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FINE FESCUES

Understanding the Differences

Five fine fescue taxa (strong creeping red fescue, slender creeping red fescue, Chewings fescue, hard fescue, and sheep fescue) are often grouped together and called “fine fescues.”

This publication will help readers understand the differences between these five fine fescue species and what makes each species unique.

Take-Home Points

- There are more than 450 species of fescue, but only 10 are suitable for turfgrass.
- Five fine fescue taxa (strong creeping red fescue, slender creeping red fescue, Chewings fescue, hard fescue,

and sheep fescue) are often grouped together and called “fine fescues.”

- There are known performance and management differences among these fine fescues.
- In the past, these species were all called fine fescues, but it is beneficial to refer to each fine fescue species (taxa) individually to distinguish the strengths and weaknesses of each, which helps in the selection and management of individual species.

Fescues

The term “fescue” is one that you may often hear during televised golf broadcasts or in dialogue with a person

about planting, maintaining, controlling, etc., some kind of grass at a home garden center. However, just using the term “fescue” doesn’t tell you much about this grass because there are many kinds – more than 450 fescue species. However, only 10 species or subspecies have characteristics that allow them to be suitable for turfgrass areas (Christians et al., 2017). Turfgrass fescues can be easily divided into two groups: fine and coarse, which refers to either narrow or wide leaf blade textures, respectively (Fig. 1). There is also a lack of information and confusion around the common and scientific naming of fine fescues. This, in combination with the misidentification of fine fescues, often leads practitioners to infer that individual fine fescue grasses all respond to management and environmental stresses in a similar manner. That is a misleading and significant barrier to transitioning to these low-input turfgrasses (Barnes et al., 2020).

Coarse Fescues (wide leaf blades)

Festuca is a Latin word meaning stem or stalk, and it is the genus (first word in scientific name) for fescue grass species. Hence, *Festuca* grasses are named Fescue. Tall fescue (*Festuca arundinacea*, synonym *Schedonorus arundinaceus*, synonym *Lolium arundinaceum*) and meadow fescue [*Schedonorus pratensis* (formerly *Festuca pratensis*)] are two of the common coarse fescues used in turfgrass areas (Table 1). The coarse-leaved tall fescue and meadow fescue are similar. Meadow fescue is used sparingly for overseeding in warm-season turfgrass or as a forage grass; tall fescue is commonly used in lawns, roadsides, and pastures (Fig. 2). The common turf-type tall fescue and fine fescues both have finer (narrow) leaf texture than old forage-type tall fescue cultivars, such as ‘Kentucky-31’ or ‘K-31’ tall fescue.

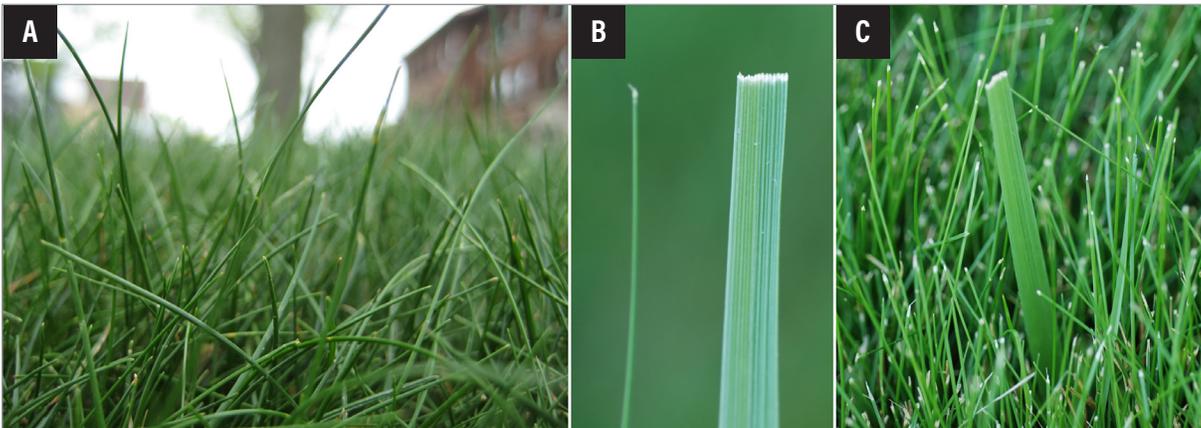


Figure 1. Very fine, pine needle-like leaf texture of fine fescue (A); leaf texture differences between fine fescue (left) vs. coarse, tall fescue (right) (B); and a tall fescue leaf (middle) in a stand of fine fescue (C). Photos by Ross Braun and Aaron Patton.



Figure 2. Tall fescue (turf-type). Photo by Aaron Patton.

Fine Fescues (narrow leaf blades)

Fine fescues are used across a range of turfgrass systems, including home lawns, commercial properties, golf courses, parks, roadsides, low-input sites, and other utility turf. Five fine fescue turfgrasses are commonly used in turfgrass systems: strong creeping red fescue (*Festuca rubra* L. ssp. *rubra*), slender creeping red fescue (*Festuca rubra* L. ssp. *littoralis*), Chewings fescue (*Festuca rubra* L. ssp. *commutata*, synonym *Festuca rubra* L. ssp. *fallax*) (see footnote on the common name of Chewings fescue



Figure 3. Chewings fescue. Notice the fine leaf texture (narrow leaf width) compared to tall fescue in Figure 2. Photo by Aaron Patton.

in Table 2), sheep fescue (*Festuca ovina* L., synonym *Festuca ovina* L. ssp. *hirtula*), and hard fescue (*Festuca brevipila*) (Table 1). These five fescues are often grouped together and called “fine fescues” because of their similar appearance of fine (narrow or bristle) leaves, which means they are difficult to distinguish from one another (Figs. 1, 3, and 4). In addition to the previously mentioned five, many other fescues share a similar appearance of this fine leaf texture, but they are not commonly used in turfgrass systems. One example is blue fescue (*Festuca glauca*), which is more commonly used as an ornamental grass.

There is a lot of confusion and debate regarding the scientific (taxonomic) classification of fine fescues (Braun et al., 2020) (Table 2). Recently, a team of researchers working on a grant from the USDA-NIFA through the Specialty Crop Research Initiative put together an exhaustive scientific review of the fine fescue turfgrass species. The review clearly documents differences in growth, production, establishment, management, utilization, pest tolerance, and stress tolerance of the fine fescue taxa (Braun et al., 2020). Taxa, plural of taxon, is a group of one or more populations of an organism(s) used in the science of biological classification, or taxonomy. In the review by Braun et al. (2020), the recommended taxonomic classification is presented (Table 2) to hopefully bring greater clarity and accuracy to the use of scientific names for these grasses in the future.



Figure 4. The five fine fescues commonly used in turfgrass systems have similar morphological characteristics of a folded vernation (A), small or absent ligule and auricles (B), and pointed leaf tip (C). Differences can be observed among tiller leaf-sheaths, with a fused tiller leaf-sheath characteristic of strong creeping red fescue, slender creeping red fescue, and Chewings fescue (D). An overlapping tiller leaf-sheath characteristic of sheep fescue and hard fescue (E). Photos by Ross Braun.

Table 1. Fescue grasses used in turfgrass or ornamental landscapes

Common Name	Common Uses
Coarse fescues	
Tall fescue (turf-type and forage-type)	Turf-type tall fescue is used in home lawns, athletic fields, golf courses (i.e., roughs and tall grass natural "native" rough areas), commercial properties, parks, low-input sites, and other utility turfgrass areas (e.g., roadsides). Some tall fescue cultivars produce short rhizomes and may be marketed as RTF (Rhizomatous Tall Fescue). These rhizome-forming cultivars are not a different species. Forage-type tall fescue cultivars, like Kentucky-31, are typically used as forage or utility grasses for roadsides.
Meadow fescue (also known as English bluegrass)	Mainly a forage grass, but can be used for overseeding in warm-season turfgrass.
Fine fescues commonly used in turfgrass systems	
Strong creeping red fescue	Home lawns, shaded sites, commercial properties, golf courses (i.e., fairways and tall grass natural "native" rough areas), parks, no-mow areas, low-input sites, other utility turfgrass (e.g., roadsides).
Slender creeping red fescue	Home lawns, shaded sites, commercial properties, golf courses (i.e., putting greens, fairways, and tall grass natural "native" rough areas), parks, no-mow areas, low-input sites, other utility turfgrass (e.g., roadsides).
Chewings fescue	Home lawns, shaded sites, commercial properties, golf courses (i.e., putting greens, fairways, and tall grass natural "native" rough areas), parks, no-mow areas, low-input sites, other utility turfgrass (e.g., roadsides).
Sheep fescue	Home lawns, shaded sites, golf courses (i.e., tall grass natural "native" rough areas) parks, no-mow areas, low-input sites, other utility turfgrass (e.g., roadsides).
Hard fescue	Home lawns, shaded sites, golf courses (i.e., tall grass natural "native" rough areas), parks, no-mow areas, low-input sites, other utility turfgrass (e.g., roadsides).
Other fine fescues	
Blue fescue	Common ornamental grass in landscape beds
Fine-leaf sheep fescue (also known as hair fescue, fine-leaved sheep fescue, or slender fescue)	Easily confused with sheep or hard fescue, but it is known for being a ruderal weed and has been rarely used for turfgrass areas
Shade fescue (also known as various-leaved fescue)	Mainly found in woodland areas and dry, sandy soils.
Idaho fescue (also known as blue bunchgrass or bluebunch fescue)	Mainly found in grasslands and open forest communities in western North America.
California fescue	A valued grass because of its name, but it is not a fine-leaved fescue, instead it has a coarser leaf texture similar to tall fescue.
Molate fescue	A rhizomatous red fescue often used in grassland restoration or no-mow landscape settings.

Sources: Barnes and Reiter (2020), Braun et al. (2020), Darbyshire and Pavlick (2007), and Ruemelle et al. (2003).

Table 2. Recommended taxonomic classification for the five fine fescues used in turfgrass systems.

Common name	Correct taxonomic classification†
Strong creeping red fescue (creeping or spreading red fescue) [§]	<i>Festuca rubra</i> L. ssp. <i>rubra</i>
Slender creeping red fescue (creeping red fescue) [§]	<i>Festuca rubra</i> L. ssp. <i>littoralis</i>
Chewings fescue [¶]	<i>Festuca rubra</i> L. ssp. <i>commutata</i> <i>Festuca rubra</i> L. ssp. <i>fallax</i> [#]
Sheep fescue (sheeps or sheep's fescue) [‡]	<i>Festuca ovina</i> L. <i>Festuca ovina</i> L. ssp. <i>hirtula</i> [#]
Hard fescue	<i>Festuca brevipila</i>

† Recommended scientific name proposed by Braun et al. (2020) following a careful review of the history of fine fescue binomial nomenclature, a study of published literature on their taxonomy, and documentation of noteworthy misapplied and illegitimate names, the current and recommended taxonomic classification, synonyms, and etymology. Other incorrect scientific names that have been presented in past literature are not recommended due to no nomenclatural standing, misapplied taxonomic naming, misinterpretation of a species name, and erroneous identification made according to another author's concept or sense of the species rather than the original author's intention.

‡ Other common names found in the scientific literature, but not recommended for use.

§ Today, red fescue (*Festuca rubra*) is classified into two groups: 1) Slender creeping red fescue or 2) Strong creeping red fescue. However, some seed labels may still just say, red fescue or creeping red fescue.

¶ The name Chewings fescue is named after Mr. George Chewings (1855-1925), who first cultivated, harvested, and sold this grass called "Chewings fescue" in New Zealand (Ruemmele et al., 2003). This grass was originally imported from England and sold to the previous New Zealand farm's owner (William Tarlton) as "hard fescue" (Morgan, 1998). After purchasing the farm, Mr. Chewings observed this unique patch of grass and began seed production (Morgan, 1998). In literature, the common name is sometimes misspelled with an apostrophe (Chewing's or chewing's) or lowercase chewings or chewing.

A correctly used synonym for the recommended scientific name.

Until now, researchers and turfgrass practitioners have frequently referred to these five turfgrasses of the fine fescue taxa as a single group ("fine fescues") which leads homeowners and turfgrass practitioners to infer that the individual taxon—strong creeping red fescue, slender creeping red fescue, Chewings fescue, hard fescue, and sheep fescue—perform similarly, which is not the case. There are significant barriers to transitioning to these low-input turfgrasses because of the misidentification of fine fescues and lack of information or confusion around the naming (fine fescues), which can lead practitioners to incorrectly conclude that each fine fescue taxon grows and responds to management and environmental stresses in a similar manner (Barnes et al., 2020). Therefore, it is recommended that homeowners, turfgrass practitioners, and researchers of these grasses begin to refer to each fine fescue individually, by their specific common or scientific name—recommended above—here forward.

Fine fescues are generally selected for low-input turfgrass sites because of the following characteristics: low nitrogen fertilizer, irrigation, and pesticide requirements, and some species/subspecies have slow growth (less mowing). These grasses can be grown on a wide variety of soil (fertile to infertile) and site conditions (full sun to moderately dense shade). They are relatively quick to germinate, generally requiring 5 to 12 days to germinate after seeding. One key characteristic of these five grasses is their excellent shade tolerance, potentially the best shade tolerance among commonly used turfgrass species (Fig. 5).

Although these five grasses are difficult to visually identify from one another (Fig. 4), new information attained from recent research on the performance of these five grasses and an understanding of their management, practitioners can capitalize on the strengths of individual fine fescue taxa, resulting in increased adoption and benefits from low-input turfgrass (Table 3). Characteristics and relative rankings of these five fine fescue taxa are listed in Table 3, which presents unique strengths and weaknesses of each: strong creeping red

fescue, slender creeping red fescue, Chewings fescue, sheep fescue, and hard fescue. Using the information described in this publication, our goal is for homeowners and practitioners to have a better understanding and confidence in choosing and utilizing fine fescue taxa (strong creeping red fescue, slender creeping red fescue, Chewings fescue, sheep fescue or hard fescue) or mixture of multiple fine fescue taxa based on site conditions, expectations, and management practices to enhance sustainability.



Figure 5. An example of the excellent shade tolerance with a dense fine fescue mixture canopy under tree shade. *Photos by Aaron Patton.*

Table 3. Characteristics of fine fescues used in turfgrass systems and management and tolerance rankings relative to one another.

Fine fescue	Chromosome number (2n)	Genetic color	Growth habit	Close mowing tolerance	Establishment rate	Nitrogen requirement	Shade tolerance	Drought resistance	Wear tolerance	Salt tolerance	Summer patch resistance	Dollar spot resistance	Red thread resistance	Snow mold resistance†
Strong creeping red	56	Medium to dark green	Thick, long and numerous rhizomes	Good	Intermediate to fast	Low to moderate	Good to excellent	Good	Poor to fair	Good	Poor to good	Poor to fair	Fair	Fair to good
Slender creeping red	42	Light to dark green	Slender, short or few rhizomes	Good to excellent	Intermediate to fast	Low to moderate	Good to excellent	Good to excellent	Good	Excellent	Poor to fair	Poor to fair	Fair	Fair†
Chewings	42	Light to dark green	Bunch†	Good to excellent	Intermediate to fast	Low to moderate	Excellent	Good to excellent	Good	Good	Fair to good	Fair	Fair to good	Poor
Sheep	28	Powdery blue-green	Bunch	Fair	Slow to intermediate	Very low	Fair to good	Excellent	Poor to fair	Fair	Poor	Fair	Good to excellent	Fair†
Hard	42	Dark grayish-green to blue-green	Bunch	Fair	Slow to intermediate	Low	Good	Excellent	Fair to good	Fair	Poor to fair	Good to excellent	Good to excellent	Good

Sources: Braun et al. (2020), Brede (2000), Christians et al. (2017), NTEP (2003, 2008, 2014, 2018), and Shildrick (1984); Paul Koch, Bruce Clarke, James Murphy, personal communication.

†There has been limited testing of snow mold resistance of slender creeping red fescue and sheep fescue in comparison to other species in the US.

‡Chewings typically has a bunch-type growth habit and, although very rare, it can have very few or very short rhizomes (Stace et al., 1992; Stace, 2019).

For more information, see *Establishment of Fine Fescues, Management of Fine Fescues, Maintenance Calendar for Fine Fescue Lawns, Fine Fescues in Minimal-to-no Mow Area, and Selecting Cultivars of Fine Fescues* Extension publications.

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References

- Barnes, M.R., Nelson, K.C., Meyer, A.J., Watkins, E., Bonos, S.A., Horgan, B.P., Yue, C. (2018). Public land managers and sustainable urban vegetation: The case of low-input turfgrasses. *Urban Forestry & Urban Greening*, 29, 284–292. <https://doi.org/10.1016/j.ufug.2017.12.008>
- Barnes, M.R., & Reiter, M. 2020. Fringe fescues: An initial exploration of native fine fescues for turfgrass applications in California. *Crop, Forage & Turfgrass Management*, e20052. <https://doi.org/10.1002/cft2.20052>
- Braun, R.C., Patton, A.J., Watkins, E., Koch, P., Anderson, N.P., Bonos, S.A., & Brilman, L.A. (2020). Fine fescues: A review of the species, their improvement, production, establishment, and management. *Crop Science*, 60, 1142–1187. <https://doi.org/10.1002/csc2.20122>
- Brede, A. D. (2000). Turfgrass maintenance reduction handbook: Sports, lawns, and golf. Ann Arbor Press, Chelsea, MI.
- Christians, N.E., Patton, A.J., & Law, Q.D. (2017). *Fundamentals of turfgrass management*. Hoboken, NJ: John Wiley & Sons. pp. 49-55.
- Darbyshire, S.J., & Pavlick, L.E. (2007) *Festuca* L. In: M.E. Barkworth, K.M. Capels, S. Long, L.K. Anderton, & M.B. Piep, editors, *Flora of North America north of Mexico. Vol. 24 (pp. 389–443) Magnoliophyta: Commelinidae (in part): Poacea, part 1*. Oxford, UK: Oxford University Press.
- Morgan, A. (1998). The Chewings story. *TurfNews* 22(6):33-35.
- NTEP (National Turfgrass Evaluation Program). (2003). 1998 national fineleaf fescue test, 1999-2002 data. Final Rep. NTEP No. 03-9. USDA-ARS, Beltsville, MD.
- NTEP (National Turfgrass Evaluation Program). (2008). 2003 national fineleaf fescue test, 2004-07 data. Final Rep. NTEP No. 08-9. USDA-ARS, Beltsville, MD.
- NTEP (National Turfgrass Evaluation Program). (2014). 2008 national fineleaf fescue test, 2009-13 data. Progress Rep. NTEP No. 14-9. USDA-ARS, Beltsville, MD.
- NTEP (National Turfgrass Evaluation Program). (2018). 2014 national fineleaf fescue test, 2017 data. Progress Rep. NTEP No. 18-10. USDA-ARS, Beltsville, MD.
- Ruemmele, B.A., Wipff, J.K., Brilman, L., & Hignight, K.W. (2003). Fine-leaved fescue species. In: M.D. Casler & R.R. Duncan, editors, *Turfgrass biology, genetics, and breeding*. Wiley, New York. p. 129-174.
- Shildrick, J.P. 1984. Turfgrass manual. The Sports Turf Research Institute, Bingley, West Yorkshire, England.
- Stace, C.A. (2019). *New flora of the British Isles*. 4th ed. C & M Floristics Middlewood Green, Suffolk, United Kingdom.
- Stace, C.A., Al-Bermani, A.-K. K.A. & Wilkinson, M.J. (1992). The distinction between the *Festuca ovina* L. and *Festuca rubra* L. aggregates in the British Isles. *Watsonia*, 19, 107-112.

Turf Programs

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