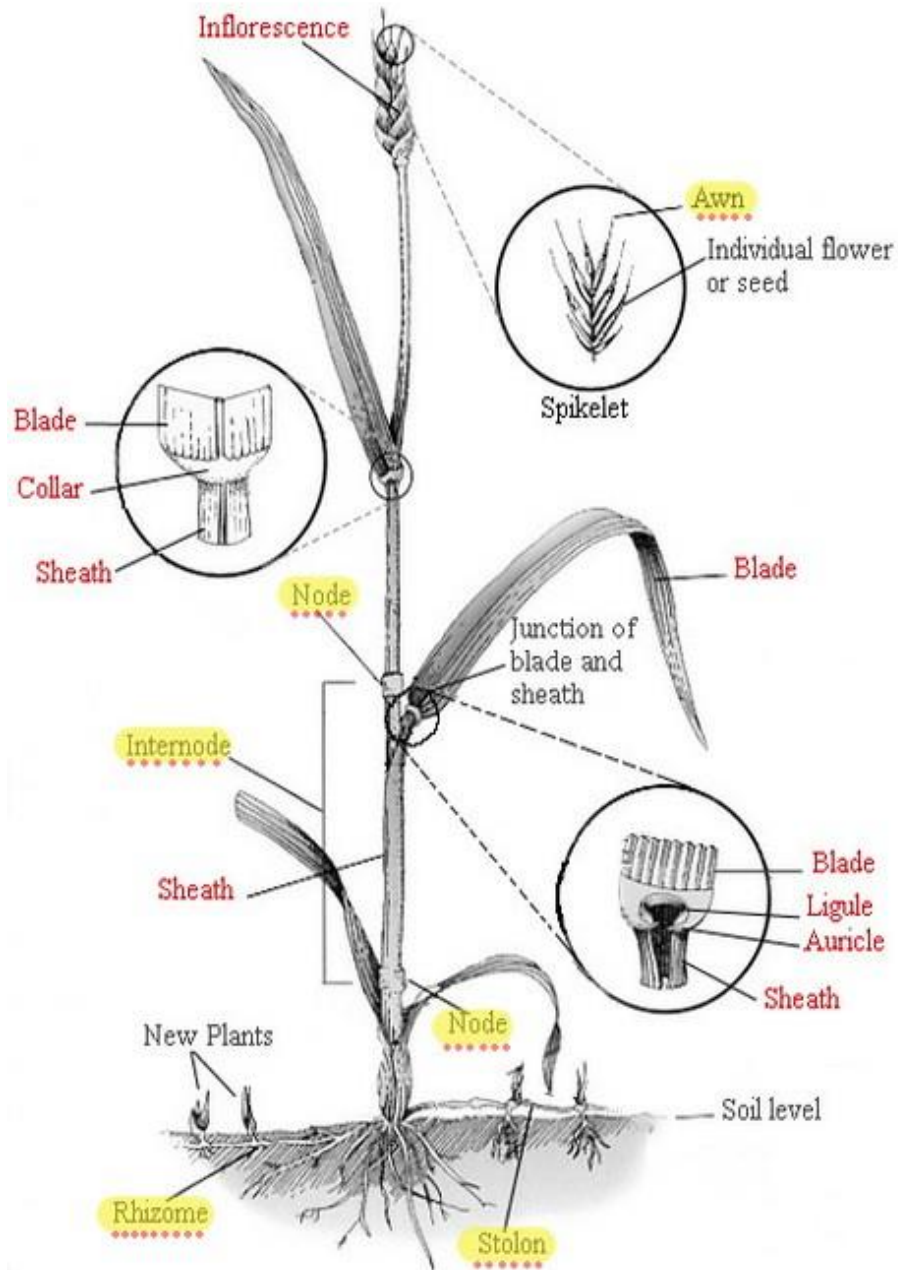
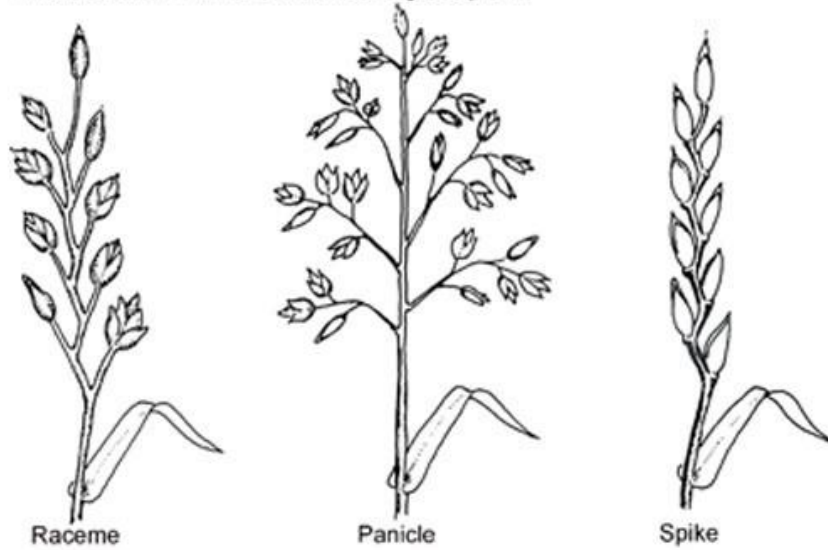


Structures Used to Identify Grasses

Source: Penn State Extension



Inflorescence: Flower structure of a grass plant.



Blade: The leaf of a grass plant. The expanded, usually green part of a leaf that extends from the sheath.

Flat, Pointed at Tip



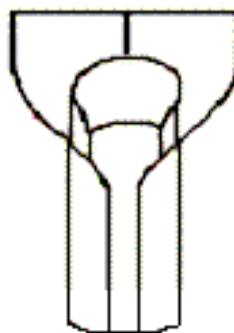
Flat, Rounded at Tip



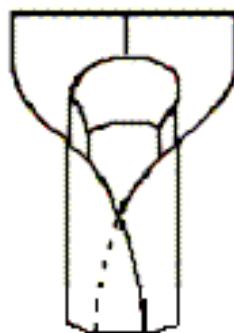
V-shaped or Folded, Boat Shaped at Tip



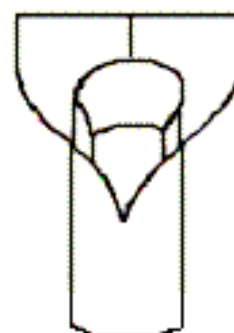
Sheath: Base portion of the grass leaf that wraps around the stem



Split or Open

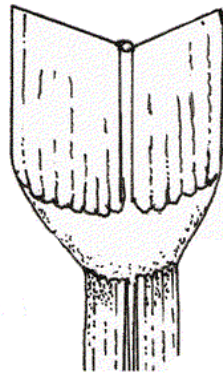


Overlapping

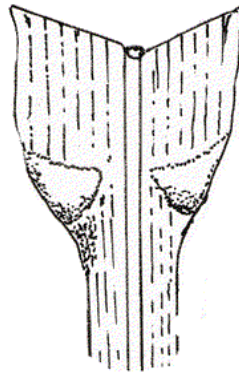


Closed or United

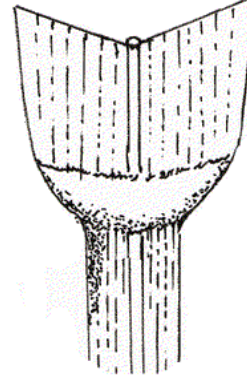
Collar: Region of junction between blade and leaf sheath of grasses.



Broad



Divided



Narrow

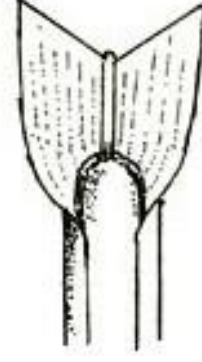
Auricle: An earlike lobe at the base of leaf blades of certain grass species adjacent to the collar between the blade and the sheath.



Overlapping



Short

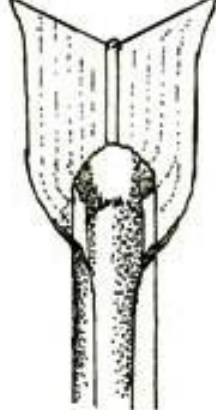


None

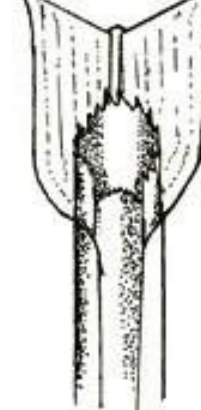
Ligule: A thin membrane or fringe of hairs at the junction of a leaf blade and sheath of grasses.



Fringe of Hairs



Membrane, Rounded at Top



Membrane, Toothed at Top

Grass Identification Matrix

Recommended if you are familiar with grass structures.

Common Grasses Found in Pennsylvania Hay and Pasture Fields									
Grass Species	Life Cycle Plant Height	Sheath	Blade	Collar	Auricles	Ligule	Stem	Inflor-escence	Comments
Barnyard grass <i>Echinochloa muricata</i> Beauv.	Annual 1-3 ft	Over-lapping	1-15mm wide. Flat with rough edges.	Broad	None	None	Round and branching at nodes.	Panicle of spike-like branches.	Found in late summer/ early fall. Seed structures purplish and covered with short stiff bristles.
Bermudagrass <i>Cynodon dactylon</i> L.	Perennial/ Annual 1-2 ft	Papery	8-15 mm wide. Hairy on top and bottom.	Narrow	None	Fringe of hairs	Prostrate and upright	3-7 spiked branches originating from a single whorl.	Spreads by both stolons and rhizomes. Found as a perennial only in very southern PA and further south.
Big Bluestem <i>Andropogon gerardii</i> Vitman	Perennial 7-9 ft	Split, hairy	10-14mm wide. Smooth with fringe of hairs at junction of blade and sheath.	Narrow	None	Short membrane	Round and upright	Raceme, red in color.	Stems purplish at base. Awns in seed clusters makes inflorescence look hairy.
Crabgrass (Large) <i>Digitaria sanguinalis</i> L.	Annual 2-3 ft	Over-lapping	5-12 mm wide. Rough edges with hairs on both sides. Red-purple color.	Broad and divided	None	Membrane. Rounded at top	Upright to prostrate	3-10 spiked branches in whorls at top of stem.	Found in late summer/ early fall.
Crabgrass (Smooth) <i>Digitaria ischaemum</i> L.	Annual 1-2 ft	Over-lapping	5-12mm wide with no hairs on either side. More purplish than Large Crabgrass	Broad and divided	None	Membrane. Rounded at top	Upright to prostrate	3-10 spiked branches in whorls at top of stem.	Found in lawns or heavily grazed pastures in late summer/ early fall.
Fall panicum <i>Panicum dichotomiflorum</i> Michx.	Annual 1-4 ft	Over-lapping	10-20 mm wide. Smooth or sparsely hairy near base	Broad	None	Fringe of hairs	Upright to prostrate	Fine, wide-spreading panicle	Found in late summer/ early fall.

Common Grasses Found in Pennsylvania Hay and Pasture Fields

Grass Species	Life Cycle Plant Height	Sheath	Blade	Collar	Auricles	Ligule	Stem	Inflor-escence	Comments
Giant foxtail <i>Setaria faberi</i> .	Annual 3-6 ft	Over-lapping. Edges are hairy	10-20 mm wide. Hairy on top and smooth on bottom.	Broad and hairy on edges	None	Fringe of hairs	Round and upright	Spike-like panicle, bristly, drooping	Inflorescence bushy like a fox's tail. Hairy blade is key to identification.
Green foxtail <i>Setaria viridis L.</i>	Annual 1-3 ft	Over-lapping. Edges are hairy	5-12 mm wide. Not hairy on top or bottom.	Broad and sometimes hairy	None	Fringe of hairs	Round and upright	Spike-like panicle, bristly	Inflorescence bushy like a fox's tail and slightly purple in color. No hairs on leaves.
Italian ryegrass <i>Lolium italicum Parn.</i>	Annual to Perennial 1-2 ft	Over-lapping	2-6 mm wide. Flat and pointed at tip. Waxy.	May be divided	Overlapping	Membrane. Rounded at top	Round-to-flat	Slender stiff spike with awns.	Bunchgrass with waxy leaves that are shiny. Spikelet edge against stem.
Kentucky bluegrass <i>Poa pratensis L.</i>	Perennial 1-2 ft	Split	2-5 mm wide. Boat-shaped tip.	Broad	None	Very short membrane.	Round-to-flat	Fine panicle	Sod-grass (short rhizomes) dark green. Invades overgrazed pastures.
Nimblewill <i>Muhlenbergia schreberi Gmel.</i>	Perennial 1-2 ft	Split and over-lapping	2-4 mm wide. Rough on top with hairs behind ligule.	Narrow	None	Short membrane	Mostly prostrate	Many fine, slender panicles.	Sod-forming (stolons). Flowers in late summer to early fall.
Orchardgrass <i>Dactylis glomerata L.</i>	Perennial 1-3 ft	Split	5-12 mm wide. V-shaped at base, flat and pointed at tip.	Broad and divided	None	White membrane, pointed at top	Flat	Course panicle.	Bunchgrass. Light green in color.
Perennial ryegrass <i>Lolium perenne L.</i>	Perennial 1-2 ft	Over-lapping	2-6 mm wide. Folded in shoot V-shaped, Waxy	Narrow, may be divided	Short	Membrane, toothed at top	Round-to-flat	Slender stiff spike. No awns.	Short growing bunchgrass with waxy leaves that are shiny. Spikelet placed with edge against stem.
Quackgrass <i>Elytrigia repens.</i>	Perennial 1-3 ft	Over-lapping with hairs	5-10 mm wide. Slightly hairy on upper surface.	Broad and divided	Long-clasping	Short membrane	Round	Slender stiff spike	Sod forming with prominent fast spreading rhizomes. Spikelet flat against stem.

Common Grasses Found in Pennsylvania Hay and Pasture Fields

Grass Species	Life Cycle Plant Height	Sheath	Blade	Collar	Auricles	Ligule	Stem	Inflor- escence	Comments
Red top <i>Agrostis gigantea</i> <i>Roth</i>	Perennial 1-3 ft	Over- lapping	2-7 mm wide. Flat.	Broad and V- shaped.	None	Tall membrane	Round	Panicle. Rust colored at maturity.	Sod-grass (short rhizomes). Prominent ridges on upper surface of blade.
Reed canarygrass <i>Phalaris</i> <i>arundinacea</i> L.	Perennial 1-6 ft	Over- lapping	10-20 mm wide. Flat with rough edges.	Narrow and continuous. Yellow.	None	Prominent membrane	Round	Panicle	Sod forming (prominent rhizomes.)
Smooth bromegrass <i>Bromus inermis</i> L.	Perennial 1-3 ft	Closed	4-12 mm wide. Flat and pointed at tip.	Narrow and divided	None	Short membrane	Round	Large panicle, often drooping	Young plants may have pubescence on sheath. Rhizomes covered with brown papery scales.
Switchgrass <i>Panicum virgatum</i> L.	Perennial 3-8 ft	Split, with hairy margin	7-14 mm wide. Hairy on top.	Broad, often with hairs.	None	Fringe of short hairs	Round and upright	Large panicle	Leaves covered with hairs. Spreads by rhizomes.
Tall Fescue <i>Festuca</i> <i>arundinacea</i> Schreb.	Perennial 1-3 ft	Over- lapping	5-10 mm wide. Dark green. Very rough edges	Broad and divided. Wrinkled on edges	Blunt with few hairs	Short membrane	Round	Spreading panicle	Bunchgrass. Prominently veined, leathery, dark green leaves with rough edges.
Timothy <i>Phleum pretense</i> L.	Perennial 2-3 ft	Over- lapping	4-12 mm wide. Flat and pointed at tip	Broad and continuous	None	White membrane with two notches	Round	Spike-like panicle	Bunchgrass with corms (onion-like bulb at base of stem)
Witchgrass <i>Panicum capillare</i> L.	Annual 1-3 ft	Over- lapping	8-15 mm wide. Hairy on top and bottom	Narrow	None	Fringe of hairs	Round and upright	Large panicle	Leaves covered with hairs. Large panicle often breaking off of stem.
Yellow foxtail <i>Setaria glauca</i> .	Annual 1-3 ft	Over- lapping, not hairy	5-10 mm wide. Hairy only on top near base of blade.	Broad and hairy on edges	None	Fringe of hairs	Round and upright	Spike-like panicle, bristly	Inflorescence is bushy like a fox's tail. Hairs only on upper surface of blade near base.

Glossary

Annual: A plant that completes its life cycle and dies within a year.

Awn: A bristle characteristic of the spikelets in some grasses.

Bunchgrass: Plant has no stolons or rhizomes and consequently grows in a bunch rather than spreading.

Inflorescence: Flower structure of a grass plant.

Node: A joint where a leaf is or was attached to a stem.

Panicle: A type of flower in which the flower clusters are attached to the stem via branches connected to branches off the stem.

Perennial: A plant that lives through three or more seasons.

Prostrate: Growing flat along the ground.

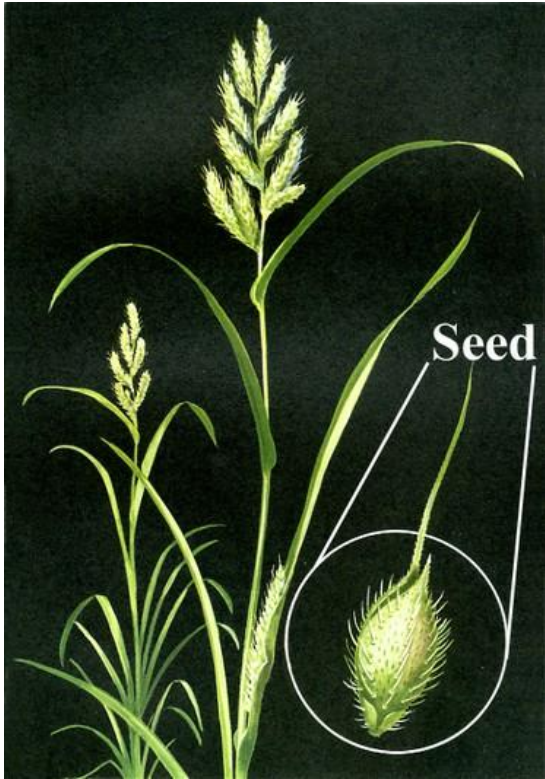
Raceme: A type of flower in which the flower clusters are attached to the stem via branches.

Rhizome: A stem that grows horizontally along the ground surface and may form adventitious roots at the nodes.

Sheath: Base portion of the grass leaf that wraps around the stem.

Spike: A type of flower in which the flower clusters are attached directly to the stem.

Stolon: A stem that grows horizontally along the ground surface and may form adventitious roots and a new plant at the nodes.

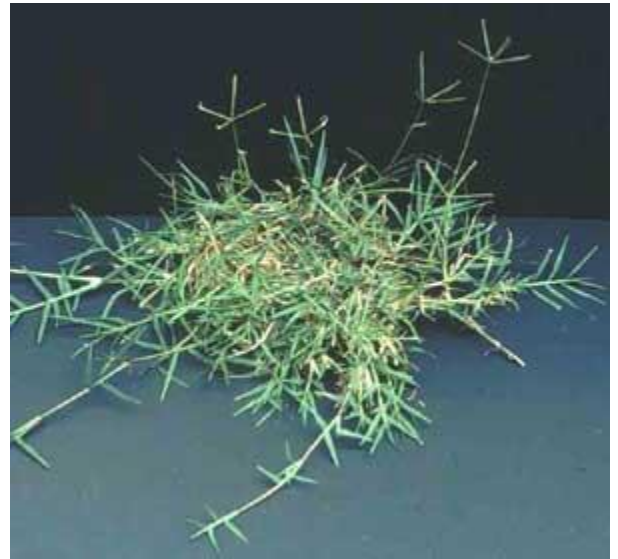


Barnyardgrass – Whole plant



UC Statewide IPM Project
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Barnyardgrass – Flower



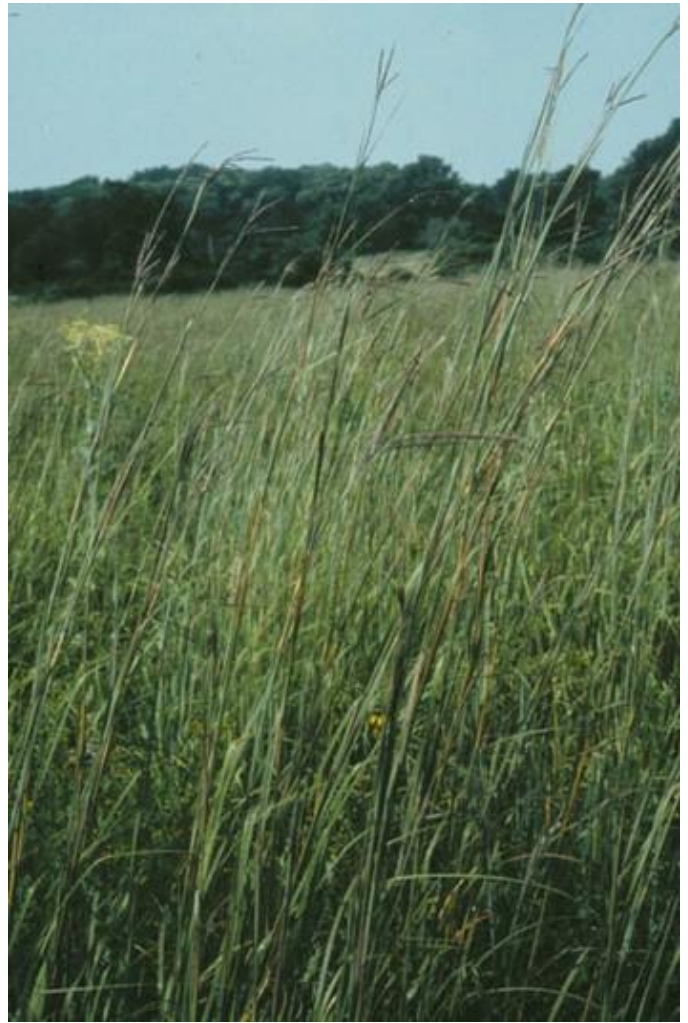
Bermudagrass – Whole plant



Barnyardgrass – Stem



Bermudagrass – Flower



Big Bluestem – Whole plant



Bermudagrass – Stolons



Big Bluestem – Flower



Large Crabgrass – Whole plant



Large Crabgrass – Ligule



Smooth Crabgrass – Whole plant



Smooth Crabgrass – Leaves



Fall Panicum – Whole plant



Smooth Crabgrass – Flower



Fall Panicum – Ligule



Fall Panicum – Flower



Giant foxtail
Setaria magna
Photo by A. Murray
Copyright 2001 Univ. Florida

Giant Foxtail – Whole plant



Giant foxtail
Setaria magna
Photo by A. Murray
Copyright 2001 Univ. Florida

Giant Foxtail – Flower



Giant foxtail – Plant and flower



Italian ryegrass (with clover) – Whole plant



Green foxtail – Sheath, collar, and ligule



Italian ryegrass – Flower



Green foxtail – Flower



Kentucky Bluegrass – Whole plant



Kentucky Bluegrass – Ligule



Kentucky Bluegrass – Leaf



Kentucky Bluegrass – Flower



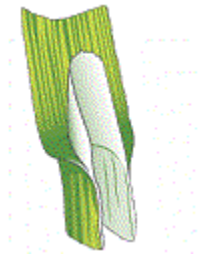
Nimblewill – Whole plant



Orchardgrass – Whole plant



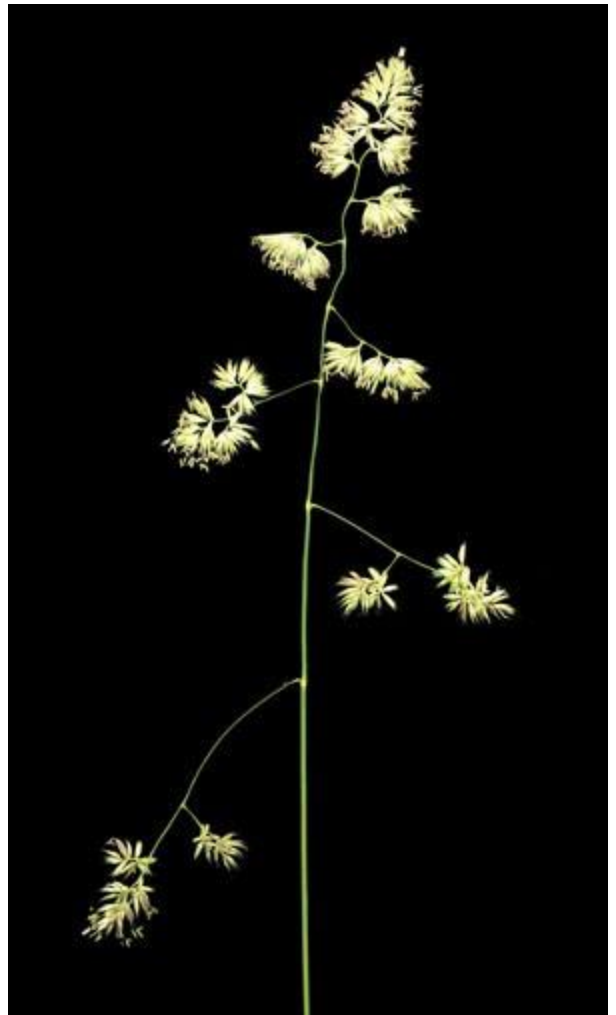
Nimblewill – Flower



Orchardgrass – Ligule



Orchardgrass – Stem



Orchardgrass – Flower



Orchardgrass – Collar



Perennial Ryegrass – Whole plant



Perennial Ryegrass – Flower



Perennial Ryegrass – Auricles



Perennial Ryegrass – Spikelet



Quackgrass – Plants



Quackgrass – Flower



Quackgrass – Rhizome



Quackgrass - Auricles



Red Top – Whole plant



Red Top – Ligule



Reed Canarygrass – Whole plant



Red Top – Flower



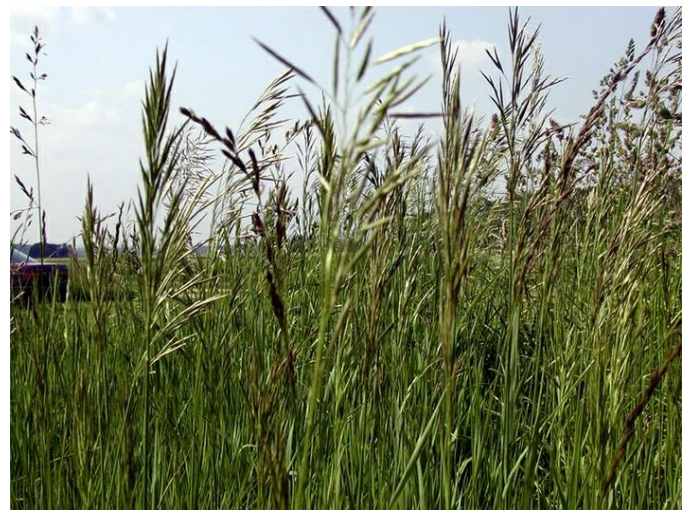
Reed Canarygrass – Leaf



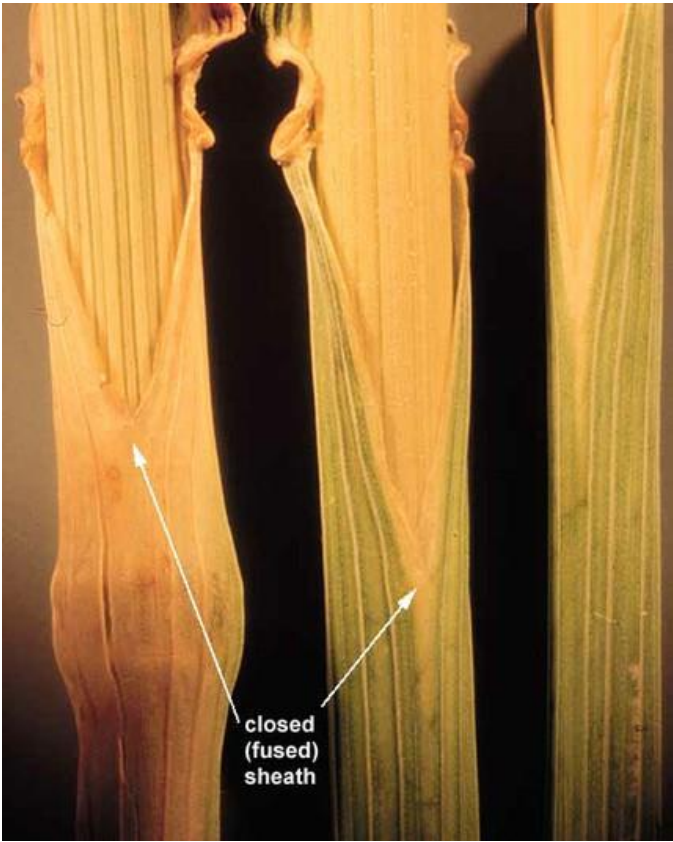
Reed Canarygrass – Flower



Reed Canarygrass – Ligule



Smooth Bromegrass – Whole plant



Smooth Bromegrass – Sheaths



Smooth Bromegrass – Flower



Switchgrass – Whole plant



Tall Fescue – Whole plant



Switchgrass – Flower



Tall Fescue – Blade



Tall Fescue – Auricles



Timothy – Whole plant



Tall Fescue – Flower



Timothy – Collar



Timothy – Flower



Timothy – Corms



Witchgrass – Whole Plant



Witchgrass – Flower



Witchgrass – Sheath



Yellow Foxtail – Whole plant



Yellow Foxtail – Leaf Blade



Yellow Foxtail – Flower