of drought in July and August.

Lower canopy temperatures, "red" in these images equal higher leaf water potential. Tara is doing a better job of extracting water from the soil and maintaining moisture in its leaves which allows it to tolerate both heat and drought stress.

TARA Tall Fescue is a BLACK BEAUTY Turf-Type Tall Fescue Variety

Performance

Turf plots of Tara Tall Fescue were established in 2015 by Dr. Grady Miller at the Lake Wheeler Turf Field Labs (Raleigh, NC) in a replicated trial. In this trial, Tara compared favorably against commercial checks on measures such as color, coverage, seed vigor, texture and density (Figure 1); but stood out for its ratings for infrared canopy temperature ratings in July and Brown Patch in August (Figure 2). Infrared canopy temperature screening was first used by plant breeders working on improved summer stress tolerance and yield for dryland wheat production. Lower canopy temperatures are positively correlated with higher leaf water potential and negatively correlated with levels of leaf death and desiccation, which means that the plant is doing a better job of extracting available water from the soil and maintaining moisture levels in the leaf tissue – allowing it to tolerate both heat and drought stress with minimal sacrifice in turf quality.

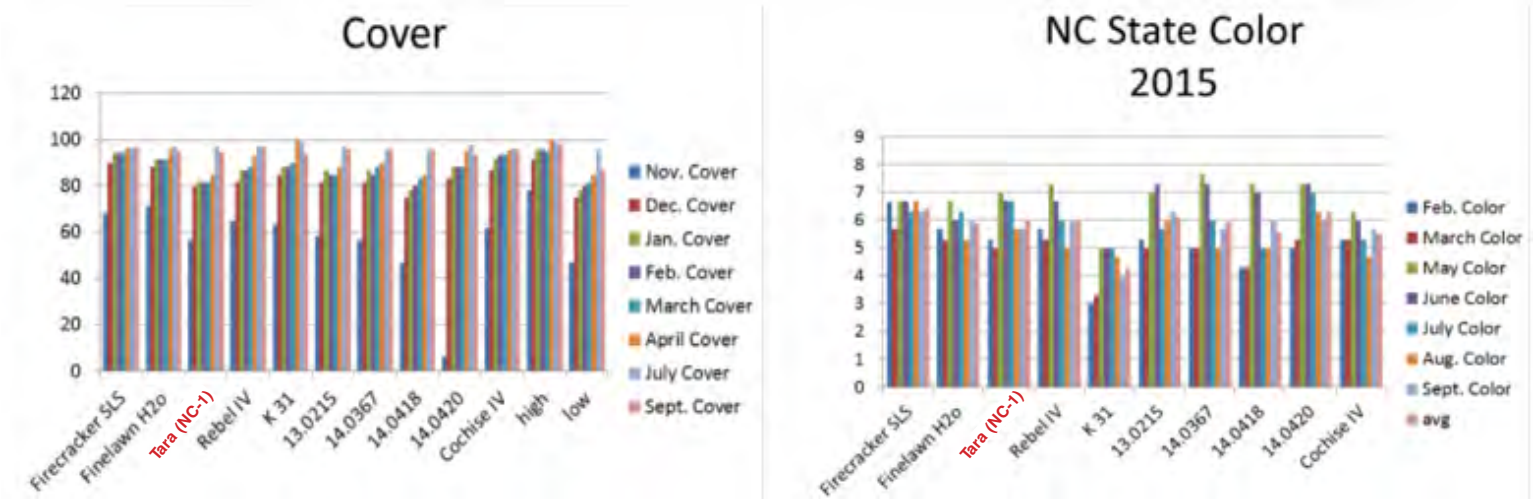


Figure 1

Tara tall fescue breeder field in April 2015

Variety	July A	July B	Brown Patch, August
Tara (NC-1)	**91.5**	**94.5**	**7.0**
Golconda	93.1	93.1	5.6
Dynamite LS	95.1	96.3	5.3
Rebel IV	93.6	95.0	5.0
Cochise 4	92.6	95.3	4.3

Figure 2: (IR temperature in degrees F, Brown Patch ratings – higher numbers indicate better performance)

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