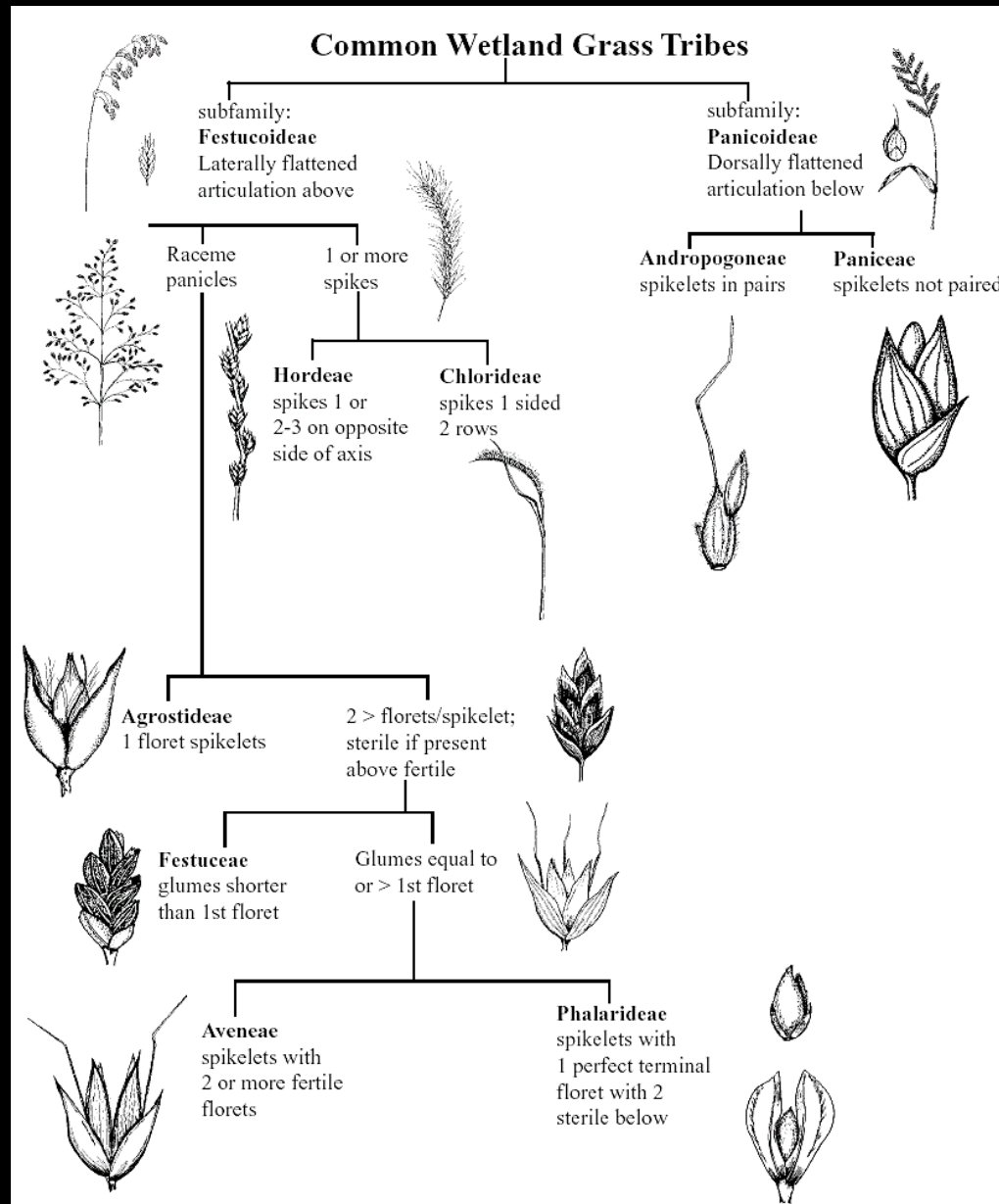
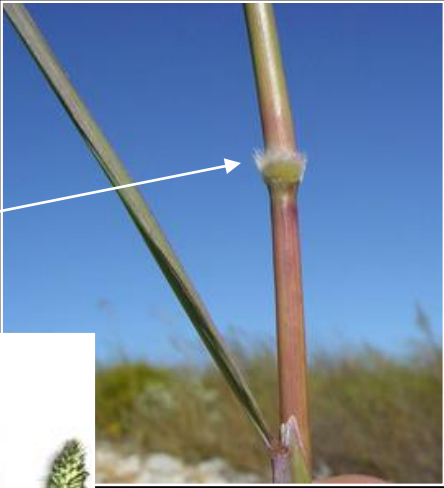


Key to the Common Wetland Delineation Grass Tribes



Joints or Nodes:

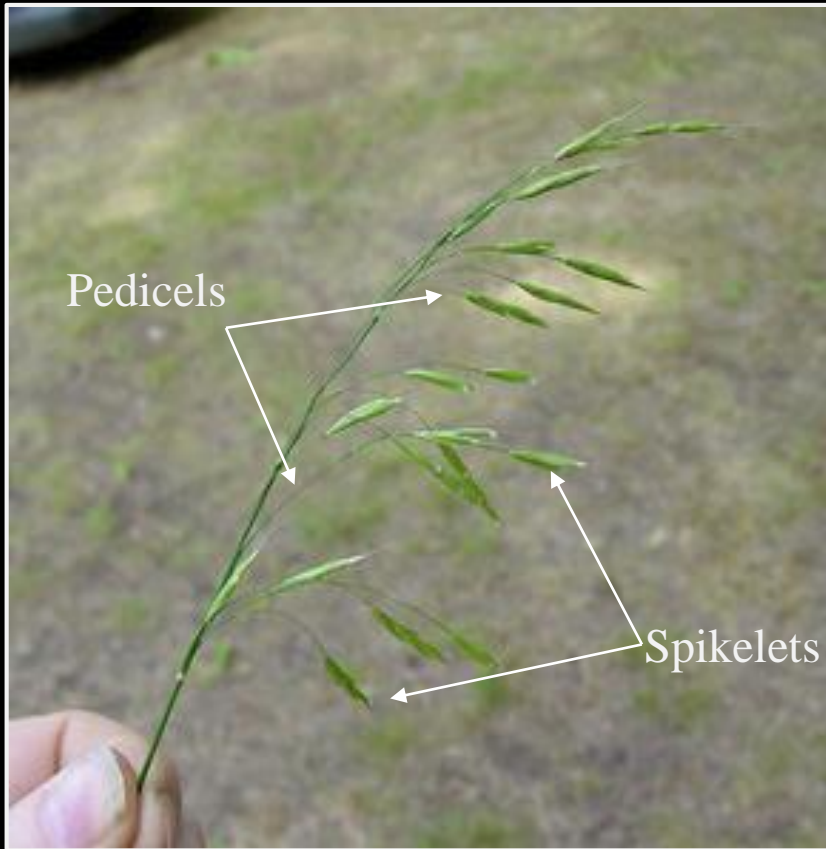


Ligules:

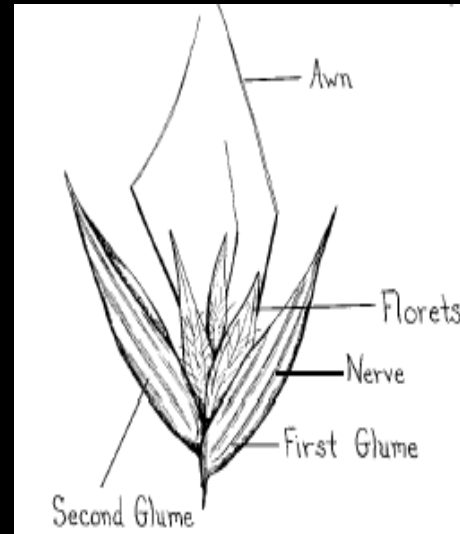


General Spikelet Morphology

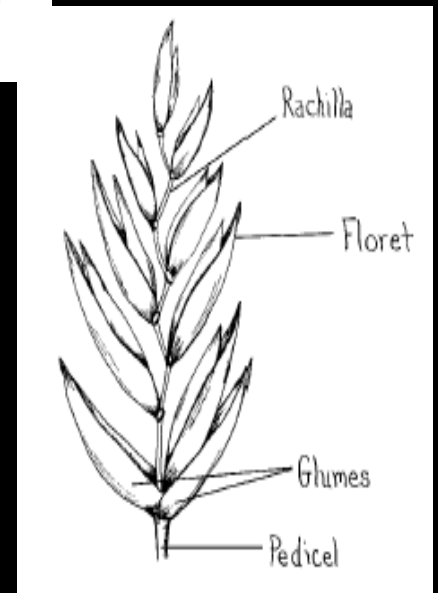
Inflorescence



Spikelets



1997 Carolina Biological Supply



1997 Carolina Biological Supply

Disarticulation: How Does an Inflorescence Fall Apart?

Festucoid Group:

Individual florets break off leaving two empty “rabbit ears” (glumes)



Walters & Southwick

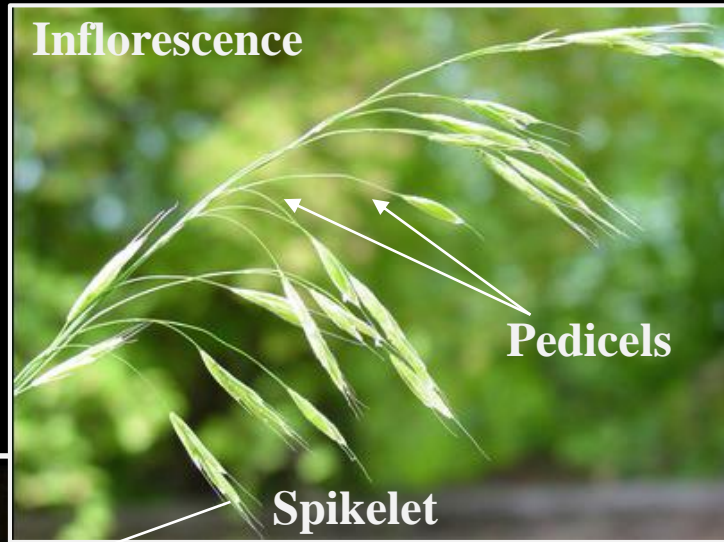
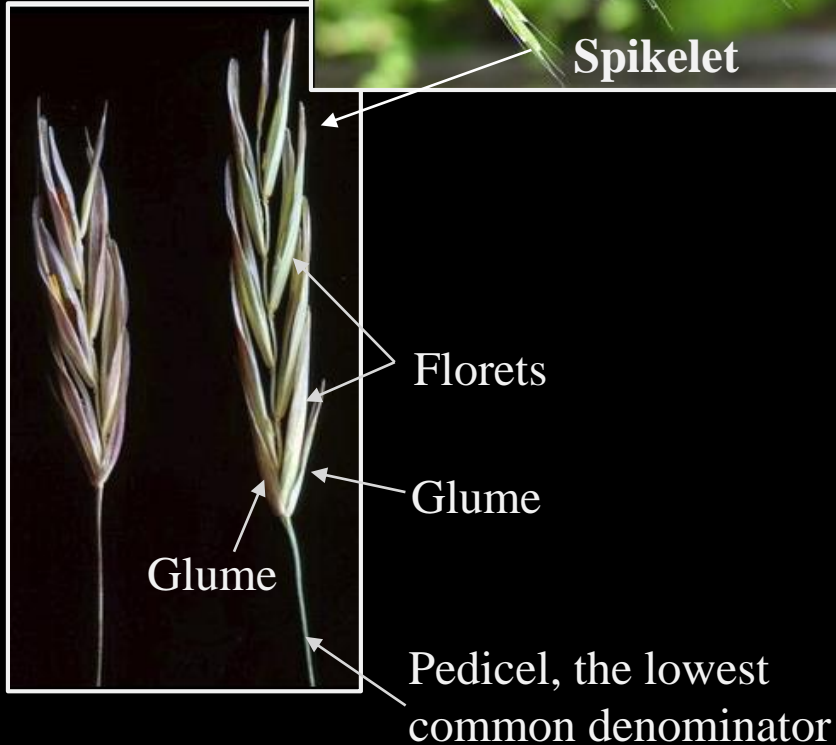
Panicoid Group:

Glumes and florets break off together leaving empty stems

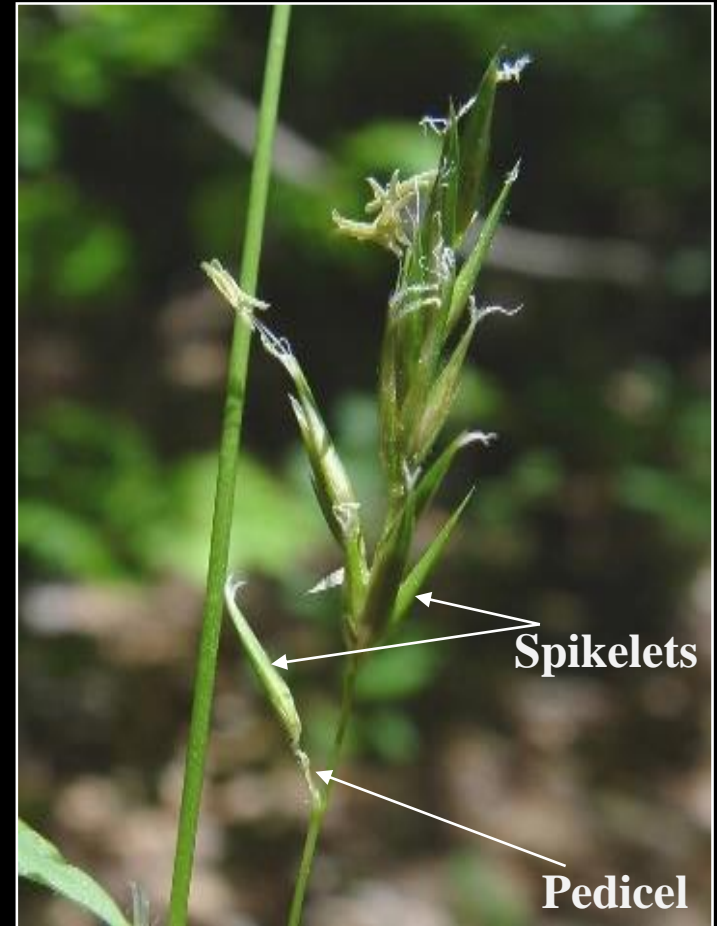


Festucoid Spikelet Morphology

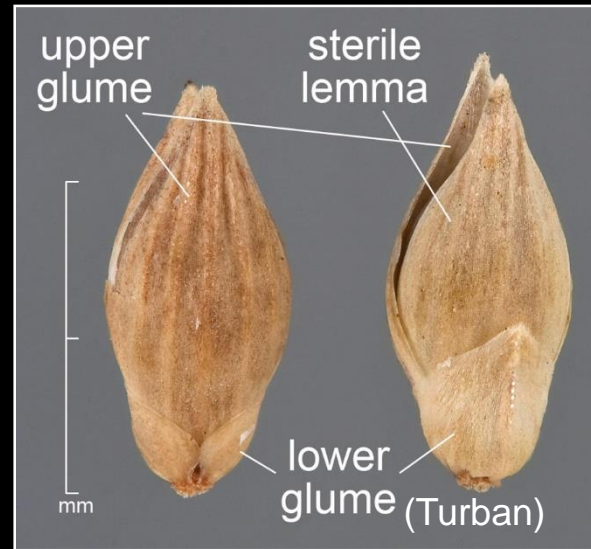
Bromus spp.



Anthoxanthum odoratum
Sweet Vernal Grass



Panicoid* Spikelet Morphology



Tribe Paniceae

Modified spikelet with two florets

- One fertile floret
- One sterile lemma

Festucoid Subfamily:

- **Flattened spikelets disarticulate*** above the glumes.
 - Individual florets break off and leave two empty glumes that look like rabbit ears



Panicoid Subfamily:

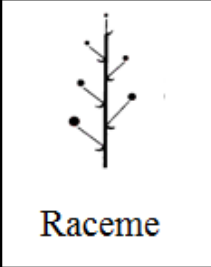
- **Rounded spikelets disarticulate*** below the glumes.
 - Glumes and florets break off together leaving empty stems



*Disarticulation = how the inflorescence falls apart (location shown by **red** dashes).

Racemes: Spikelets on branches.

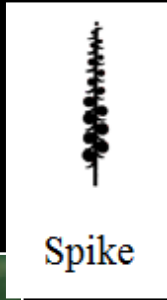
Branches may be very short.



Raceme

Spikes: Spikelets sit

directly on the stem, forming a spike.



Spike

Panicles: Spikelets on branches that

branch. Branches may be very short.



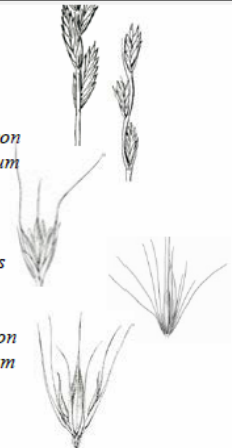
Panicle



Tribe Hordeae: the (Zigzag) Rye Tribe

Keys to Genera in the Tribe Hordeae

1. Spikelets single at each joint of the rachis (including modified bristles)
 2. Spikelets with flatwise towards the rachis, glumes present *Agropyron*
 2. Spikelets with edgewise towards the rachis, glumes absent *Lolium*
1. Spikelets commonly 2 or 3 at each joint of the rachis.
 3. Long bristled spikelets lacking at nodes *Elymus*
 3. Long bristles at rachis nodes representing modified spikelets
4. Lemmas 8-10 mm long *Sitanion*
4. Lemmas 5.5-8 mm long *Hordeum*



Lolium



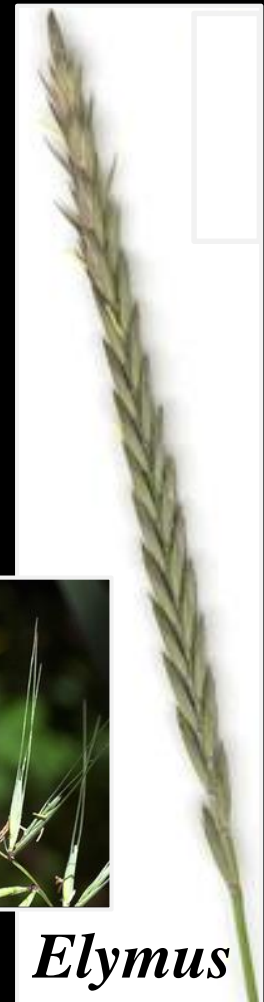
Hordeum



Leymus



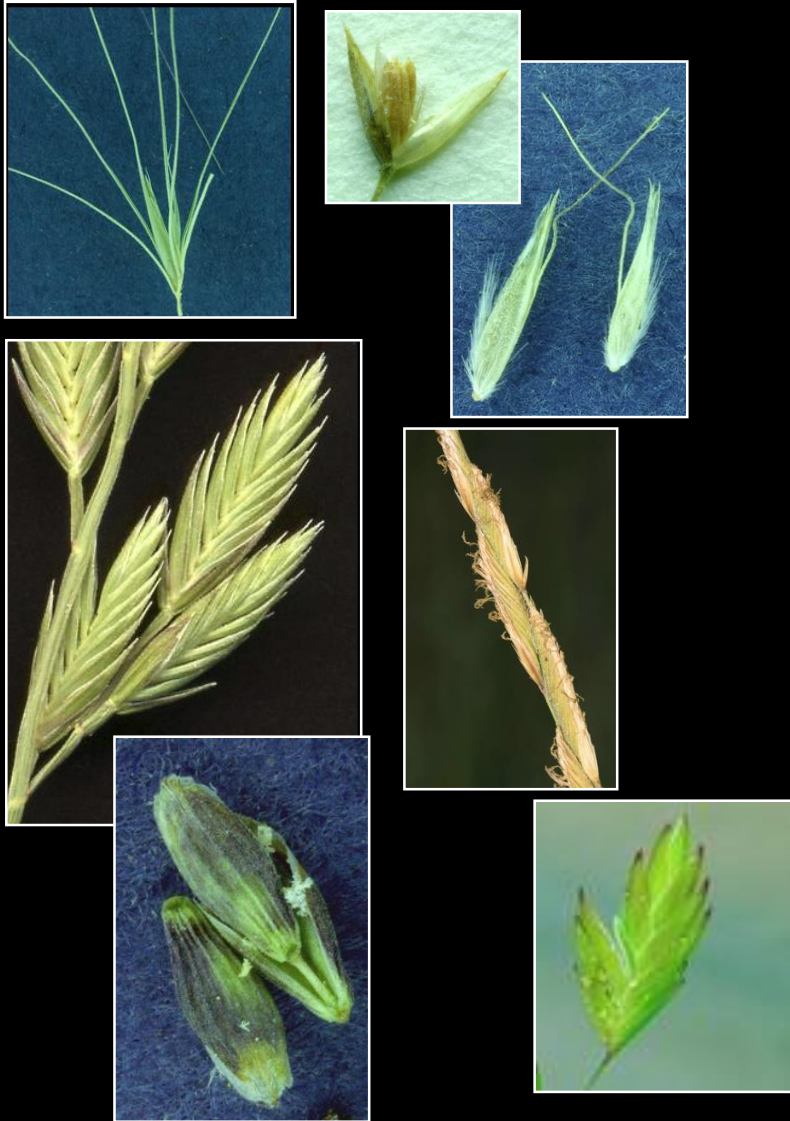
Elymus



Festucoid Subfamily:

Spikelets are flattened

Disarticulate above the glumes



Panicoid* Subfamily:

Spikelets are rounded, sometimes paired

Disarticulate below the glumes



*Panicoid photos by Walters & Southwick

Tribe Chlorideae: one-sided spikelets



Spartina



Beckmannia



Keys to Genera in the Tribe Chlorideae

1. Spikelets round-ish, glumes almost equal in length, tufted annual *Beckmannia*
1. Spikelets elongated, glumes unequal in length, perennials with rhizomes *Spartina*



Agrostideae Tribe: one floret per spikelet

Keys to Genera in the Tribe Agrostideae

1. Inflorescence a dense, symmetrical, spike like panicle

2. Glumes not awned *Alopecurus*

2. Glumes awned

3. Awn equal or less than glume..... *Phleum*

3. Awn 2 to 3 times as long as glumes..... *Polypogon*

1. Inflorescence a branched panicle, either open or contracted; glumes not awned (sometimes acuminate tipped).

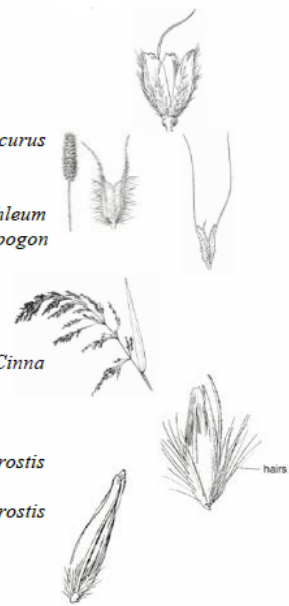
4. Panicle drooping..... *Cinna*

4. Panicle ascending to erect

5. Hairs at base of lemma half or greater the length of lemmas ..

..... *Calamagrostis*

5. Hairs of lemmas less than ¼ length of lemmas, or as short hairs on lemmas or lacking *Agrostis*



Phleum



Alopecurus

Calamagrostis



Agrostis



Cinna

Festuceae Tribe: Cold-season grasses with many florets per spikelet. First floret > tips of the glumes.

Keys to Genera in the Tribe Festuceae

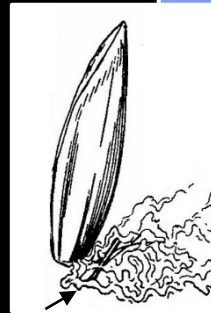
1. Panicle in dense 1-sided or with 1-sided branched clusters at the ends of 2 or 3 stiff, naked panicle branches *Dactylis*
1. Panicle not dense 1-sided clusters.
 2. Glumes dissimilar, the first narrow and pointed, the second wide and rounded *Sphenopholis*
 2. Glumes of similar size and shape.
 3. Base of lemmas, callus, or nerves bearded *Poa*
 3. Base of lemmas, callus or nerves glabrous but sometimes ciliate or minutely hairy, but not densely bearded.
 4. Spikelets strongly flattened, lemmas 1-3 nerved *Eragrostis*
 4. Spikelets slightly flattened to sub-round-ish, lemmas 3 or more nerved.
 5. Lemmas 3 – 7 nerved. Lowest 1 – 4 florets in each spikelet are sterile *Chasmanthium*
 5. All florets perfect.
 6. Lemmas 2-toothed (notched) at apex and often awned from the notch *Bromus*
 6. Lemmas not 2-toothed at apex and if awned then from terminal apex.
 7. Nerves of lemmas appearing parallel and not converging; lemmas never awned *Glyceria*
 7. Nerves of lemmas converging towards apex; lemmas often awned.
 8. Large perennials with a hardened base, wide (3 – 12 mm) flat leaves with hairy auricles, spikelets 5 – 10 mm long *Schedonorus*
 8. Smaller plants, annual or perennial.
 9. Spikelets with \geq six florets per spikelet. Annuals; awns of lemma shorter than or same length as lemma *Vulpia*
 9. Perennials with narrow leaves (2 – 3 mm wide) and inrolled margins *Festuca*



Poa



Bromus



Cobwebs on the floret

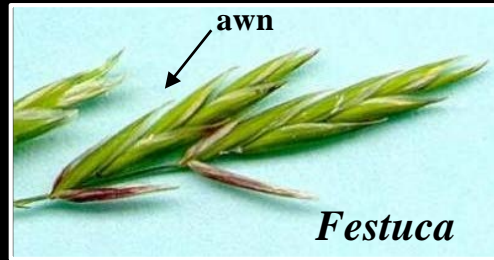


Dactylis

Glyceria- heavily veined



Schedonorus



Festuca



Phragmites



Tribe Aveneae: first floret \approx tips of the glumes

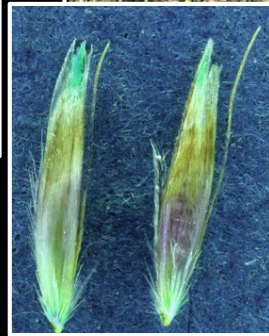
Trisetum



Avena



Deschampsia



Holcus



Keys to Genera in the Tribe Aveneae

- 1. Florets exceed the length of the glumes *Deschampsia*
- 1. Florets equal to or less than the glumes
 - 2. Lemmas with long twisted awn; plants not fuzzy *Danthonia*
 - 2. Lemmas with short hooked awn; plants fuzzy *Holcus*



Danthonia

Tribe Phalarideae: the sterile florets tribe

Keys to Genera in the Tribe Phalarideae

- 1. Glumes very unequal, the second twice as long as first *Anthroxanthum*
- 1. Glumes nearly equal *Phalaris*



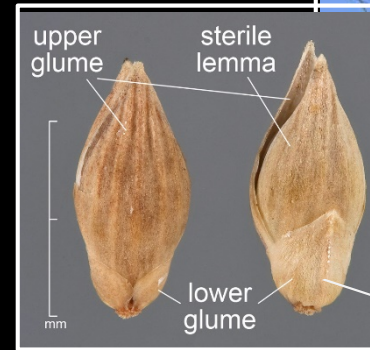
Paniceae Tribe: Warm-Season grasses round spikelets with turban wrap

Keys to Genera in the Tribe Paniceae

1. Inflorescence of 1-several solitary, digitate, or aggregated, spike-like racemes.
 - 2. Inflorescence of digitate spikes.....*Digitaria*
 - 2. Inflorescence of alternate spikes.....*Paspalum*
1. Inflorescence a branched panicle, either open or contracted.
 - 3. Panicle dense, symmetrical, and spike-like.
 - 4. Spikelets subtended by persistent bristles*Setaria*
 - 4. Spikelets not subtended by bristles. Second glume and sterile lemma awned; spikelets with coarse hairs.....*Echinochloa*
 - 3. Panicle open with spreading or ascending branches.
 - 5. Fertile lemma thick, leathery and hardened.
 - 6. Blades of basal leaf blades different shape than cauline and forming basal rosette; primary panicle terminal with secondary in axils*Dichanthelium*
 - 6. Blades of leaves similar and not forming basal rosette; panicle terminal*Panicum*
 - 5. Sterile palea and fertile lemma thick, leathery, hardened.....*Steinchisma*



Panicum



Turban

photo by Walters and Southwick



Digitaria



Paspalum



Setaria



Echinochloa



Dichanthelium

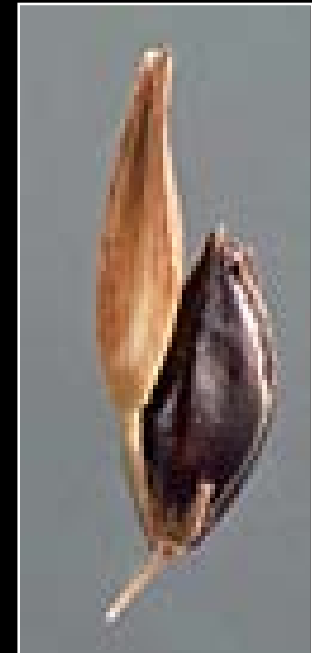


Panicoid* Spikelet Morphology (continued)

Tribe Andropogoneae

Spikelets in pairs

- One fertile
- One sterile on a pedicel



Tribe Andropogoneae: Paired Spikelets

Keys to Genera in the Tribe Andropogoneae

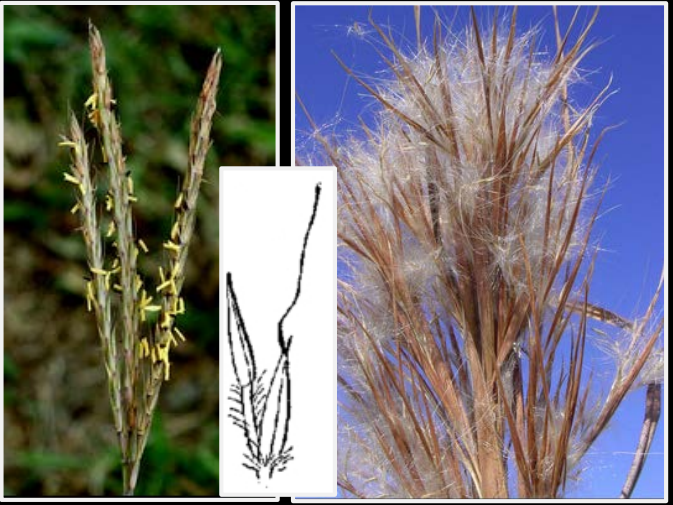
1. Wide, heart-shaped leaf base that clasps stem..... *Arthraxon*
1. Narrow to wide linear or lanceolate leaves.
 2. Paired spikelets, both perfect.
 3. Small (< 1 m) lax, straggling plants; leaves with a wide silver stripe.....*Microstegium*
 3. Large (1 – 6 m), erect plants; leaves lacking a wide silver stripe.....*Saccharum*
 2. Paired spikelets; one perfect, the other staminate or absent.
 4. Inflorescence of 1-several solitary, digitate, or aggregated, spike-like racemes...*Andropogon*
 4. Inflorescence an open panicle and not digitate.
 5. Paired spikelets, one perfect, the other staminate..... *Sorghum*
 5. Paired spikelets, one perfect, the other a hairy pedicel..... *Sorghastrum*



Sorghastrum



Andropogon



Sorghum

Microstegium

