

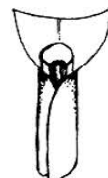
#### SHEATH MARGINS



SPLIT



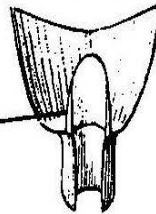
CLOSED



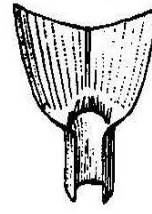
SPLIT-OVERLAPPING

#### LIGULES MAY BE

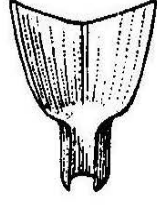
Membranous



Hairy



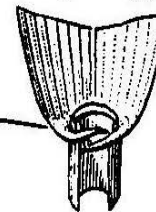
Absent



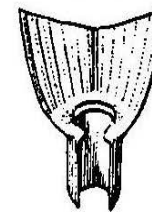
LIGULE

#### AURICLES MAY BE

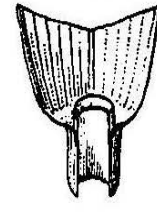
Long-Clawlike



Short - Stubby



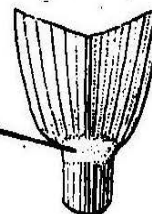
Absent



AURICLES

#### COLLARS MAY BE

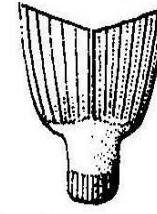
Continuous



Divided



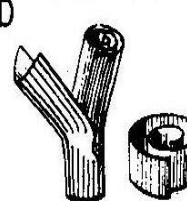
Broad or Narrow



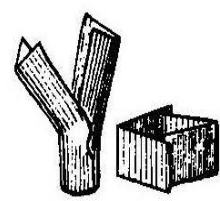
COLLAR

#### LEAFBUDS MAY BE

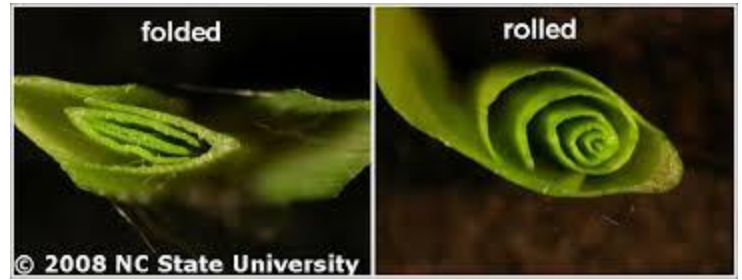
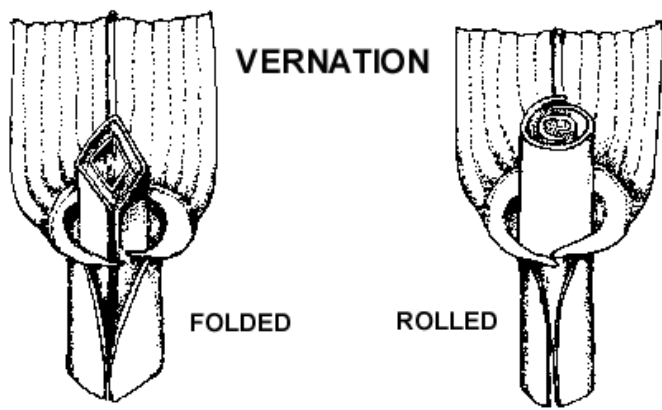
Rolled in the Bud



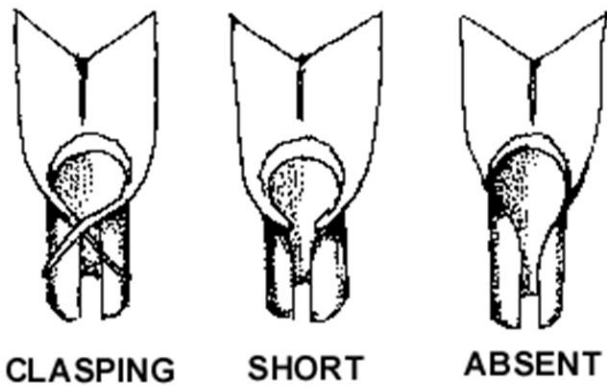
Folded in the Bud



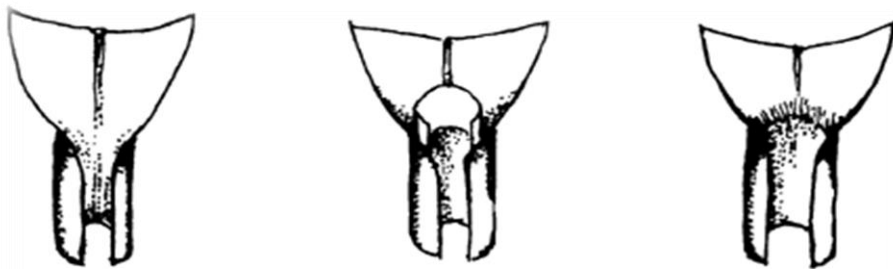
LEAFBUD



## AURICLE CONFIGURATION



## LIGULE TYPES



## Rolled Vernation

### A. Auricles usually present, and may be conspicuous/prominent

- *Pointy auricles*; plentiful *rhizomes*; leaves often have a *blue-green color*, with *rough edges* and *pointy leaf tip*; leaf sheaths may be fuzzy in spring; may have w-shaped “watermark” band on leaf blade .....**quackgrass**
- *Blunt auricles* with short hairs; *surface of upright-growing leaves shows strong venation/ribbing*; *leaf edges rough*; very short, inconspicuous membranous ligule; base of leaf sheaths may be slightly purple; often *grows in clumps* in bluegrass lawns .....**tall fescue**
- *Pointy auricles*, without hairs; *light green leaves*, with *smooth margins/edges* and *coarsely-ribbed surface*; leaf tips often shred when mowed; grows as a *bunch grass*.....**annual (Italian) ryegrass**

### AA. Auricles not present or apparent

- B. Ligule absent; summer annual; older plants (mid- to late summer) form radial stems growing flat on the ground when mowed; most common in new lawns.....**barnyardgrass**

### BB. Ligule is a fringe of hairs

- *Rhizomes and stolons present*; *leaves bend at right angle* where blade is attached to sheath; *long hairs often present on leaf blade surface*; internode spacing very regular and short. A *warm-season grass* that turns green late in spring and becomes brown with first hard fall frost; often forms a thick, puffy thatch layer. ....**zoysiagrass**
- Vernation may appear “rolled”, but is actually FOLDED; *conspicuous, aggressive rhizomes AND stolons*; *surface of leaf blade usually not hairy, except at base*. Internode spacing often irregular. ....**bermudagrass**
- Forms *long stolons*; soft, *gray-green foliage* *USUALLY covered with short hairs* (but some cultivars are nearly hairless); warm-season species; grows in patches; forms *burr-like flowers/seeds* close to soil surface .....**buffalograss**
- Bunch-type growth when young; older plants (mid/late summer) form dense, flat mat on ground when mowed; bristly seedhead.....**foxtail**

### BBB. Ligule is a membrane

#### C. Wider leaf blades (>3/16-1/4 inch); *spreads (by rhizomes) to form patches*

- *Tall, conspicuous ligule, with rounded tip*; forms *rhizomes*; veins prominent on leaf surface; *leaf blade margins/edges rough*; grass creeps, forming diffuse (not dense) patches.....**redtop**
- Inconspicuous, short ligule; forms *strong rhizomes*; grass creeps, forming large diffuse patches; *leaf sheath is closed at top, forming a “V”*; watermark (M or W) may be present on leaf blades .....**smooth brome**

#### CC. Wider leaf blades (>3/16-1/4 inch); *bunch-type growth, but may form large clumps/patches*

- *Surface of upright-growing leaves shows strong venation/ribbing*; *leaf edges rough*; very short, inconspicuous membranous ligule; base of leaf sheaths may be slightly purple; often *grows in clumps* in bluegrass lawns .....**tall fescue**
- Base of plant swollen or bulbous; *blue-green leaves with rough margins*; *tall, conspicuous, white toothed ligule*; *upright, bunch-type growth habit*.....**timothy**
- Seedlings/young plants grow upright; mowing quickly causes plants to form a *dense, prostrate mat*, with stems radiating from the center and lying flat on the ground; *digitate seedheads* formed in summer; warm-season weedy grass .....**crabgrass**

#### CCC. Leaves very fine and soft (less than 1/8 inch wide; often much finer); forms patches by spreading stolons

- *Long stolons*; *tall, white, conspicuous ligule*; fine, soft leaves often *blue-green* in color; *forms dense patches* in lawns .....**creeping bentgrass**
- *Weak, short stolons*, short, white, flat-topped ligule; darker green color .....**colonial bentgrass**

## Folded Vernation

### A. Auricles usually present

Auricles short/blunt; *leaf underside very shiny; leaf surface NOT shiny, with distinct veins/ribbing*; ligule short and inconspicuous; *base of leaf sheath often purple/wine-colored* ..... **perennial ryegrass**

### AA. Auricles not present

B. *Ligule a fringe of hairs*; vernation may appear “rolled”; *conspicuous, aggressive rhizomes AND stolons; surface of leaf blade not hairy, except at base* ..... **bermudagrass**

BB. Membranous ligule VERY short, difficult to see (may appear absent)

C. Leaves *very narrow and bristle-like* (1-2 mm wide)

- Short rhizomes present.....**creeping red fescue**
- Rhizomes absent.....**Chewings, hard, or sheep fescue**

CC. Leaf blades wider, not bristle-like

- Smooth upper leaf surface, except for conspicuous midrib; close examination will reveal *light “line” on either side of midrib*; “boat-shaped” leaf tip; strong rhizome growth.....**Kentucky bluegrass**
- *Underside of leaf very shiny; leaf surface NOT shiny, with distinct veins/ribbing*; ligule short and inconspicuous; *base of leaf sheath often purple/wine-colored* ..... **perennial ryegrass**

BBB. Membranous ligule is easily visible, and may be prominent/conspicuous

C. Wide leaves (3/16 to 1/4 inch wide, or more); grows as a clump or bunch/mat

- Horizontal stems radiate from crown, *laying flat on the ground*; leaves dark green; *silvery, cellophane-like leaf sheaths* in center of plant; *zipperlike seedheads* in summer.....**goosegrass**
- *Tall white ligule; leaf sheaths strongly flattened. Sharply-pointed leaf tip.* Stems/leaves grow vertically, grows upright, in a *clump* (not laying flat on the ground); ..... **orchardgrass**

CC. Leaves narrow, with “boat-shaped” leaf tips

- Light, *apple-green color, seedheads often present*; may grow as a clump/bunch (but perennial types form distinct patches using stoloniferous growth); *tall, white, conspicuous ligule*; leaf blade may have a wrinkled or crinkled band across surface.....**annual bluegrass**
- *Rhizomes present*; pointy, *gray-green leaves*; *stems/sheaths strongly compressed/flattened*; mowing may remove most of the leaves, leaving “stick-like” stems behind.....**Canada bluegrass**
- Forms soft, fine, leaves; spreads by *creeping stolons*; forms *dense patches* in lawns, which often turn reddish-brown in hot weather ..... **rough(stalk) bluegrass**

CCC. Leaves fine, bristle-like (1-2 mm wide)

- Tall, membranous, white ligule; fine, blue-green leaves; bunch-type growth habit; generally found growing on salty soils (especially wet, salty areas); prolific seed producer.....**alkaligrass**