

# Seed Identification Clues

Tall Fescue, Red Fescue, Six Weeks Fescue, Rattail Fescue, Perennial Ryegrass, Darnel,  
Yellow Nutsedge and Purple Nutsedge

Teaching & Training Committee Study Hall

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## *Festuca arundinacea* - tall fescue



### FLORET

**General shape:** lance-shaped, widest near mid-point, dorsal-ventrally compressed

**Size:** 5.0 – 9.0 (11.5) mm long x 1.5 – 1.75 mm wide

**Color:** straw color to light brown, sometimes green or purple tinged

**Lemma:** papery and coarsely granular with short stiff hairs near margins, veins, and near apex

**Palea:** papery and coarsely granular; +/- same length as lemma, with short stiff hairs along the keels

**Callus:** blunt, thick, often with an indentation on upper edge

**Awn:** up to 4.0 mm long

**Rachilla:** slender, round in cross-section with slightly flared disk at apex

### CARYOPSIS

**Shape:** oblong, oval, or ovate, dorsal-ventrally compressed

**Size:** 2.0 – 4.0 mm long x 0.9 x 1.6 mm wide

**Color:** brown, sometimes with purplish tinge

**Texture:** smooth to slightly rough

**Embryo:**  $\frac{1}{5}$  -  $\frac{1}{3}$  the length of caryopsis

**Endosperm:** solid

**Hilum:** linear, located in a longitudinal depression

Description based on Meyer (2021) and other sources listed under references. Images by D. Meyer and J. Effenberger

*Festuca rubra* – red fescue



**FLORET**

**Shape:** lance-shaped, widest near mid-point, dorsal-ventrally compressed

**Size:** 4.0 – 9.0 mm long x 1.0 – 1.5 mm wide

**Color:** straw color to light brown with green or purple tinge

**Lemna:** papery and smooth, glabrous or with short stiff or soft hairs near apex

**Palea:** papery, coarsely granular, slightly shorter than lemma, with short stiff hairs along the keels and short soft hairs near apex

**Callus:** blunt and thick

**Awn:** up to 4.5 mm long

**Rachilla:** slender, round in cross-section with flared disk at apex, +/- covered with short hairs

**CARYOPSIS**

**Shape:** narrowly oblong, oval, or obovate, dorsal-ventrally compressed

**Size:** 2.5 – 4.0 mm long x 1.0 – 1.5 mm wide

**Color:** reddish-brown, sometimes with purplish tinge

**Texture:** smooth to slightly rough, lemma and/or palea may be adherent

**Embryo:**  $\frac{1}{5}$  -  $\frac{1}{3}$  the length of caryopsis

**Endosperm:** solid

**Hilum:** linear, nearly as long as caryopsis, located in longitudinal depression

Description based on Meyer (2021) and other sources listed under references. Images by D. Meyer and J. Effenberger

## *Lolium perenne* – perennial ryegrass



### FLORET

**Shape:** oblong (sides mostly parallel the entire length) to lance-shaped, dorsal-ventrally compressed

**Size:** 3.5 – 9.0 mm long x 0.8 – 2.0 mm wide

**Color:** straw color, sometimes with greenish tinge

**Lemma:** papery and smooth, glabrous or with short stiff hairs near margins and apex

**Palea:** papery, +/- equal in length to lemma, coarsely granular in lower half transitioning to smooth and lustrous in upper half, with short stiff hairs along keels

**Callus:** blunt, narrow, glabrous

**Awn:** if present, short, straight, and attached slightly below apex

**Rachilla:** glabrous or with short hairs, flat, wide, strap-like, apex usually not expanded

### CARYOPSIS

**Shape:** dorsal-ventrally compressed, mostly oblong or elliptic

**Size:** (2.0) 3.0 – 5.5 mm long x 0.7 – 1.5 mm wide

**Color:** light to reddish-brown

**Texture:** smooth to slightly rough

**Embryo:**  $\frac{1}{5}$  -  $\frac{1}{3}$  the length of caryopsis

**Endosperm:** solid

**Hilum:** linear, nearly as long as caryopsis

Description based on Meyer (2021) and other sources listed under references. Images by D. Meyer and J. Effenberger.

## *Lolium temulentum* - darnel



### **FLORET**

**Shape:** lance-shaped to oval, not strongly dorsal-ventrally flattened - in lateral view, lemma side (dorsal) mostly flat, while palea side (ventral) arched (thickest near mid-point)

**Size:** 4.5 – 8.5 mm long x 1.5 – 3.5 mm wide

**Color:** straw color

**Lemma:** papery and smooth, glabrous or with a few short stiff hairs near apex

**Palea:** papery, slightly shorter, or longer than lemma, often transversely wrinkled, surface coarsely granular in lower two-thirds transitioning to smooth and lustrous in upper one-third, keels with short, stiff, blunt, or pointed hairs

**Callus:** blunt, narrow, glabrous; lemma indented above callus

**Awn:** up to 23 mm long, attached below tip of lemma, stout, broad base, short stiff hairs along awn margins

**Rachilla:** broad, flat, strap-like, apex not expanded, mostly glabrous

### **CARYOPSIS**

**Shape:** oval, dorsal-ventrally compressed

**Size:** (3.8) 4.0 – 7.0 mm long x (1) 1.5 – 3.0 mm wide

**Color:** reddish-brown

**Texture:** smooth to slightly rough

**Embryo:**  $\frac{1}{4}$  the length of caryopsis

**Endosperm:** solid

**Hilum:** linear

Images and description by D. Meyer (measurements based on Barkworth et al., 2007).

## Vulpia myuros – rattail fescue



### **FLORET**

**Shape:** narrowly lance-shaped

**Size:** 4.5 – 7.5 mm long x 0.4 – 0.6 (0.8) mm wide

**Color:** pale straw colored, +/- with purple tinge

**Lemna:** thin and papery, 5-veined, tapered into terminal awn, covered with short stiff hairs, and margins on upper half glabrous or with long ciliate hairs

**Palea:** membranous, +/- translucent, +/- equal to lemma length

**Awn:** 5.0 – 22.0 mm long

**Callus:** pointed and glabrous

**Rachilla:** thin cylindrical, generally 0.75 – 1.0 mm long, covered with very short stiff hairs

### **CARYOPSIS**

**Shape:** narrowly linear or spindle-shaped, dorsal-ventrally compressed, with deep longitudinal depression on palea (ventral) side

**Size:** 3.0 – 5.0 mm long x 0.4 – 0.6 (0.8) mm wide

**Color:** brown

**Texture:** smooth and glabrous, the lemma and palea +/- adherent

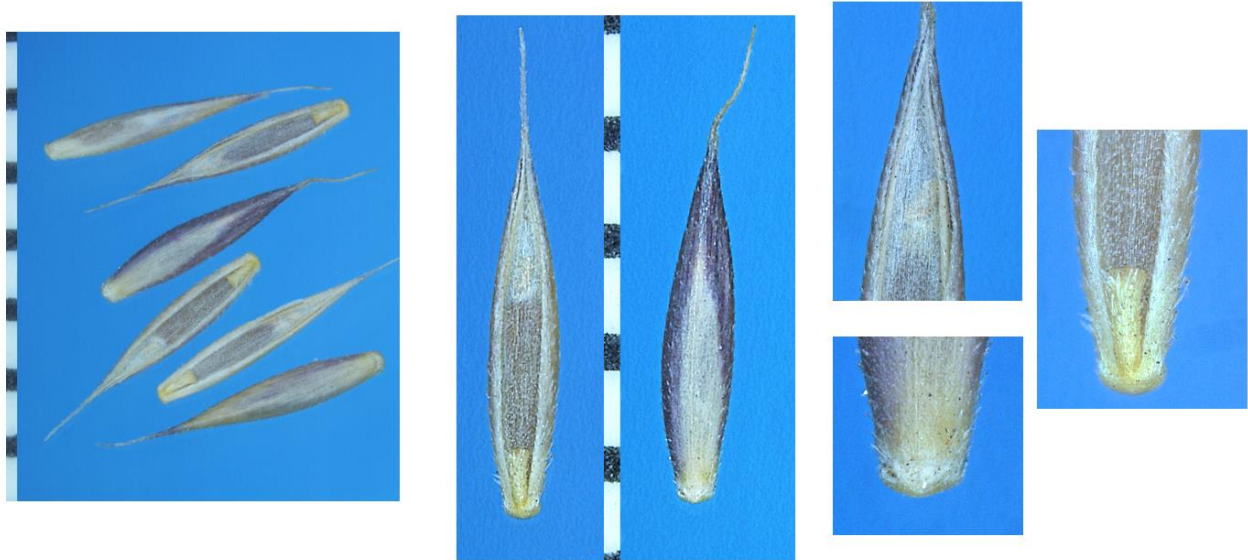
**Embryo:**  $\frac{1}{8}$  the length of the caryopsis

**Endosperm:** solid

**Hilum:** linear,  $\frac{2}{3}$  –  $\frac{3}{4}$  the length of the caryopsis, located in a longitudinal depression

Description based on Meyer (2021) and other sources listed under references. Images by D. Meyer and J. Effenberger. Description encompasses both forms of the species: *V. m.* forma *megalura* and *V. m.* forma *myuros*.

## *Vulpia octoflora* – six-weeks fescue



### **FLORET**

**Shape:** lance-shaped, widest near mid-point, dorsal-ventrally compressed

**Size:** 2.7 – 6.5 mm long

**Color:** straw color to light brown with purple tinge

**Lemna:** thin and papery, pubescent in upper one-third, glabrous or sparsely pubescent in lower two-thirds

**Palea:** thin and papery, semi-transparent (dark caryopsis visible through palea), slightly shorter than lemma, +/- hairy at apex, keels with short stiff to long pointed hairs

**Callus:** blunt, narrow, or slightly puffy

**Awn:** 0.3 – 9.0 mm long

**Rachilla:** slender, round in cross-section with flared disk at apex, +/- covered with short hairs, straw color to purple

### **CARYOPSIS**

**Shape:** narrowly oblong, dorsal-ventrally compressed

**Size:** 1.7 – 3.7 mm long

**Color:** reddish-brown

**Texture:** smooth to slightly rough, lemma and/or palea may be adherent

**Embryo:** 1/6 the length of caryopsis

**Endosperm:** solid

**Hilum:** linear, one-half the length of caryopsis

Images and description by D. Meyer (measurements based on Barkworth et al., 2007, and encompasses all three varieties, *V. o.* var. *glauca*, *V. o.* var. *hirtella*, and *V. o.* var. *octoflora*).

## *Cyperus* spp.

### *Cyperus esculentus* – yellow nutsedge



Achenes oblong, three-sided (triangular in cross-section, angles rounded), sides +/- equal in width, 1.0-1.5 mm long x 0.5-0.75 mm wide, light brown to amber, somewhat glossy, surface texture finely reticulate to bubbly. Embryo in lower quarter of achene, surrounded by mealy endosperm.

Rhizomes terminate with tubers (short, swollen, underground stem) that are irregularly round, 0.3-1.5 cm in diameter, brown to black, hard, smooth when fresh (hydrated) becoming wrinkled when dried. Scaly at nodes, but buds usually only at apex. Edible, almond flavored.

### *Cyperus rotundus* – purple nutsedge



Achenes oval, three-sided (triangular in cross-section, angles rounded), one side slightly wider than the other two, 1.5-2.0 mm long x 1.5 mm wide, dark grayish brown to nearly black, dull, surface texture finely reticulate to bubbly. Embryo in lower quarter of achene, surrounded by mealy endosperm.

Rhizomes develop chains of several tubers that are irregularly shaped to oblong or nearly round, up to 2.5 cm long and usually less than 1 cm in diameter. Buds scattered over entire surface. Bitter flavored.



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