

THE IDENTIFICATION OF SOME OF THE MORE COMMON NATIVE OKLAHOMA GRASSES BY VEGETATIVE CHARACTERS

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INTRODUCTION

The increasing interest in grassland management in Oklahoma reveals the need for some means of identifying grasses by their vegetative characters. Native grasses comprise a major component of the state's grazing resources; hence, this work concerns itself only with those species. Several keys of local scope have been prepared for various localities, but thus far none has been made specifically for Oklahoma. It is hoped that this work will prove helpful in identifying grasses when only the vegetative part is present.

Most of the economically important native grasses of Oklahoma were collected during the season of 1949. Mature plants were collected so that each specimen could be positively identified before descriptions of the vegetative characteristics of each species were prepared. The most valuable characteristics from which to identify grasses vegetatively are found near the junction of the sheath and blade. Drawings illustrating this region have been made for each species. These, with the artificial key and brief descriptions, should enable one to determine any of the species included without too much difficulty.

REVIEW OF LITERATURE

The first published attempt at a system of identifying grasses by their vegetative characters was that by Jessen, in Germany, in 1863. Other works, some of which are

listed below, have appeared at intervals up to the present, but none have applied specifically to Oklahoma.

Carrier, in 1917, published a key to forty-eight important species of eastern United States.

Norton, in 1930, prepared keys to Maryland grasses in both vegetative and flowering stages. In 1932, Keim, Beadle, and Frolik published a key to the important prairie hay grasses of Nebraska. A well-prepared key to vegetative characteristics of some Kansas grasses by Copple and Aldous appeared the same year.

Burr and Turner, in 1933, presented separate keys based on gross morphological and microscopic leaf characteristics of some British grasses.

Hitchcock's key to the grasses of Montana, published in 1936, is excellent for its illustrations and completeness; over 200 species were included. The same year, Nowosad and co-workers published an excellent series of drawings, descriptions, and a key to the pasture grasses of eastern Canada. Pechanec, in 1936, studied the grasses of the upper Snake River Plains of Idaho and published descriptions and a key to eighteen grasses of this area.

Harrington and Durrell, in 1944, included most of the important Colorado grasses in a key and descriptions based on vegetative characters.

Blomquist, in 1948, appended a short key to immature grasses in his manual of the grasses of North Carolina.

[Ed. Notes: Nomenclature has been updated by Ronald J. Turl, Emeritus Professor of Botany at Oklahoma State University, according to the National Plant Data Center, Baton Rouge, LA (<http://plants.usda.gov>) and the *Flora of North America North of Mexico. Magnoliophyta: Commelinidae* (in part): *Poaceae, part 1 & part 2*. Volumes 24 & 25. Oxford University Press, New York.

The original thesis used the bracketed style of listing a key. It appears here in the indented style, which is now the standard practice.

Species names have been updated. Descriptions were originally in list form, but are presented here in paragraph form.]

KEY FOR IDENTIFICATION

1. Vernation conduplicate.
 2. Plants annual.
 3. Ligule 0.1-0.2 mm long, membranous basally with ciliate margin; plants dichotomously branched; blades tapering to needle-like point. *Aristida oligantha*
 3. Ligule a fringe of hairs 0.5-0.8 mm long; plants prostrate to decumbent, often mat-forming; blades flaccid. *Cenchrus spinifex*
 2. Plants perennial.
 4. Ligule with hairy margin at least half its length. (Distinguish a hairy margin from a lacerate or toothed one.)
 5. Plants stoloniferous and creeping. *Buchloe dactyloides*
 5. Plants not bearing long stolons.
 6. Blades mostly more than 5 mm wide. *Tridens flavus*
 6. Blades less than 5 mm wide.
 7. Plants with scaly, creeping rhizomes, sheaths crowded, overlapping, usually found in alkaline soil. *Distichlis spicata*
 7. Short rhizomes sometimes present, sheaths shorter than internodes.
 8. Plants erect, unbranched; blades long, attenuate; ligule membranous basally, with ciliate margin. *Sporobolus compositus*
 8. Plants erect to decumbent; blades short (less than 15 cm long), soft, flexuous; ligule a fringe of hairs.
 9. Blade margins conspicuously papillose-hispid; ligule a fringe of hairs less than 0.5 mm long. *Bouteloua hirsuta*
 9. Blade margins sometimes sparsely papillose-hispid; ligule often membranous basally, with ciliate margin, less than 0.3 mm long. *Bouteloua gracilis*
 4. Ligules membranous more than the basal half.

10. Plants decumbent, branching from base, seldom erect; blades obtuse, less than 12 cm long; rhizomes absent.
11. Ligule less than 1 mm long; blades conduplicate. *Chloris verticillata*
11. Ligule 1.5-3.0 mm long; blades flat, becoming conduplicate toward apex. *Schedonnardus paniculatus*
10. Plants erect; blades longer; rhizomes often present.
12. Plants glabrous throughout, except sparsely scattered long hairs at base of blade; blades very rigid, convolute; definite rhizomes present. *Coelorachis cylindrica*
12. Plants hairy, especially the blades; rhizomes usually absent.
13. Sheaths, especially the lower, inflated and imbricated, compressed, sharply keeled, yellowish in color; ligule less than 0.5 mm long. *Andropogon virginicus*
13. Plants with sheaths not as above; ligule at least 1.0 mm long.
14. Ligule membranous with lacerate margins; midrib very broad and prominent on both surfaces of blade; rhizomes absent. *Andropogon ternarius*
14. Ligule membranous with ciliate margins; rhizomes sometimes present. *Schizachyrium scoparium*
1. Vernation convolute.
15. Plants annual.
16. Ligule membranous basally, less than 0.6 mm long.
17. Plants with disagreeable odor; blade margins glandular; ligule with ciliate margins. *Eragrostis cilianensis*
17. Plants often hoary; blades short (3-8 cm long); ligule membranous, slightly toothed on margin. *Hordeum pusillum*
16. Ligule at least 0.8 mm long.
18. Plants densely hispid throughout; nodes hispid; blades 8-20 mm wide. *Panicum capillare*
18. Plants not as above.
19. Ligule made up entirely of hairs, or composed of hairs for more than the terminal half.
20. Blades less than 3 mm wide; veins and midrib inconspicuous. *Sporobolus vaginiflorus*
20. Blades 4-6 mm wide; midrib prominent. *Eriochloa contracta*
19. Ligule membranous, at least the basal half.
21. Sheaths longer than internodes; blades sometimes sparsely pilose on upper surface; collar prominent, wedge-shaped. *Panicum dichotomiflorum*

- 21. Sheaths shorter than internodes;
blades papillose-pilose on upper
surface toward base; collar very
narrow. *Leptochloa panicea*
- 15. Plants perennial.
 - 22. Ligule a fringe of hairs.
 - 23. Ligule less than 0.5 mm long.
 - 24. Rhizomes short, stout, scaly. *Eragrostis curtipedicellata*
 - 24. Rhizomes absent.
 - 25. Blades 15-90 cm long, attenuate;
midrib broad and white; nodes
crowded toward base of culm,
pubescent. *Eragrostis trichodes*
 - 25. Blades much shorter; midribs not
prominent; nodes glabrous.
 - 26. Sheaths pubescent on margins. *Sporobolus cryptandrus*
 - 26. Sheaths glabrous on margins.
 - 27. Blades sparsely pilose on
upper surface; sheaths
shorter than internodes,
with conspicuous midveins. *Eragrostis lugens*
 - 27. Blades usually glabrous;
sheaths longer or shorter
than internodes. *Eragrostis secundiflora*
 - 23. Ligule at least 1 mm long.
 - 28. Rhizomes present.
 - 29. Ligules less than 2 mm long;
plants tall and reed-like.
 - 30. Blade margins very scabrous;
midrib broad. *Spartina pectinata*
 - 30. Blade margins glabrous; midrib
inconspicuous. *Calamovilfa gigantea*
 - 29. Ligules usually more than 2 mm long.
 - 31. Blades 10-60 cm long, often
glaucous or purplish; midrib
broad and white. *Panicum virgatum*
 - 31. Blades 15-35 cm long; midrib
inconspicuous; sheaths
papillose-hirsute toward summit. *Eragrostis spectabilis*
 - 28. Rhizomes absent.
 - 32. Ligule 3 mm long; blades less
than 2 mm wide. *Eragrostis sessilispica*
 - 32. Ligule less than 2 mm long;
blades more than 2 mm wide.
 - 33. Ligule a dense fringe of hairs;
collar thickened, 1.5 mm wide. *Tridens albescens*
 - 33. Ligule a fringe of loose hairs;
collar very narrow and indistinct. *Tridens strictus*

22. Ligule membranous, at least the basal half.
34. Auricles rounded to clawlike, sometimes clasping;
ligules thick, often greenish.
35. Blades often pubescent on upper surface,
2-6 mm wide; wiry, creeping rhizomes present. *Pascopyrum smithii*
35. Blades glaucous or glabrous, usually more
than 6 mm wide; rhizomes very short,
if present.
36. Blades often 20 mm wide, slightly
scabrous on upper surface and margins;
ligule usually at least 1 mm long. *Elymus canadensis*
36. Blades seldom over 12 mm wide, very
scabrous on margins and upper surface;
ligule less than 1 mm long. *Elymus virginicus*
34. Auricles rudimentary or absent;
ligules usually thin and hyaline. couplet 37
37. Ligules with paired lateral spurs, with vein in each spur. *Sorghastrum nutans*
37. Ligules not veined nor with lateral spurs.
38. Tall, reed-like plants, often growing in shallow water;
sheaths thick and pithy; ligules often 15 mm long. *Zizaniopsis miliacea*
38. Plants not as above.
39. Ligules not exceeding 0.5 mm in length
40. Blades usually less than 5 mm wide;
margins papillose. *Bouteloua curtipendula*
40. Plants robust; blades usually at least 10 mm
wide; margins glabrous, often scabrous.
41. Blades dark green, narrowed toward base,
soft, flaccid, and lanceolate; rhizomes
short and stout. *Chasmanthium latifolium*
41. Blades rigid, usually scabrous on margin
and both surfaces, tapering to long
point; midrib broad and white; rhizomes
thick, knotty, and often woody. *Tripsacum dactyloides*
39. Ligules usually at least 1 mm long.
42. Blades less than 10 cm long.
43. Ligule bearing long, pointed teeth;
rhizomes tough and scaly. *Hilaria jamesii*
43. Ligule often oblique, margins entire;
rhizomes absent. *Digitaria cognata*
42. Blades more than 10 cm long. couplet 44
44. Plants stoloniferous. *Panicum obtusum*
44. Plants without long, creeping stolons.
45. Plants of moist habitats, decumbent to semi-erect;
nodes and collars often purplish; blades spreading,
often drooping.

46. Rhizomes short, stout, and scaly;
sheaths papillose at summit. *Paspalum floridanum*
46. Rhizomes absent; sheaths glabrous to pilose,
but not papillose.
47. Plants rooting from lower nodes;
sheaths no longer than internodes. *Paspalum pubiflorum*
var. *glabrum*
47. Plants purplish green in color;
sheaths longer than internodes;
short, white hairs immediately
behind the ligule. *Paspalum setaceum*
var. *stramineum*
45. Plants of drier habitats, erect (*Bothriochloa*
laguroides subsp. *torreyana* is sometimes
decumbent basally), blades ascending to erect.
48. Plants erect or ascending from decumbent base;
blades and sheaths glabrous throughout;
rhizomes absent. *Bothriochloa laguroides*
subsp. *torreyana*
48. Plants erect, often purplish or glaucous;
blades often pubescent to pilose;
rhizomes usually present.
49. Plants with long, stout rhizomes;
blades flat to U-shaped in cross-section;
ligule 3-5 mm long. *Andropogon hallii*
49. Plants sometimes having short rhizomes;
blades flat to V-shaped in section;
ligule 1-2 mm long. *Andropogon gerardii*

DESCRIPTIONS OF SPECIES

Andropogon gerardii Vitman
(= *A. furcatus* Muhl.)
Big Bluestem

Perennial 1-2 m tall, robust, tufted, erect, sparingly branched above, often glaucous to purplish. **Culms** solid, terete, striate; nodes glabrous. **Vernation** convolute. **Blades** 10-45 cm long, 5-10 mm wide, basal leaves pointed, flat to V-shaped in section, firm; upper surface scabrous, papillose at base; veins distinct, raised above surface; midrib broad and prominent; margins scabrous. **Ligule** membranous, 1-2 mm long, truncate, ciliate to lacerate on margin. **Collar** divided by midrib, hirsute on margins. **Auricles** absent. **Sheaths** shorter than internodes, glaucous, glabrous, the lower sometimes villous toward base, striate, rounded in section, split, with a hyaline margin continuous with the ligule. **Rhizomes** short and thick, usually present.

Distribution: This species occurs abundantly on prairies, especially in more fertile soil, throughout the state.

Andropogon hallii Hack.

Sand Bluestem

Perennial 100-200 cm tall, erect, robust, glaucous, simple at the base, branched above, often tufted. **Culms** glabrous, solid, glaucous, round in section; nodes glabrous. **Vernation** convolute. **Blades** 5-45 cm long, 5-12 mm wide, glaucous, somewhat rigid, erect, flat to U-shaped in cross-section, glabrous to scaberulous on upper surface; lower surface keeled, glaucous; margins scabrous; veins raised above the surface; midrib broad and white. **Ligule** membranous, continuous with hyaline margins of the sheaths, often reddish, lacerate-toothed on margin, rounded, 3-5 mm long. **Collar** conspicuous and glabrous. **Auricles** absent. **Sheaths** glaucous, shorter than internodes, glabrous, rigid, split, round in cross-section, striate. **Rhizomes** long, stout and creeping.

Distribution: Occurs in sandy soils from the central to the western part of the state.

Andropogon ternarius Michx.

Splitbeard Bluestem, Split Bluestem

Perennial 80-100 cm tall, tufted, erect, simple below, branched above, the branches long, slender, and erect. **Culms** smooth and glabrous toward base; the upper nodes sometimes pubescent. **Vernation** conduplicate. **Blades** 10-60 cm long, 2-3 mm wide, those below the racemes very short, the basal blades often purplish-glaucous, glabrous except sometimes sparsely papillose at base, the basal blades long, attenuate, conduplicate, becoming revolute toward the apex, sometimes slightly scabrous above, flat in section, becoming revolute; margin minutely scabrous, sometimes sparsely hirsute at base; veins distinct; midrib very wide and prominent above and below. **Ligule** membranous, opaque, truncate, lacerate on margins, sometimes apparently divided by midrib, 1-2 mm long. **Collar** obscure. **Auricles** absent. **Sheaths** mostly shorter than internodes, usually somewhat scabrous, sometimes sparsely hirsute or papillose, flattened in cross-section, keeled toward the apex, split to near base. **Rhizomes** absent.

Distribution: This species appears on dry, sandy soil throughout most of the state; it seldom forms pure stands.

Andropogon virginicus L.

Broomsedge

Perennial 50-100 cm tall, tufted, erect, much branched above. **Culms** usually flattened, solid, sometimes glaucous; nodes sometimes villous. **Vernation** conduplicate. **Blades** 15-35 cm long, 2-5 mm wide, flat, becoming conduplicate toward the long, tapering apex, hirsute toward base on upper surface; margins slightly scabrous, hirsute toward base of blade; veins indistinct; midrib prominent on lower surface. **Ligule** 0.5 mm long, membranous, rounded and ciliate. **Auricles** absent. **Collar** obscure. **Sheaths** shorter than internodes, loose; lower inflated and imbricated, compressed, keeled, greenish-yellow, glabrous, except often pilose to papillose on margins, split. **Rhizomes** absent.

Distribution: This species is often abundant on open, thin soils of the eastern half of the state.

Aristida oligantha Michx.

Oldfield Threecawn, Prairie Threecawn

Annual 20-60 cm tall, erect, slender, dichotomously branched. **Culms** erect, slender, tufted, branching from the nodes, scabrous; nodes glabrous. **Vernation** conduplicate. **Blades** 10-20 cm long, 1-2 mm wide, rigid, margin sparsely ciliate, flat to convolute at apex, tapering to a needle-like point, scabrous on upper surface, often pilose near base; veins indistinct, more prominent adjacent to midrib; margin sparsely ciliate; midrib not prominent. **Ligule** membranous, ciliate on margins, approximating a fringe of hairs, 0.1-0.2 mm long. **Collar** yellowish-green, glabrous, indistinct. **Auricle** absent. **Sheaths** longer or shorter than the internodes, slightly scabrous, with membranous margins, rounded in cross-section, split to near base with margins twisted and overlapping, sometimes ciliate at the throat. **Rhizomes** absent.

Distribution: Occurs throughout the state, found in old fields, sometimes forming pure stands on thin, clay soils.

Bothriochloa laguroides (DC.) Herter subsp. *torreyana* (Steud.) Allred & Gould
(= *Andropogon saccharoides* Sw.)
Silver Beardgrass, Silver Bluestem

Perennial 40-120 cm tall, tufted, slender, simple to branched, erect or ascending from decumbent base, often geniculate at the base. **Culms** glabrous; nodes glabrous to appressed-pubescent. **Vernation** convolute. **Blades** 8-20 cm long, 3-9 mm wide, glabrous throughout, tapered on both ends, sometimes slightly scabrous on upper surface and margins; veins inconspicuous; midrib broad, keeled below. **Ligule** membranous, hyaline, the margin finely notched, 1.5-3.0 mm long. **Collar** inconspicuous, glabrous to sparsely pilose on margin. **Auricles** absent. **Sheaths** shorter than the internodes, rounded in cross-section, but keeled toward the summit, glabrous, split; margins hyaline. **Rhizomes** absent.

Distribution: This species is abundant on upland soils throughout the state.

Bouteloua curtipendula (Michx.) Torr.

Sideoats Grama

Perennial 30-100 cm tall, slender, erect, and tufted. **Culms** glabrous; internodes much shorter toward base; nodes glabrous. **Blades** 5-25 cm long, 4-5 mm wide in middle, flat, drooping, tapering to narrow point, scabrous on upper surface, pubescent on upper and lower surfaces; margin scabrous with glandular hairs, especially toward base; veins indistinct; midrib evident on upper surface. **Ligule** collarlike, membranous, 0.5 mm long, ciliate on the margin. **Collar** usually divided, yellowish-green, long-ciliate on margin. **Auricles** absent. **Sheaths** usually shorter than internodes, loose, papery on the margin, striate, round in cross-section, glabrous to sparingly pilose, throat often pilose, split to near base. **Rhizomes** short and scaly.

Distribution: This species is found in pure stands on dry hills and plains of the western part of the state.

Bouteloua gracilis (Kunth) Lag. ex Griffiths
Blue Grama

Perennial 15-50 cm tall, tufted, erect, usually branching at the base, often sod-forming. **Culms** glabrous, seldom branching from upper nodes; nodes glabrous. **Vernation** conduplicate clasping. **Blades** 5-12 cm long, 1-2 mm wide, soft; margin slightly scabrous, sparsely papillose-hirsute basally; blade flat, slightly scabrous on upper surface, narrow, drooping, tapering to long point; veins indistinct; midrib indistinct. **Ligule** 0.2-0.3 mm long, collar-shaped, mostly a fringe of hairs. **Collar** yellowish-green, divided by midrib, margin ciliate. **Auricles** absent. **Sheaths** oval to round, paler than blade, glabrous, long-ciliate at the throat, split to near base, shorter than the internodes, striate; margin membranous. **Rhizomes** absent.

Distribution: This species is one of the dominant grasses of the plains and occurs throughout the state.

Bouteloua hirsuta Lag.
Hairy Grama

Perennial 15-50 cm tall, rigid, erect to decumbent, tufted, usually sod-forming, simple, variable in habit. **Culms** striate, glabrous to pubescent below; nodes glabrous. **Vernation** conduplicate clasping. **Blades** 2-13 cm long, 1-2 mm wide, longer basally, numerous, flexuous, narrow-pointed, puberulent above, soft; midrib not prominent; margins sparsely papillose-hispid. **Ligule** a fringe of hairs 0.5 mm long. **Collar** papillose on margin, usually divided by midrib. **Auricles** absent. **Sheaths** usually shorter than internodes, loose and crowded, the upper glabrous, the lower sometimes pubescent, oval to round in cross-section, split, striate; margin hyaline. **Rhizomes** absent.

Distribution: Occurs on rocky hills and plains throughout the state.

Buchloe dactyloides (Nutt.) Engelm.
Buffalograss

Perennial sod-forming, creeping, and stoloniferous, the female plants shorter than the male, which are 10-30 cm tall, erect, and slender; the stolons from 10-30 cm long, with internodes 4-7 cm long, the nodes often rooting and bearing tufts of short leaves. **Culms** glabrous; nodes glabrous. **Vernation** conduplicate clasping. **Blades** 4-10 cm long, 1-3 mm wide, flexuous, soft, grayish-green, flat, somewhat scabrous and sparsely pubescent on upper surface; margin scaberulous, glandular; veins and midrib indistinct. **Ligule** a fringe of hairs less than 1.0 mm long. **Collar** indistinct, pilose at base and on margins. **Auricles** absent. **Sheaths** loose, round in cross-section, striate, and glabrous. **Rhizomes** absent.

Distribution: Occurs on open plains throughout the state, except the southeast part.

Calamovilfa gigantea (Nutt.) Scribn. & Merr.
Giant Sandreed

Perennial 150-300 cm tall, robust, usually solitary, rigid, unbranched. **Culms** glabrous, often glaucous; nodes glabrous. **Vernation** convolute. **Blades** as much as 70 cm long, 5-8 mm wide, rigid, flat, becoming involute toward a long attenuate apex, glabrous throughout; veins inconspicuous; lower surface somewhat keeled basally. **Ligule** a fringe of hairs 1-2 mm long. **Collar** often reddish, glabrous, sometimes ciliate on the margins. **Auricles** absent. **Sheaths** often glaucous, usually reddish, longer than the internodes, rigid, striate, often short-ciliate at the throat, split, round in cross-section, glabrous; margins overlapping. **Rhizomes** long, woody, and creeping.

Distribution: This species is a sandbinder, occurring along sandy stream banks and on sand dunes in the western part of the state.

Cenchrus spinifex Cav.
(=*C. pauciflorus* Benth.)
Coastal Sandbur, Common Sandbur

Annual 15-80 cm tall, prostrate to decumbent, much branched, tufted, often forming mats, somewhat stout. **Culms** flattened, sometimes scabrous, often pubescent toward summit; nodes sometimes pubescent. **Vernation** conduplicate. **Blades** 6-15 cm long, 2-9 mm wide, somewhat flaccid, flat to conduplicate, often narrowed at the base, spreading, tapering to apex, scabrous on upper surface and margins, sometimes sparingly pilose near base on upper surface; veins raised above surface; midrib prominent, keeled toward base. **Ligule** a fringe of hairs 0.5-0.8 mm long. **Collar** usually divided by midrib, wedge-shaped, sparsely ciliate on the margins. **Auricles** absent. **Sheaths** shorter than the internodes, often loose and inflated, split, flattened in cross-section and keeled toward summit, thin, striate, glabrous except occasionally pilose at the throat, often scabrous on back of midrib; margins hyaline, occasionally ciliate. **Rhizomes** absent.

Distribution: This species occurs in waste places, usually on sandy soils, throughout the state.

Chasmanthium latifolium (Michx.) H.O. Yates
(=*Uniola latifolia* Michx.)
Broadleaf Chasmanthium, Indian Woodoats

Perennial 60-120 cm tall, dark green, unbranched, erect, with broad, flat blades. **Culms** glabrous; nodes glabrous, often purplish. **Vernation** convolute. **Blades** 10-20 cm long, 1-2 cm wide, dark green, soft, flaccid, narrowed toward the base, flat, lanceolate, short-pointed, glabrous except occasionally sparsely pubescent on upper surface at base; margins scaberulous; veins 5 on each side of semi-prominent midrib. **Ligule** membranous with short-ciliate margin, truncate, mostly less than 0.5 mm long. **Collar** glabrous, wedge-shaped, often purplish. **Auricles** absent. **Sheaths** shorter than internodes, dark green in color, round in cross-section, split, striate, much narrower than blade, glabrous throughout. **Rhizomes** short and stout.

Distribution: This species occurs in colonies in moist, wooded habitats throughout most of the state.

Chloris verticillata Nutt.
Tumble Windmill-Grass

Perennial 10-40 cm tall, tufted, decumbent to erect, often rooting at lower nodes, branching from the base; leaves crowded to the base. **Culms** flattened; the branches flattened, glabrous; nodes glabrous. **Vernation** conduplicate. **Blades** 2-12 cm long, 1-3 mm wide, obtuse, soft, often pubescent on lower surface, scaberulous on upper surface, conduplicate, drooping; margin hyaline and minutely scabrous; veins distinct; midrib prominent on lower surface. **Ligule** membranous, fringed on margin, almost divided into halves, less than 1 mm long. **Collar** divided by the midrib, indistinct, glabrous. **Auricles** absent. **Sheaths** shorter than the internodes, loose, compressed, glabrous; midvein prominent; margins hyaline. **Rhizomes** absent.

Distribution: Occurs on open prairies throughout the state.

Coelorachis cylindrica (Michx.) Nash
(=Rottboellia cylindrica Torr.)
Carolina Jointgrass, Jointtail Grass

Perennial 30-90 cm tall, erect, tufted, slender, branching toward the summit. **Culms** round, glabrous; nodes glabrous. **Vernation** conduplicate. **Blades** 15-40 cm long, 2-3 mm wide, longer basally, flat, becoming involute, stiff, tapering to a long point, scabrous on upper surface, scaberulous on lower surface, occasional long hairs on upper surface basally; margin slightly scabrous; veins distinct; midrib prominent. **Ligule** membranous, truncate, lacerate on margins, 0.5 mm long. **Collar** indistinct, narrow, divided by the midrib. **Auricles** absent. **Sheaths** longer than internodes, striate, rounded in cross-section, glabrous to scaberulous, rather loose and split. **Rhizomes** short.

Distribution: This species occurs in sandy soil in the eastern half of the state.

Digitaria cognata (Schult.) Pilg.
(=Leptoloma cognatum (Schult.) Chase)
Fall Witchgrass

Perennial 20-70 cm tall, slender, branched below, tufted, erect, becoming geniculate. **Culms** glabrous or pubescent toward base; nodes glabrous. **Vernation** convolute. **Blades** mostly less than 10 cm long, 2-5 mm wide, flat, rigid, tapering to narrow point; upper surface scaberulous, sometimes sparsely pubescent; the lower surface sparsely pubescent; veins indistinct; midrib semi-prominent, more evident below; margins wavy, hyaline, scaberulous. **Ligule** often oblique, membranous, hyaline, truncate, 1 mm long. **Collar** often paralleling an oblique blade base, glabrous, usually divided by midrib. **Auricles** absent. **Sheaths** shorter than internodes, the upper glabrous, the lower somewhat pubescent, loose, round in cross-section and split. **Rhizomes** absent.

Distribution: Occurs on dry soils throughout the state.

Distichlis spicata (L.) Greene
(=D. stricta (Torr.) Rydb.)
Saltgrass

Perennial 10-60 cm tall, rigid; leaves conspicuously distichous; plant freely branching, often glaucous. **Culms** glabrous; nodes glabrous. **Vernation** conduplicate clasping. **Blades** 5-10 cm long, 2-4 mm wide, flat or U-shaped toward the acuminate tip, crowded, rigid, ascending, glabrous to pubescent on both surfaces; margin scabrous; veins raised; midrib inconspicuous. **Ligule** collar-shaped, mostly a fringe of hairs less than 0.5 mm long. **Collar** wedge-shaped, conspicuous, pubescent on margins. **Auricles** absent. **Sheaths** crowded, overlapping, glabrous, except pubescent at throat, rounded in cross-section, split, striate, almost white in color. **Rhizomes** scaly, creeping.

Distribution: Occurs on saline and alkaline soils throughout the state.

Elymus canadensis L.
Canada Wildrye, Great Plains Wildrye

Perennial 60-150 cm tall, dark green or glaucous, simple, erect, tufted, or forming a loose sod. **Culms** glabrous, often glaucous; nodes glabrous. **Vernation** convolute. **Blades** 10-30 cm long, 4-20 mm wide, dark green, often glaucous, erect, rigid, flat, sharp-pointed, narrowed toward base, slightly scabrous on upper surface and margins, glabrous on lower surface; veins raised above surface, numerous; midrib keeled toward base on lower surface. **Ligule** membranous, thick, finely toothed to ciliate, truncate, 0.5-1.5 mm long. **Collar** distinct, oblique, wedge-shaped, sometimes divided by midrib, glabrous. **Auricles** rounded to clawlike, narrow, sometimes clasping. **Sheaths** longer than internodes, glabrous, split, round in cross-section, green or glaucous, striate; margins overlapping and hyaline, the outer margin sometimes ciliate. **Rhizomes** short, if present.

Distribution: Occurs in moist habitats throughout the state.

Elymus virginicus L.
Virginia Wildrye

Perennial 60-90 cm tall, smooth, tufted, erect, simple, rigid, and robust. **Culms** glabrous; nodes glabrous. **Vernation** convolute. **Blades** 10-30 cm long, 4-12 mm wide, flat, constricted basally, tapering to a short point, scabrous on upper surface, often glaucous, glabrous and green on lower surface; margins scabrous; veins distinct, ridged; midrib prominent; blade keeled on lower surface toward base. **Ligule** membranous, thick, greenish, truncate, minutely ciliate on margin, 0.5-1.0 mm long. **Collar** prominent, often diagonal, glabrous, greenish-yellow. **Auricles** 0.5-1.5 mm long, sharp and clawlike to round-pointed. **Sheaths** shorter or longer than the internodes, loose, glabrous to pubescent, striate, scaberulous, split, rounded; margins overlapping, the outer margin ciliate, the inner margin glabrous and hyaline. **Rhizomes** absent.

Distribution: Occurs in colonies along stream banks and in wooded sections throughout the state.

Eragrostis cilianensis (All.) Vignola ex Janch.
Stinkgrass

Annual varying from 15-50 cm tall, with glandular depressions on the branches, densely tufted, decumbent or geniculate to erect, soft. **Culms** branched, glabrous; nodes glabrous, encircled below by a ring of glands. **Vernation** convolute. **Blades** 6-25 cm long, 2-7 mm wide, flat, lower surface smooth; upper surface scabrous; veins inconspicuous; midrib prominent, especially below; margin scabrous, glandular toward base. **Ligule** membranous basally; margin ciliate-lacerate; approximately 0.5 mm long. **Collar** indistinct, pilose at margins. **Auricles** absent. **Sheaths** shorter than internodes, loose, round in cross-section, keeled toward summit, split, striate, glabrous, sometimes pilose at throat; margin hyaline. **Rhizomes** absent.

Distribution: A weed in fields and waste places; it occurs throughout the state.

Eragrostis curtipedicellata Buckley
Gummy Lovegrass

Perennial 30-90 cm tall, erect or decumbent from a bulbous base, tufted, sparsely branched. **Culms** rigid and smooth; nodes glabrous. **Vernation** convolute. **Blades** 6-15 cm long, 1-5 mm wide, flat, usually involute toward apex, tapering to fine point, thin, narrowed and boat-shaped basally, upper surface and margins scaberulous, somewhat keeled below, often glandular-viscid below; veins raised above the surface. **Ligule** a fringe of very short hairs, 0.2 mm long. **Collar** divided by midrib, distinct, 1-2 mm wide, pilose on the margins. **Auricles** absent. **Sheaths** longer than internodes, somewhat loose, usually glandular-viscid, villous at the throat, rigid, round in cross-section, striate and split. **Rhizomes** very short, stout, and scaly.

Distribution: Occurs in colonies in open habitats throughout the state.

Eragrostis lugens Nees
Mourning Lovegrass

Perennial 20-60 cm tall, slender, tufted, geniculate at base, erect, simple or sparingly branched. **Culms** wiry and glabrous; nodes glabrous. **Vernation** convolute. **Blades** 10-25 cm long, 1-3 mm wide, flat to involute at the apex, often sparsely pilose on upper surface, glabrous on lower surface, scaberulous on margins and upper surface, narrowed toward base; veins 2-3 on each side of semi-prominent midrib. **Ligule** a dense uneven fringe of hairs less than 0.5 mm long. **Collar** thickened, indistinct, divided by midrib, sparsely pilose on margins. **Auricles** absent. **Sheaths** loose, shorter than internodes, rigid, compressed at base of plant, greenish-yellow, split, oval in cross-section, glabrous, pilose at throat; midvein prominent. **Rhizomes** absent.

Distribution: Occurs in colonies in dry soils in eastern and central Oklahoma.

Eragrostis secundiflora J. Presl
Red Lovegrass

Perennial 20-40 cm tall, tufted, erect, and simple. **Culms** glabrous; nodes glabrous. **Vernation** convolute. **Blades** 5-30 cm long, 1-4 mm wide, flat, boat-shaped at base, involute toward long,

attenuate apex; lower surface glabrous; scaberulous on upper surface and margins; veins and midrib indistinct. **Ligule** a fringe of short hairs, 0.2-0.4 mm long. **Collar** divided by midrib, wedge-shaped, distinct, pilose on margins. **Auricles** absent. **Sheaths** longer or shorter than internodes, split, rounded in cross-section, glabrous, pilose at throat. **Rhizomes** absent.

Distribution: Occurs in sandy soils throughout the state.

Eragrostis sessilispica Buckley
Tumble Lovegrass

Perennial 20-40 cm tall, tufted, ascending to erect, slender, rigid, with one node above the basal cluster of leaves, branching from the base. **Culms** glabrous; nodes glabrous. **Vernation** convolute. **Blades** 3-15 cm long, less than 2 mm wide, rigid, flat to somewhat involute, acuminate, glabrous to somewhat scabrous on upper surface, occasionally sparsely pilose basally; margins scaberulous; veins distinct, raised above the upper surface; midrib inconspicuous. **Ligule** a white, uneven fringe of hairs 3 mm long. **Collar** inconspicuous, pubescent to pilose basally and on margins. **Auricles** absent. **Sheaths** longer than the internodes, rigid, glabrous, pilose at the throat, split, round in cross-section. **Rhizomes** absent.

Distribution: Occurs on dry sandy soil throughout the state.

Eragrostis spectabilis (Pursh) Steud.
Purple Lovegrass

Perennial 30-60 cm tall, simple, tufted, erect or ascending, rigid. **Culms** rigid, glabrous; nodes glabrous. **Vernation** convolute. **Blades** 15-35 cm long, 3-8 mm wide, rigid, flat, becoming involute, tapering to fine point, smooth on lower surface, scabrous on upper surface, hirsute at base, pubescent at apex on upper surface; margin scaberulous; veins distinct; midrib indistinct, more prominent on lower surface. **Ligule** a fringe of hairs, 2-4 mm long. **Collar** divided by midrib, pilose at base. **Auricles** absent. **Sheaths** longer than internodes, constricted at throat, papillose-hirsute toward summit, throat pilose, round in cross-section, split, striate, yellowish-green; margins hyaline. **Rhizomes** short, stout, and scaly.

Distribution: Occurs in dry soils throughout the state.

Eragrostis trichodes (Nutt.) Alph. Wood
Sand Lovegrass

Perennial 60-120 cm tall, tufted, erect, simple and smooth, and slender. **Culms** glabrous; nodes crowded toward base, pubescent. **Vernation** convolute. **Blades** 15-90 cm long, 2-10 mm wide, smooth on lower surface, narrowed toward the base, flat to somewhat involute, tapering to a very slender point; upper surface often pilose near base, somewhat scabrous toward apex; margins smooth to scaberulous; veins raised above surface, midrib prominent and white. **Ligule** a fringe of hairs less than 0.5 mm long. **Collar** wedge-shaped, prominent, divided by midrib, pilose basally and on margins. **Auricles** absent. **Sheaths** crowded toward base of plant, longer than internodes, greenish-yellow, glabrous except pilose at throat, keeled toward summit, split, striate, and rigid. **Rhizomes** absent.

Distribution: Occurs in sandy soils throughout the state.

Eriochloa contracta Hitchc.

Prairie Cupgrass

Annual 30-70 cm tall, densely tufted, decumbent at base, otherwise erect, freely branching above. **Culms** pubescent above; pubescent to puberulent at the nodes. **Vernation** convolute. **Blades** 12-20 cm long, 4-6 mm wide, flat, boat-shaped near base, becoming convolute on drying, flaccid, tapering to long point, pubescent to puberulent on upper and lower surfaces; veins indistinct; midrib prominent; margins smooth. **Ligule** mostly a fringe of soft white hairs 0.8-1.0 mm long, base membranous. **Collar** divided by midrib, indistinct and pubescent. **Auricles** absent. **Sheaths** longer or shorter than internodes, thin, loose, glabrous to short-pubescent, rounded in cross-sections, striate, split; margin not hyaline. **Rhizomes** absent.

Distribution: This species is found in moist cultivated and waste places throughout the state.

Hilaria jamesii (Torr.) Benth.

Galleta

Perennial 30-100 cm tall, tufted, stiff, erect or ascending from decumbent base; roots strong. **Culms** glabrous; nodes villous. **Vernation** convolute. **Blades** 2-8 cm long, 2-4 mm wide, rolled to U-shaped in cross-section, rigid, becoming involute toward apex; upper surface scabrous; veins conspicuous above; antrorsely scabrous above, retrorsely scabrous below; midrib conspicuous above; margins scabrous. **Ligule** 2.5-3.5 mm long, membranous, truncate, bearing long, pointed teeth. **Collar** of the upper leaves pilose to papillose-pilose on margins, otherwise glabrous to pubescent. **Auricles** absent. **Sheaths** overlapping below, retrorsely scabrous from sides of veins, shorter than internodes, somewhat loose, sometimes sparingly villous at throat, oval in cross-section; margin thick, papery; veins distinct. **Rhizomes** tough, scaly, creeping, and coarse.

Distribution: Occurs in dry, thin soil in the Panhandle.

Hordeum pusillum Nutt.

Little Barley

Annual 10-35 cm tall, decumbent to erect, hoary, and tufted. **Culms** glabrous; nodes glabrous. **Vernation** convolute. **Blades** 3-8 cm long, 1-4 mm wide, flat to involute when dry, erect, often flexuous, soft, often sparsely pubescent on margins and surfaces; upper surface and margin scaberulous; margin sometimes short-ciliate; veins conspicuous above; midrib prominent on lower surface. **Ligule** membranous, slightly toothed on margin, truncate, 0.3-0.6 mm long. **Collar** wedge-shaped, yellowish-green, divided by midrib, occasionally pubescent, especially on the margins. **Auricles** absent. **Sheaths** rigid, shorter than internodes, usually pubescent, sometimes pilose at the throat, split, round in section, pinkish-green when young; margins membranous. **Rhizomes** absent.

Distribution: Occurs as a weed in overgrazed pastures and fields throughout the state.

Leptochloa panicea (Retz.) Ohwi
(=*Leptochloa filiformis* (Lam.) P. Beauv.)
Red Sprangletop

Annual 30-90 cm tall, erect, geniculate below, branched. **Culms** sometimes reddish to purplish, smooth and glabrous; nodes glabrous. **Vernation** convolute. **Blades** 10-20 cm long, 5-10 mm wide, thin, flat, soft, narrowed and boat-shaped toward base, scaberulous on margins and both surfaces, sparsely papillose on upper surface toward base; veins distinct; midrib prominent below. **Ligule** hyaline basally, rounded with a broad, lacerate-toothed margin, 1-2 mm long. **Collar** very narrow, indistinct, divided by midrib, pubescent basally and on margins. **Auricles** absent. **Sheaths** shorter than internodes, papillose-hirsute, the lower usually smooth and glabrous, somewhat loose, split, margins overlapping, round in cross-section; margin hyaline. **Rhizomes** absent.

Distribution: A weed in moist cultivated fields and waste places throughout most of the state.

Panicum capillare L.
Witchgrass

Annual 20-80 cm tall, hairy, erect to spreading at base, tufted, simple to sparingly branched basally. **Culms** papillose-hispid to almost glabrous; densely hispid at the nodes. **Vernation** convolute. **Blades** 10-25 cm long, 8-20 mm wide, the larger ones slightly constricted at the base, somewhat short-pointed, hispid on both surfaces; veins indistinct; midrib broad, white, prominent; margins papillose-hispid. **Ligule** a fringe of hairs 0.8-1.5 mm long, with membranous base. **Collar** narrow, indistinct and hispid. **Auricles** absent. **Sheaths** longer than internodes, densely papillose-hispid, loose, round in cross-section, split. **Rhizomes** absent.

Distribution: This species occurs in fields and waste places throughout the state.

Panicum dichotomiflorum Michx.
Fall Panicum

Annual 50-200 cm tall, tufted, robust, purplish, ascending from geniculate to prostrate base, branched. **Culms** succulent, flattened, thick, usually glabrous, rarely pubescent; nodes swollen. **Vernation** convolute. **Blades** 10-50 cm long, 3-20 mm wide, thin, boat-shaped toward base, flat to conduplicate, tapering to narrow apex, upper surface and margin scaberulous, sometimes sparsely pilose on upper surface; veins distinct; midrib broad and white. **Ligule** membranous basally, the upper half a ciliate fringe 1-2 mm long. **Collar** prominent, wedge-shaped, swollen, divided by midrib, occasionally pilose on margins, bisected by distinct veins continuous from blade to sheath. **Auricles** absent. **Sheaths** longer than internodes, compressed toward the summit, loose, glabrous, sparsely pilose at the throat, striate, split; margins hyaline. **Rhizomes** absent.

Distribution: This species occurs as a weed in moist cultivated fields and waste places throughout the state.

Panicum obtusum Kunth

Vine Mesquite

Perennial 20-80 cm tall, stoloniferous with stolons sometimes 15-18 feet long, stiff, erect to decumbent at base, tufted from a knotted crown, simple or branching at the base. **Culms** compressed, glabrous; nodes glabrous. Nodes of stolons swollen and lanate, the internodes long. **Vernation** convolute. **Blades** 5-20 cm long, 2-7 mm wide, flat to keeled or involute toward long narrow apex, firm, erect; upper surface glabrous to scabrous, with sparse hairs toward base; veins raised; midrib prominent above; margins scabrous. **Ligule** membranous, hyaline, lacerate; margin rounded; 1-1.5 mm long. **Collar** indistinct, pilose on margins. **Auricles** absent. **Sheaths** shorter than internodes, loose, the lower sometimes pubescent, otherwise glabrous, round in cross-section, split; midvein prominent on inner surfaces. **Rhizomes** short and knotty.

Distribution: Occurs along sandy or gravelly stream banks and ditches throughout the state.

Panicum virgatum L.

Switchgrass

Perennial 75-200 cm tall, robust, tufted to sod-forming, often glaucous, unbranched, erect. **Culms** glabrous, often glaucous; nodes glabrous. **Vernation** convolute. **Blades** 10-60 cm long, 3-15 mm wide, often glaucous or purplish, flat, erect, tapering to a long point, upper surface usually pilose near base, becoming pubescent to glabrous toward apex; lower surface smooth; margins scabrous; veins indistinct; midrib broad and white. **Ligule** a fringe of hairs 3-5 mm long, sometimes membranous basally. **Collar** glabrous to pubescent, indistinct. **Auricles** absent. **Sheaths** longer than internodes, pubescent on margins, round in cross-section, split, striate, firm, often purplish. **Rhizomes** numerous, stout, scaly, and creeping.

Distribution: Occurs abundantly in open habitats throughout the state.

Pascopyrum smithii (Rydb.) Barkworth & D.R. Dewey(=*Agropyron smithii* Rydb.)

Western Wheatgrass

Perennial 30-60 cm tall, sod-forming, rigid, often glaucous, smooth and glabrous, mostly solitary with sterile shoots from base. **Culms** rigid, glaucous, pale toward the base; nodes glabrous. **Vernation** convolute. **Blades** 10-25 cm long, 2-6 mm wide, conspicuously ribbed, stiff, flat, often keeled toward apex, narrow pointed, scabrous or pubescent on upper surface; margin toothed; veins prominent. **Ligule** 0.5-0.8 mm long, collar-shaped, thick, pale green, margin very finely fringed. **Collar** smooth, divided by midrib. **Auricles** large, 1-2 mm long. **Sheaths** shorter than internodes, glaucous, glabrous to scaberulous, strongly striated, split, oval in cross-section; margin hyaline, slightly scabrous. **Rhizomes** wiry, creeping, relatively smooth.

Distribution: Occurs throughout the state except in the southeastern part. Often sown as a pasture crop.

Paspalum floridanum Michx.

Florida Paspalum

Perennial 1-2 m tall, robust, simple, solitary to small-tufted. **Culms** compressed, glabrous; nodes glabrous. **Vernation** convolute. **Blades** 15-35 cm long, 4-15 mm wide, the upper narrowed and boat-shaped basally, stiff, mostly spreading and ascending at the summit, flat to folded, papillose-pilose on the upper surface, occasionally so on the lower surface, scaberulous on upper surface and margins; margins hyaline; veins distinct, raised on upper surface; midrib broad, white and prominent below. **Ligule** membranous, truncate, lacerate-toothed on margin, 2-3 mm long. **Collar** divided by midrib, indistinct, narrow, pubescent, pilose on margins. **Auricles** absent. **Sheaths** longer than internodes, overlapping toward base of culm, the upper sometimes shorter than internodes, keeled, striate, glabrous to papillose-hirsute, throat papillose, split, flattened in cross-section; margin papery. **Rhizomes** short, stout, and scaly.

Distribution: Occurs throughout the state in low, moist places.

Paspalum pubiflorum Rupr. ex E. Fourn. var. *glabrum* Vasey ex Scribn.

Hairyseed Paspalum

Perennial 50-100 cm tall, decumbent to ascending. **Culms** geniculate to decumbent at base, glabrous; nodes dark purple; lower nodes pubescent. **Vernation** convolute. **Blades** 10-30 cm long, 6-12 mm wide at base, flat, thin, tapering to long point, somewhat scabrous on upper surface, often papillose basally, otherwise glabrous; margin sparsely ciliate and minutely scabrous; veins numerous, indistinct; midrib prominent on lower surface. **Ligule** membranous, glabrous, thin, transparent, rounded with lacerate margins, 1.0-2.0 mm long. **Collar** sometimes greenish-purple, glabrous; ciliate on margin, not divided by midrib. **Auricles** absent. **Sheaths** longer than internodes, loose, slightly paler than blade, rounded in cross-section, split to near base with margins overlapping; margin long-ciliate toward apex. **Rhizomes** absent.

Distribution: This species is found in moist soils throughout the state, except the extreme western part.

Paspalum setaceum Michx. var. *stramineum* (Nash) D.J. Banks

(=P. stramineum Nash)

Yellow Sand Paspalum

Perennial 40-100 cm tall, yellowish-green, small-tufted, basally branched, erect or ascending to spreading, slender, often purplish toward the base. **Culms** glabrous, compressed; nodes pubescent. **Vernation** convolute. **Blades** 6-20 cm long, 6-15 mm wide, shorter toward upper part of the plant, drooping, narrowed and boat-shaped basally, glabrous to puberulent on both surfaces, often pilose toward base; margins scaberulous, often papillose basally. **Ligule** membranous, hyaline, irregularly toothed on the margin, about 1 mm long; short, white hairs occur immediately behind the ligule. **Collar** puberulent, wedge-shaped, usually purplish. **Auricles** absent. **Sheaths** no longer than internodes, loose, ciliate on margins, often pilose at the throat, striate, split, somewhat flattened in cross-section, keeled toward summit, often purplish toward base of plant. **Rhizomes** absent.

Distribution: Occurs on moist, sandy soils throughout the state.

Schedonnardus paniculatus (Nutt.) Trel.
Tumblegrass

Perennial 20-50 cm tall, leaves crowded at base, spreading to erect, tufted, branching from base. **Culms** slender, green to purplish, hollow, rigid, smooth, and glabrous; nodes glabrous. **Vernation** conduplicate or conduplicate clasping. **Blades** 2-6 cm long, 1-3 mm wide, flexuous, flat, becoming conduplicate toward tips, blunt pointed; upper surface scabrous, glabrous on lower surface; margins scabrous; midrib prominent below. **Ligule** acute, membranous, hyaline, 1.5-3.0 mm long; margin lacerate. **Collar** indistinct. **Auricles** absent. **Sheaths** loose, compressed, crowded toward the base of the plant, glabrous, scabrous on back of midvein, split, greenish-yellow in color; margins hyaline, continuous with ligule. **Rhizomes** absent.

Distribution: Occurs in dry grassland throughout the state.

Schizachyrium scoparium (Michx.) Nash
(=Andropogon scoparius Michx.)
Little Bluestem

Perennial 40-150 cm tall, tufted, erect, slender, much branched, often glaucous, green to reddish-purple in color. **Culms** glabrous; nodes glabrous. **Vernation** conduplicate. **Blades** 5-25 cm long, 3-7 mm wide, flat to conduplicate in cross-section, tapering to a narrow point, occasionally glabrous, but usually scabrous and pubescent on upper surface, hirsute toward the base; lower surface glabrous to sparingly pubescent; margins scabrous; veins raised above surface; midrib conspicuous, especially on lower surface. **Ligule** membranous with ciliate margins, truncate, 1.0-1.5 mm long. **Collar** somewhat thickened, rarely pubescent. **Auricles** absent. **Sheaths** shorter than internodes, flattened, pubescent at the throat, glabrous to pubescent, split; margins papery, often ciliate. **Rhizomes** short, if present.

Distribution: This species is the dominant grass over large areas of Oklahoma.

Sorghastrum nutans (L.) Nash
Indiangrass

Perennial 50-250 cm tall, tufted to sod-forming, unbranched, erect, and robust. **Culms** glabrous; nodes pubescent. **Vernation** convolute. **Blades** 10-30 cm long, 5-10 mm wide, often glaucous, thickened and narrowed toward base, U-shaped toward base, becoming flat toward long tapering apex, very scabrous on both surfaces and margin, rigid, somewhat keeled on lower surface toward base; margins often hispid; veins conspicuous; midrib broad and white. **Ligule** continuous with margins of sheath, bearing on each side a one-nerved spur, rounded in center, margin notched to entire, 2-4 mm long, pinkish-brown when young. **Collar** broad, pinkish, glabrous with occasional hairs on margins. **Auricles** absent. **Sheaths** longer than internodes below, shorter above, glabrous to pubescent, broader than the blades, often brownish-purple, split, rounded, striate, rigid, often keeled toward summit; margins membranous. **Rhizomes** creeping, scaly.

Distribution: This species is found in open woods and prairies, especially in moist habitats throughout the state.

Spartina pectinata Bosc ex Link
Prairie Cordgrass

Perennial 100-200 cm tall, erect, and unbranched. **Culms** robust, glabrous; nodes lanate-pubescent. **Vernation** convolute. **Blades** 60-100 cm long, 5-15 mm wide, thick, rigid, flat, becoming involute toward apex, attenuate, tapering to a long, slender point, glabrous except occasionally scaberulous on the upper surface; margins very scabrous; veins indistinct; midrib broad, keeled on lower surface. **Ligule** a fringe of hairs 1-2 mm long. **Collar** wedge-shaped, glabrous, and thickened. **Auricles** absent. **Sheaths** glabrous, overlapping and crowded below, firmly supporting the stem, round in cross-section, split, and firm. **Rhizomes** stout, creeping, and pointed.

Distribution: Occurs in colonies in swamps and low moist areas throughout most of the state.

Sporobolus compositus (Poir.) Merr.
(= *Sporobolus asper* (P. Beauv.) Kunth)
Rough Dropseed, Composite Dropseed

Perennial 50-120 cm tall, erect, tufted, simple, often stout. **Culms** often purplish, glabrous; nodes glabrous. **Vernation** conduplicate clasping. **Blades** 10-60 cm long, 1-4 mm wide, the upper short, the basal long, attenuate, flat, drooping, becoming involute toward the apex; upper surface occasionally pubescent; margin scabrous; veins prominent on upper and lower surface; midrib prominent. **Ligule** very short, less than 0.5 mm long, membranous with long-ciliate margin, the hairs equaling in length the membranous base. **Collar** wedge-shaped, long-ciliate on the margins. **Auricles** absent. **Sheaths** shorter than the internodes, glabrous, pilose at the throat, often inflated, contracted toward the summit, round in cross-section, split; margin papery. **Rhizomes** short, if present.

Distribution: This species occurs throughout the state; it is found on dry prairie soils and is abundant in some localities.

Sporobolus cryptandrus (Torr.) A. Gray
Sand Dropseed

Perennial 40-100 cm tall, semi-erect, branching from the base, and tufted. **Culms** glabrous; nodes glabrous. **Vernation** convolute. **Blades** 5-15 cm long, 3-6 mm wide, longer toward base, flat, tapering to a long involute point, soft in texture; the lower surface glabrous; the upper surface scaberulous; margins somewhat scabrous, hyaline; veins 4 each side of indistinct midrib. **Ligule** a fringe of very short hairs less than 0.5 mm long. **Collar** wedge-shaped, distinct, long-pilose basally and at margins. **Auricles** absent. **Sheaths** longer than internodes above, the lower shorter, striate, split, rounded in cross-section, pubescent on margin, conspicuously pilose at throat. **Rhizomes** absent.

Distribution: This species occurs in sandy soils throughout the state.

Sporobolus vaginiflorus (Torr. ex A. Gray) Alph. Wood
Poverty Dropseed, Poverty Grass

Annual 15-50 cm tall, slender, erect or spreading from a geniculate base, tufted, and branching. **Culms** somewhat rough; nodes glabrous. **Vernation** convolute. **Blades** much longer basally, the lower 3-15 cm long, the upper often less than 1 cm long, less than 3 mm wide, involute toward the tip, ascending, the upper surface scabrous, often sparsely pilose near base and on margins; margins scabrous; veins and midrib inconspicuous. **Ligule** a fringe of hairs, 1.0-1.5 mm long. **Collar** distinct, wedge-shaped, divided by midrib, sometimes sparsely pilose on margins. **Auricles** absent. **Sheaths** shorter than the internodes, somewhat scabrous, often pilose at the throat, wider than the blades, round in section, split, loose, swollen and enclosing cleistogamous spikelets late in the season; margins hyaline. **Rhizomes** absent.

Distribution: Occurs on dry soils throughout the state.

Tridens albescens (Vasey) Wooten & Standl.
(=Triodia albescens Vasey)
White Tridens

Perennial 40-70 cm tall, erect, loosely tufted. **Culms** usually simple, glabrous; nodes glabrous. **Vernation** convolute. **Blades** 15-30 cm long, 2-7 mm wide, basal longer than upper, slender, flat, soon becoming involute, tapering to narrow point; glabrous on upper surface, except pilose at base; margin slightly scabrous; veins indistinct; midrib prominent on upper and lower surface. **Ligule** a dense fringe of hairs 1.0-1.5 mm long. **Collar** thickened below, 1.5 mm wide, pilose on margins. **Auricles** absent. **Sheaths** shorter than internodes, round in cross-section, flexible, pilose at throat, otherwise glabrous, split. **Rhizomes** absent.

Distribution: This species occurs in moist habitats in the eastern half of the state; it is common, but not abundant.

Tridens flavus (L.) Hitch.
(=Triodia flava (L.) Hitch.
Purpletop Tridens

Perennial 60-150 cm tall, semi-erect, and tufted. **Culms** simple, elliptical in cross-section toward base of plant; nodes glabrous, often purple. **Vernation** conduplicate. **Blades** 10-30 cm long, upper shorter, 3-12 mm wide, flat, boat-shaped near base, pointed toward apex, drooping; upper surface scabrous, pubescent toward base; margin scaberulous; midrib prominent below. **Ligule** a fringe of short hairs 0.5 mm long. **Collar** divided by midrib, pubescent on lower surface and on ends. **Auricles** absent. **Sheaths** shorter than internodes, overlapping at base, loose, glabrous, except occasionally pubescent on lower sheaths, pubescent at throat, oval in cross-section, split; ribs inconspicuous; margin hyaline. **Rhizomes** short, stout.

Distribution: Occurs in dry meadows throughout the state.

Tridens strictus (Nutt.) Nash
(= *Triodia stricta* (Nutt.) Benth.)
Longspike Tridens

Perennial 50-150 cm tall, tufted, erect, usually stout, sometimes branched. **Culms** glabrous, striate, sometimes purplish-green. **Vernation** convolute. **Blades** 10-60 cm long, 3-7 mm wide, elongate, flat to loosely involute, smooth, glabrous except pubescent on upper surface at base; margin glabrous; veins indistinct; midrib a broad band 1 mm wide, not distinct. **Ligule** a fringe of loose hairs 1-2 mm long. **Collar** indistinct, narrow, pubescent. **Auricles** absent. **Sheaths** longer or shorter than internodes, loose, somewhat striate, oval in cross-section, glabrous, sometimes pubescent at throat, split. **Rhizomes** absent.

Distribution: Occurs in moist soil in the eastern half of the state.

Tripsacum dactyloides (L.) L.
Eastern Gamagrass

Perennial 100-200 cm tall, robust, occurring in large tufts, branched, with many sterile shoots arising from the base. **Culms** flattened, glabrous; nodes glabrous. **Vernation** convolute. **Blades** 30-60 cm long, 10-30 mm wide, variable, those of the basal sterile shoots much longer than those of the flowering culms, flat, tapering to a fine point, truncate at the base, usually scabrous on the margin and on both surfaces, glabrous except sometimes sparsely hispid on the upper surface; veins raised above the surface; midrib broad and white. **Ligule** collar-like, bearing a fringe of minute hairs less than 0.4 mm long. **Collar** narrow, distinct, glabrous. **Auricles** absent. **Sheaths** shorter than internodes, those of the sterile shoots much shorter than the blades, often wider than the blades, glabrous, yellowish-green, strongly flattened, with a prominent midrib, striate, constricted at the collar. **Rhizomes** thick, knotty, and often woody.

Distribution: Occurs in wet habitats throughout the state.

Zizaniopsis miliacea (Michx.) Döll & Asch.
Water Millet, Giant Cutgrass

Perennial 1-4 m tall, robust, marsh-inhabiting. **Culms** flattened, glabrous; nodes glabrous. **Vernation** convolute. **Blades** 30-150 cm long, 1-2 cm wide, narrowed and thickened toward base, yellowish-green basally, keeled and pithy toward base, otherwise flat, glabrous throughout except the scabrous margins; midrib stout, white, and pithy, especially toward base; veins not conspicuous. **Ligule** membranous, hyaline, thin, rounded, 6-15 mm long; margin entire in younger leaves. **Collar** prominent, glabrous, relatively narrow, wedge-shaped, not divided. **Auricles** absent. **Sheaths** compressed toward summit, greenish-yellow, thick and pithy, usually longer than internodes, split; margins hyaline and continuous with ligule. **Rhizomes** stout and creeping.

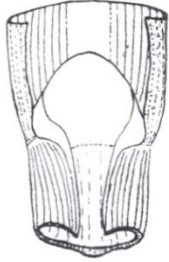
Distribution: Occurs in colonies along stream banks and in swamps primarily in the southeastern part of the state.

LITERATURE CITED

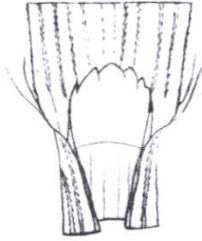
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PLATES

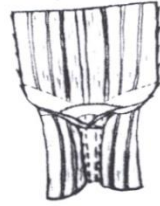
[Ed. Note: These plates are presented as they were in the original thesis.]



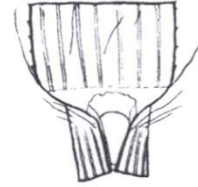
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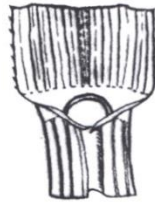
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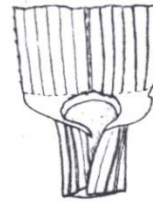
3. *Agropyron
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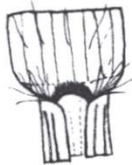
4. *Hordeum
pusillum*



5. *Elymus virginicus*



6. *Elymus canadensis*



7. *Buchloe
dactyloides*



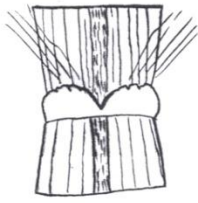
8. *Leptochloa
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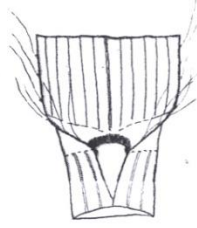
9. *Spartina
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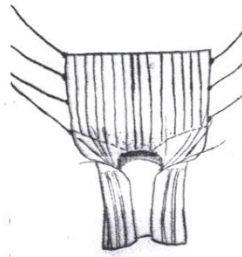
10. *Schedomardus
paniculatus*



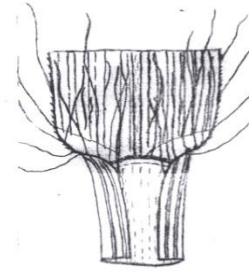
11. *Chloris verticillata*



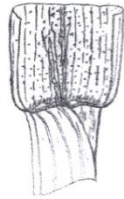
12. *Bouteloua gracilis*



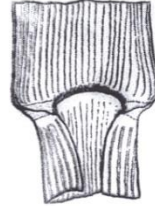
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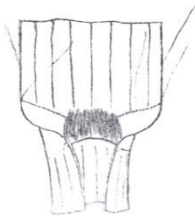
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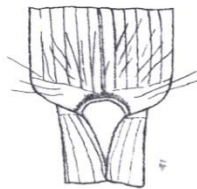
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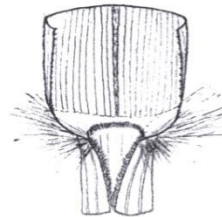
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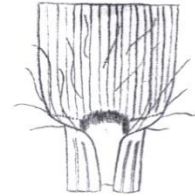
17. *Sporobolus vaginiflorus*



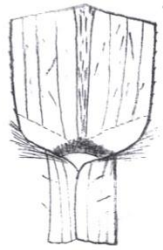
18. *Sporobolus asper*



19. *Sporobolus cryptandrus*



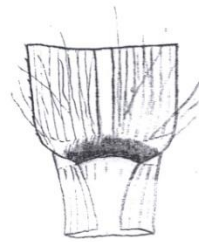
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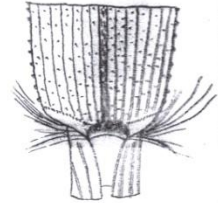
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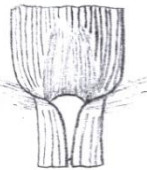
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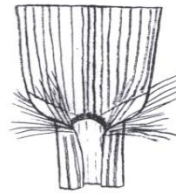
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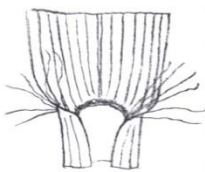
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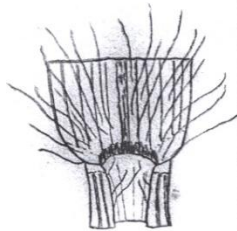
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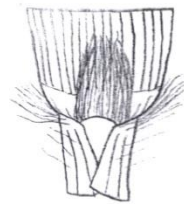
26. *Eragrostis curtispicellata*



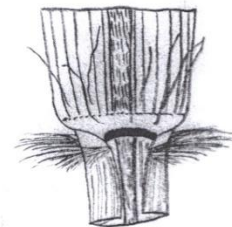
27. *Eragrostis secundiflora*



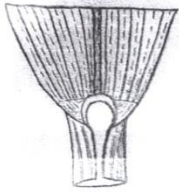
28. *Eragrostis lugens*



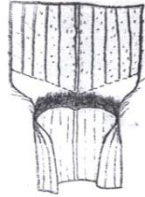
29. *Eragrostis spectabilis*



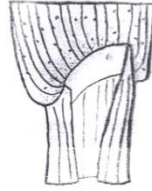
30. *Eragrostis trichodes*



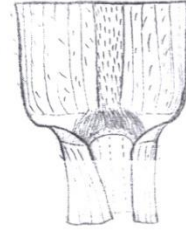
31. *Uniola latifolia*



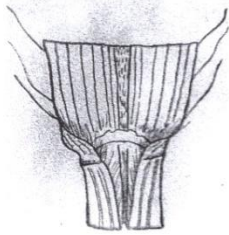
32. *Cenchrus pauciflorus*



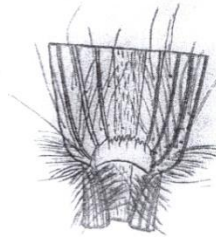
33. *Leptoloma cognatum*



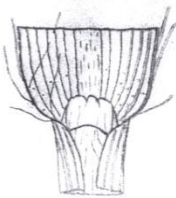
34. *Eriochloa contracta*



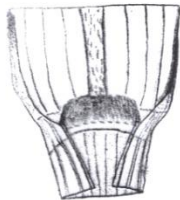
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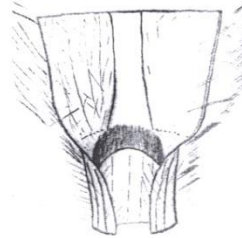
36. *Paspalum floridanum*



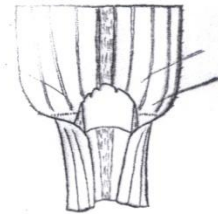
37. *Paspalum pubiflorum* var. *glabrum*



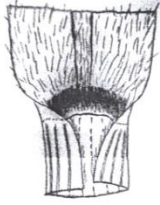
38. *Panicum dichotomiflorum*



39. *Panicum capillare*



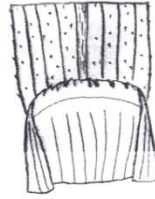
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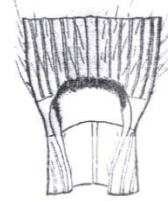
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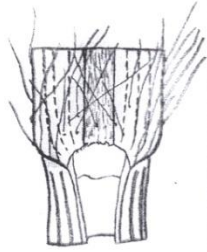
42. *Tripsacum dactyloides*



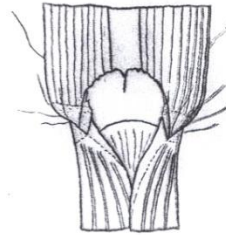
43. *Rottboellia cylindrica*



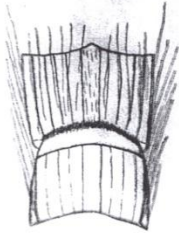
44. *Andropogon scoparius*



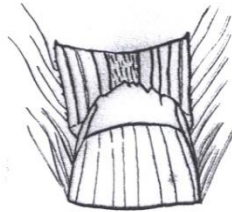
45. *Andropogon furcatus*



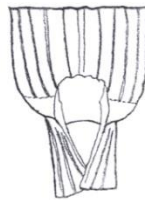
46. *Andropogon hallii*



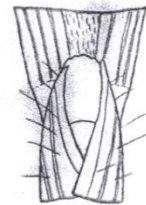
47. *Andropogon virginicus*



48. *Andropogon ternarius*



49. *Andropogon saccharoides*



50. *Sorghastrum nutans*

APPENDIX

ALPHABETICAL LIST OF THE SPECIES DESCRIBED IN THE REPORT

Current Species Name	Plate Number
<i>Andropogon gerardii</i>	45
<i>Andropogon hallii</i>	46
<i>Andropogon ternaries</i>	48
<i>Andropogon virginicus</i>	47
<i>Aristida oligantha</i>	15
<i>Bothriochloa laguroides</i>	49
<i>Bouteloua curtipendula</i>	14
<i>Bouteloua gracilis</i>	12
<i>Bouteloua hirsute</i>	13
<i>Buchloe dactyloides</i>	7
<i>Calamovilfa gigantea</i>	16
<i>Cenchrus spinifex</i>	32
<i>Chasmanthium latifolium</i>	31
<i>Chloris verticillata</i>	11
<i>Coelorachis cylindrical</i>	43
<i>Digitaria cognate</i>	33
<i>Distichlis spicata</i>	20
<i>Elymus canadensis</i>	6
<i>Elymus virginicus</i>	5
<i>Eragrostis cilianensis</i>	24
<i>Eragrostis curtipedicellata</i>	26
<i>Eragrostis lugens</i>	28
<i>Eragrostis secundiflora</i>	27
<i>Eragrostis sessilis</i>	25
<i>Eragrostis spectabilis</i>	29
<i>Eragrostis trichodes</i>	30
<i>Eriochloa contracta</i>	34
<i>Hilaria jamesii</i>	2
<i>Hordeum pusillum</i>	4
<i>Leptochloa panicea</i>	8
<i>Panicum capillare</i>	39
<i>Panicum dichotomiflorum</i>	38
<i>Panicum obtusum</i>	40
<i>Panicum virgatum</i>	41
<i>Pascopyrum smithii</i>	3
<i>Paspalum floridanum</i>	36
<i>Paspalum pubiflorum</i> var. <i>glabrum</i>	37
<i>Paspalum setaceum</i> var. <i>stramineum</i>	35
<i>Schedonnardus</i> <i>paniculatus</i>	10

<i>Schizachyrium scoparium</i>	44
<i>Sorghastrum nutans</i>	50
<i>Spartina pectinata</i>	9
<i>Sporobolus compositus</i>	18
<i>Sporobolus cryptandrus</i>	19
<i>Sporobolus vaginiflorus</i>	17
<i>Tridens albescens</i>	23
<i>Tridens flavus</i>	21
<i>Tridens strictus</i>	22
<i>Tripsacum dactyloides</i>	42
<i>Zizaniopsis miliacea</i>	1