Texas Bluegrass Hybrids: The Real Deal for Kansas or is the Jury Still Out?

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Texas bluegrass hybrids have been investigated at Kansas State University for a number of years. So what have the results revealed? Well, to date they have been both encouraging and discouraging at the same time. More on that later, but I get ahead of myself…

First of all, some of you perhaps haven't heard about Texas bluegrass hybrids and may be wondering what they are and why all the fuss about them? Simply put, Texas bluegrass hybrids are genetic crosses between native Texas bluegrass and Kentucky bluegrass. Native Texas bluegrass is a cool-season forage that is native to the southern U.S. and therefore, is necessarily resistant to heat…certainly more so than Kentucky bluegrass, which is commonly used in home lawns and golf courses in Kansas and the transition zone. Kentucky bluegrass frequently goes dormant when exposed to high heat and drought. Texas bluegrass *hybrids*, conversely, resemble Kentucky bluegrass but are reportedly more resistant to drought and heat than Kentucky bluegrass and stay green longer during hot summer months. Consequently, hybrid bluegrasses may be a good alternative for turfgrass managers who face frequent water shortages or who prefer green turfgrass during high temperature extremes in Kansas.

Like many things, however, it isn't quite that simple. One challenge in investigating hybrid bluegrasses is that there are many potential hybrids that could result from crosses between different genetic parents (cultivars) of Kentucky and Texas bluegrasses. Research at another university indicated high variability in the drought resistance among 30 Texas bluegrass hybrids, and some hybrids were even *less* resistant to drought than Kentucky bluegrass. Other hybrids, however, demonstrated significantly greater drought resistance than Kentucky bluegrass and thus, there is promise for Kentucky bluegrass-like hybrids that will perform better under conditions of drought and high heat. The challenge for researchers lies in finding hybrids with the desired characteristics. Currently only a handful of hybrid bluegrasses are available commercially, and more are likely to be released in coming years.

At Kansas State University we have investigated the heat resistance of a hybrid bluegrass, Thermal Blue (The Scotts Co.™), compared with Apollo Kentucky bluegrass and Dynasty tall fescue. (We included tall fescue in our studies because tall fescue is another popular cool-season turfgrass used in home lawn and golf course roughs in Kansas). Thermal Blue performed better than either Kentucky bluegrass or tall fescue under high temperatures. This experiment was conducted in a growth chamber, which does not necessarily equate to field conditions. Nevertheless, the results from our study were solid in that Thermal Blue stayed green longer than Kentucky bluegrass or tall fescue when exposed to high heat.

In the field, we compared the drought resistances of two hybrid bluegrasses, Thermal Blue and Dura Blue (both from The Scotts Co.™), with Apollo Kentucky bluegrass and Dynasty tall fescue. These studies indicated that tall fescue was more drought resistant than any of the bluegrasses, but that differences were negligible between Kentucky bluegrass, Thermal Blue and Dura Blue. Because soils are deep at our turfgrass research near Manhattan, Kansas, we suspect that tall fescue was able to root deeper and therefore tap into soil water deeper in the profile than any of the bluegrasses. This indicates that tall fescue may be better suited than hybrid bluegrasses in areas of the transition zone where soils are deep, especially if drought resistance is a priority.

We have learned a few other things about Thermal Blue and Dura Blue from our studies. First, tall fescue established more rapidly than Apollo or either of the hybrid bluegrasses. The establishment rate of Thermal Blue was similar to Apollo, while Dura Blue took the longest. Secondly, vertical growth rates of Thermal Blue were similar to tall fescue and generally greater than Dura Blue and Apollo. From our results, it is clear that Thermal Blue shows little promise of reduced mowing frequency compared with conventional cool-season species. The vertical growth rate of Dura Blue, by contrast, was more similar to Apollo. This suggests that there is potential for reduced mowing frequencies with Dura Blue (and perhaps future cultivars of hybrid bluegrasses) compared with tall fescue. Third, Thermal Blue had a nice texture that was similar to Kentucky bluegrass, but it was generally lighter in color than Apollo, Dura Blue, or Dynasty. The color of Thermal Blue would darken after fertilization with nitrogen (N), however, which indicates that N-fertilization rates may be higher for Thermal Blue where dark green turf is desired.

Susceptibility to bluegrass billbug was found in Thermal Blue, Dura Blue, and Apollo in our research. Billbug damage was similar among the two hybrid bluegrasses and Kentucky bluegrass in one of our studies, but in another study Apollo was damaged more than Thermal Blue. This suggests that pesticide costs in hybrid bluegrasses may be similar to Kentucky bluegrass and higher than in tall fescue (tall fescue was not damaged by billbugs in any of our studies), although it is important to point out that other cultivars of hybrid bluegrasses not tested in this study may be more resistant to billbug damage. Because research by other scientists has shown that some cultivars of hybrid bluegrasses may exhibit greater resistance to both drought and billbug damage than others, further research is needed using new or different cultivars of hybrid bluegrasses and in areas with different (i.e., shallower) soils to more completely determine the potential for the use of Texas bluegrass hybrids in the transition zone.

Research will continue at Kansas State University about the potential for the use of Texas bluegrass hybrids in Kansas. More information will be forthcoming in future years.