

# RESEARCH UPDATE

## Tall fescues changing for the better

by Robert Shearman, Ph.D., University of Nebraska

Tall fescues are showing continued acceptance as a turfgrass species, particularly since the development of the new turf-types. The new cultivars have even finer texture and lower growth habits than their predecessors.

These new, low-growing types, called dwarf-type tall fescues, can easily be classified into four groups: dwarf-types, turf-types, intermediate-types and forage-types. Presently, the term "fine fescues" is used by many producers and users to describe the new turf-types. This terminology is confusing, since fine fescue and fine-leaved fescue have been used to describe creeping red fescue, chewing fescue, and hard fescue species.

### Forage-types

Forage-type tall fescues include cultivars like Alta, Kenhy and Pastuca. Forage-types have been used as turfs with varying degrees of success, depending on the turf's requirements. Cultivars in this group are characterized by rapid leaf growth and vertical elongation, coarse texture, light-green appearance and lack of tolerance to low mowing.

Recent studies at Nebraska have demonstrated that cultivars like Pastuca and Kenhy have high water use rates. They also have intermediate rooting depths and high wilting tendency when maintained under turfgrass conditions. Their high water use rates are associated with rapid vertical elongation rates and open canopies.

Forage-type tall fescues are probably most suited for use in roadside or utility turfs.

### Intermediate-types

Intermediate-type tall fescues like Kentucky-31 or Clemfine generally have characteristics like forage-types. But they tolerate frequent close mowing better than cultivars like Alta or Kenhy.

Kentucky-31 has a rapid vertical elongation rate and an intermediate canopy density. Its high water use rates are comparable to the forage-types. But it tends to have a low wilting tendency and produces a very deep root system under turfgrass conditions.

Intermediate-type tall fescues are most suited for low-maintenance turfs.

RELATIVE CHARACTERISTICS FOR SELECTED TALL FESCUE CULTIVARS

Cultivar	Type	Rooting Depth	Wilting Tendency	Drought Avoidance	Type	Topgrowth	Clipping Yield	Verdure
Kenhy	Forage	Intermediate	Very High	Low	Forage	Very High	Very High	Low
Pastuca	Forage	Shallow	Very High	Low	Forage	High	Very High	Low
Kentucky-31	Intermediate	Very Deep	Low	Very High	Intermediate	High	Very High	Intermediate
Houndog	Turf	Intermediate	Intermediate-Low	Intermediate	Turf	Intermediate	Intermediate-Low	Very High
Mustang	Turf	Deep	Intermediate	Intermediate	Turf	Intermediate	Intermediate	High
Trailblazer	Dwarf	Deep	Intermediate-Low	Intermediate	Dwarf	Very Low	Low	Very High
Monarch	Dwarf	Intermediate	Intermediate	Intermediate	Dwarf	Very Low	Low	High

\*Based on University of Nebraska turfgrass research.

### Turf-types

Turf-type tall fescues include cultivars, such as Rebel, Mustang and Adventure (actually the list of these cultivars is quite long). Turf-types are characterized by: lower leaf elongation rate, slower vertical elongation rate, finer texture, greater canopy density and a darker green color than the forage- or intermediate-types.

These cultivars differ in their water use rates, but generally rank medium to low in water use as a group. They differ in their rooting depths and in their ability to avoid drought symptoms.

Adventure produces a very deep root system, has a very low wilting tendency. It also tends to avoid drought symptoms better than other cultivars tested. Rebel, on the other hand, produces a shallow to intermediate root system, has high wilting tendency and low drought avoidance, but recovers rapidly after periods of drought stress.

The lower water use rate associated with the turf-types is closely associated with slow vertical elongation rates and dense canopies.

Turf-types tend to have high to very high wear tolerance ratings. Their wear tolerance is associated with high verdure density, high shoot density, high load-bearing capacity and high cell wall production.

Turf-types also have a higher thatching tendency than the forage-types. Thatching tendency is closely associated with cell wall production and verdure density.

### Dwarf-types

Dwarf-type tall fescues are characterized by cultivars, like Monarch, Trailblazer and several experimental lines that are likely to be released soon.

These cultivars have many of the same characteristics of the turf-types, but tend to have even slower vertical elongation rates and finer texture.

Dwarf-type tall fescues are characterized by clipping-yield-to-verdure ratios of less than one. In fact, some dwarf-types produce half the amount of clippings as they do verdure. Since verdure is the green vegetation beneath the mowing height, this characteristic is very desirable to turfgrass managers concerned about reducing mowing but also maintaining desirable turf.

Water use for dwarf-types ranked from medium to low. Their water use rate was closely associated with high verdure density and low vertical elongation rate. Dwarf-types differ in root production and distribution. This difference in root production and distribution is important because shallow, nominal rooting has been associated with dwarf-types in other grass species. Dwarf-type tall fescues had cultivars with root production and distribution as great or greater than some of the intermediate- and turf-types.

Improvements are being made rapidly with turf-type and dwarf-type tall fescues. Turfgrass managers should pay close attention to turfgrass research information developed in their area. This information will allow turfgrass managers to identify cultivars with the best potential for use in their area.

Many of the tall fescues are currently being evaluated in the National Tall Fescue Test. Data from these trials are available through your local researchers and industry representatives. Use all of the available information to determine the best cultivars for your intended use. **LM**