



2018 NCWSS WEED CONTEST

July 26, 2018 – North Platte, NE

**Maxwel Coura Oliveira
Rodrigo Werle**



Weed Identification



Amaranthaceae

Pigweed Family

tumble pigweed

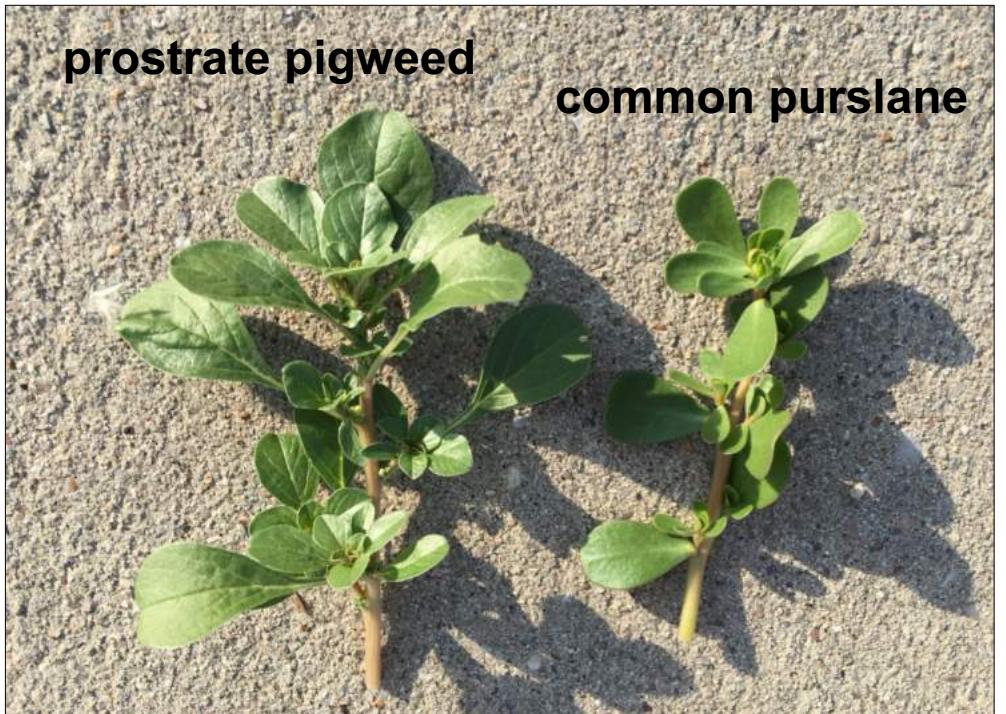
- **Scientific name:** *Amaranthus albus*
- **Life cycle:** Summer annual
- **Cotyledons:** Green, hairless
- **Leaves:** simple, alternate (0.5 – 3 cm long), 0.5-1.5 cm wide, glabrous, pale green, petioled.
- **Stems:** Erect or decumbent, up to 1 m tall, highly branched, usually hairless, whitish to pale green.
- **Flower:** monoecious (male or female; sexes are found in different plants), short dense axillary clusters, not terminal, bracts rigid, sepals uneven.



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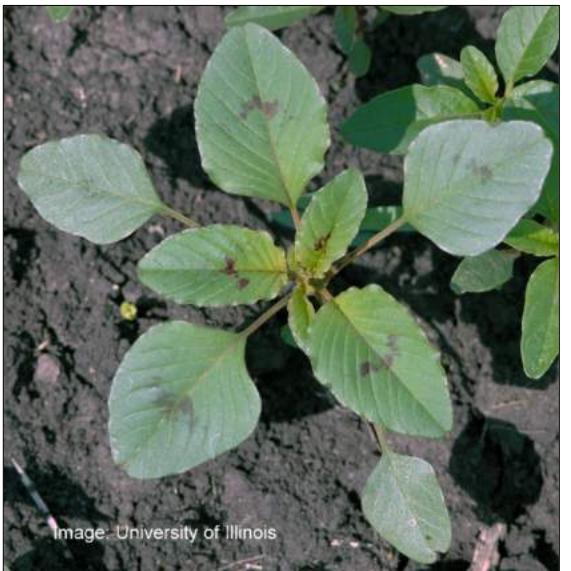
prostrate pigweed

- **Scientific name:** *Amaranthus blitoides*
- **Life cycle:** Summer annual
- **Cotyledons:** long, narrow, lower surface red, upper surface shiny, hairless, first leaf indented at tip.
- **Leaves:** simple, alternate, 1-4 cm long, 0.5-1.5 cm wide, ovate, shiny, broadest at tip.
- **Stems:** Prostrate with erect tips, fleshy, nearly smooth, reddish, branched at base and less frequently apically,
- **Flower:** monoecious, dense axillary clusters, not terminal, bracts oblong to lanceolate.



Palmer amaranth

- **Scientific name:** *Amaranthus palmeri*
- **Life cycle:** Summer annual
- **Cotyledons:** linear, hairless
- **Leaves:** simple, alternate, glabrous, long-petiolate, lanceolate shaped or egg-shaped, entire margins, first true leaves ovate in shape and are slightly notched at the tip of the leaf blade
- **Stems:** Erect, branched
- **Flower:** dioecious (flowers are either male or female; sexes are found on the different plants)



redroot pigweed

- **Scientific name:** *Amaranthus retroflexus*
- **Life cycle:** Summer annual
- **Cotyledons:** linear, hairless, petioled
- **Leaves:** Simple, alternate, petioled, pubescent attachment, ovate to lanceolate shape (broader than waterhemp), entire to toothed margins, appear ‘crinkled’, surface may be pubescent on both sides, prominent veins
- **Stems:** erect, reddish color, pubescent, may have lines or ridges
- **Flower:** monoecious



spiny amaranth

- **Scientific name:** *Amaranthus spinosus*
- **Life cycle:** Summer annual
- **Cotyledons:** Hypocotyl red to green, hairless, green, spoon-or dish-shaped.
- **Leaves:** smooth and hairless, sometimes shiny. Leaf blades ate egg-shaped to diamond shaped with the border end closest to the stem. Petiole approximately as long as the blade.
- **Stems:** Erect, 0.4-1.5 m tall, branched hairless, pair of sharp spines at nodes 5-10 mm long.

Troublesome weed of vegetables, row crops and pasture in warm climates



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waterhemp

- **Scientific name:** *Amaranthus tuberculatus* var. *rudis*
- **Life cycle:** Summer annual
- **Cotyledons:** linear, hairless
- **Leaves:** simple, alternate, petioled attachment, lanceolate shape, narrow and long, entire to undulate margins, rounded or blunt tips, hairless surface
- **Stems:** Erect to ascending, hairless, smooth
- **Flower:** dioecious (flowers are either male or female; sexes are found on the different plants)



Apiaceae

Parsley Family

poison-hemlock

- Scientific name:** *Conium maculatum*
- Life cycle:** Biennial
- Cotyledon:** Oblong-lanceolate, first leaf pinnately, compound, reddish, hairless.
- Leaves:** Smooth and hairless. Complexity - pinnately divided. Attachment – petiolate. Arrangement - alternate, can be opposite above. Fern-like, leaflets are toothed to pinnately divided, oblong to lanceolate leaflets
- Stem:** Erect, highly branched, ridged with purple blotches, hollow between nodes



wild carrot

- **Scientific name:** *Daucus carota*
- **Life cycle:** Biennial
- **Cotyledon:** Linear, smooth, first lead pinnately decomound.
- **Leaves:** Alternate leaves occur sparingly along the central stem. The upper surface of these leaf segments is light-medium green and glabrous, while the lower surface is light green and glabrous to sparsely hairy
- **Stem:** erect, to 1.5 m tall, freely branched, hairless.
Vertically veined, terete, hollow, nearly glabrous to spreading-hairy, and sparingly branched



Apocynaceae

Dogbane Family

hemp dogbane

- **Scientific name:** *Apocynum cannabinum*
- **Life cycle:** Perennial
- **Leaves:** Broadly elliptic to broadly elliptic-oblong in shape and smooth (entire) along their margins. Leaves are sessile and opposite
- **Stem:** Erect, central. The stems are light green to red, terete, glabrous, and sometimes glaucous. At intervals along these stems, there are pairs of opposite leaves.

Stems and leaves contain a milky sap that is bitter-tasting and toxic



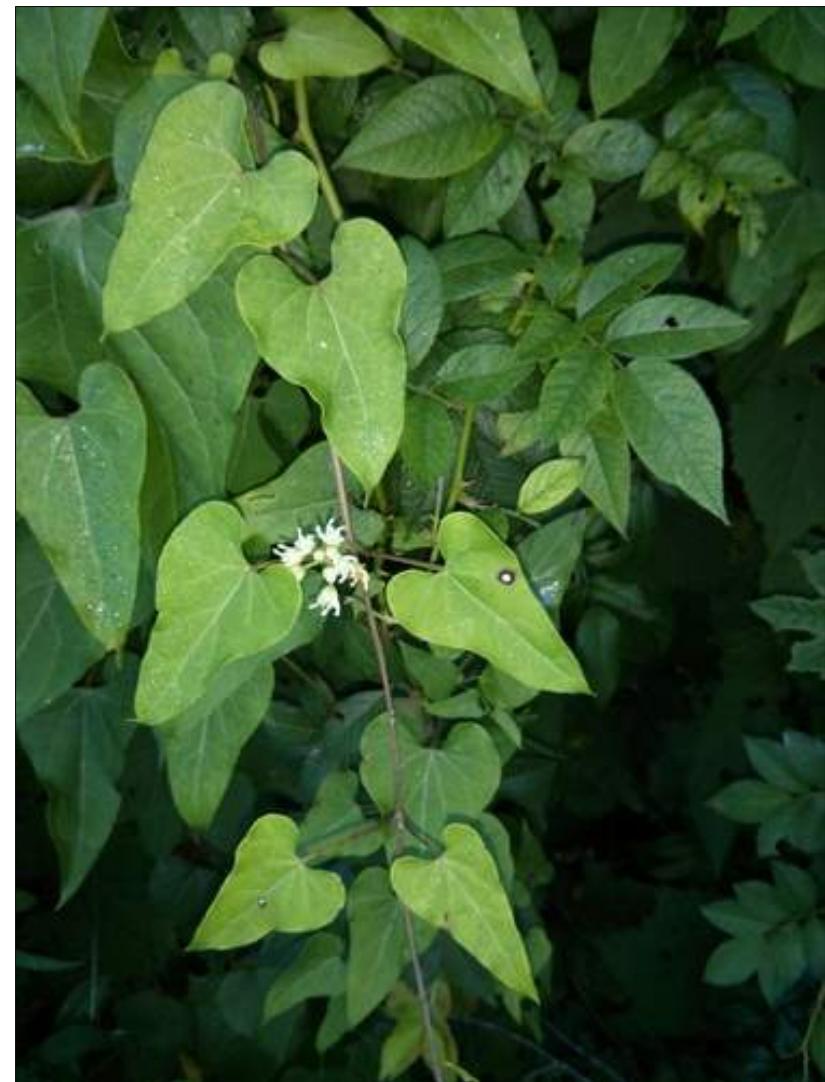
Asclepiadaceae

Milkweed Family

honeyvine milkweed

- **Scientific name:** *Ampelamus albidus*
- **Cotyledons:** Oval-shaped
- **Leaves:** Opposite, smooth leaves that are heart-shaped and lack serration, long petioles. Very similar to morningglories and bindweeds

honeyvine milkweed does not contain a milky sap



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common milkweed

- **Scientific name:** *Asclepias syriaca*
- **Cotyledons:** Oblong
- **Leaves:** Simple, opposite, entire, ovate, fine pubescence below, glabrous above, petiolate
- **Stem:** Erect, sparingly branched, pubescent



Asteraceae

Sunflower Family

common ragweed

- **Scientific name:** *Ambrosia artemisiifolia*
- **Life cycle:** Summer annual
- **Cotyledons:** Spatulate with no visible veins
- **Leaves:** Bi-pinnately dissected, fern like in appearance. Opposite or alternate arrangement. Serrate margins. Pubescent lower leaves
- **Stem:** Erect, pubescent



giant ragweed

- **Scientific name:** *Ambrosia trifida*
- **Life cycle:** Summer annual
- **Cotyledons:** Somewhat club-shaped
- **Leaves:** Simple. Opposite arrangement. 3 to 5 lobes.
Serrate margins. Scabrous surface with tiny hairs
- **Stem:** Erect, branching above, coarse, sometimes pubescent



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common burdock

- **Scientific name:** *Arctium minus*
- **Life cycle:** Biennial forb
- **Cotyledons:** Elliptical, dull green with purplish stem
- **Leaves:** Dull green on top, whitish green on bottom.
Deep venations. Rosette of basal leaves 1st year, 2nd year
grows 3-6 feet tall
- **Stem:** Long petioles, leaves resemble rhubarb
- **Flowers:** Thistle-like, rose to purple



musk thistle

- **Scientific name:** *Carduus nutans*
- **Life cycle:** Biennial
- **Cotyledons:** Oblong with little to no petioles (sessile); distinctive white veins on their upper surface
- **Leaves:** Alternate arrangement. Lobed with a smooth, waxy surface and sharp whitish spines at the tips of the lobes
- **Stem:** Erect, branched, with spines



Canada thistle

- **Scientific name:** *Cirsium arvense*
- **Life cycle:** Perennial
- **Leaves:** Alternate, sessile, simple, oblong to lanceolate. Leaves are irregularly lobed, developing into triangular indentations with age, with spiny margins. Upper surface of mature leaves is dark green and hairless, while the lower surface is light green in color and may be with or without hairs
- **Stem:** 2 to 4 feet tall, no spines, glabrous early but become pubescent near maturity
- **Flowers:** 3/4 to 1 ¼ inch wide and are pink to purple in color surrounded by spineless bracts



bull thistle

- Scientific name:** *Cirsium vulgare*
- Life cycle:** Biennial
- Leaves:** Arranged alternately on the flowering stem, lanceolate with deeply cut margins and stiff spines on the lobes. Leaves are coarsely hairy on the upper side and contain softer whitish hairs below
- Stem:** Spines, branching

Often confused with musk thistle, but the leaves of mature musk thistle plants usually lack hairs



horseweed

- **Scientific name:** *Conyza canadensis*
- **Cotyledons:** Round to ovate
- **Leaves:** Many leaves, no petiole
- **Stem:** Covered with bristly hairs; branched at top



common sunflower

- **Scientific name:** *Helianthus annuus*
- **Life cycle:** Summer annual
- **Cotyledons:** Short and circular, ovate, no hair, prominent mid vein
- **Leaves:** Simple. Upper leaves alternate, opposite below. Ovate to lanceolate shape. Both sides pubescent, scabrous. Long petioles for attachment. Finely toothed to nearly entire margins
- **Stem:** Erect with coarse pubescence, branched above



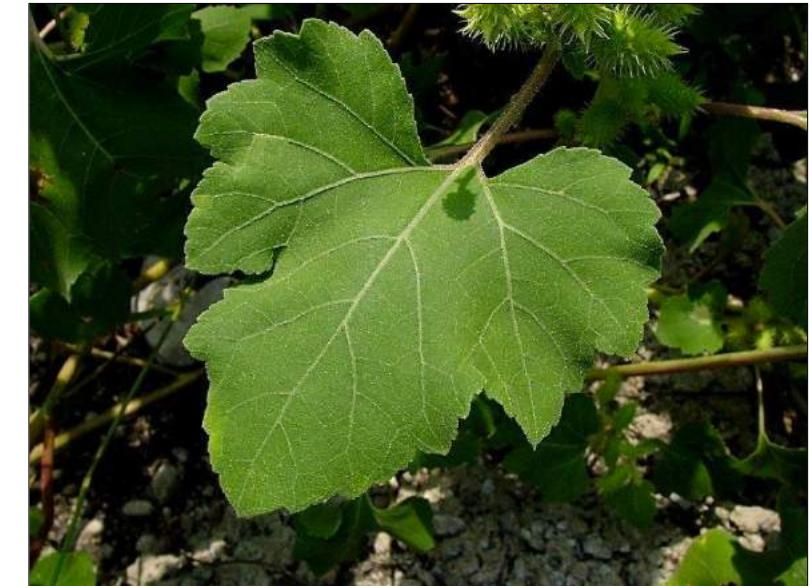
dandelion

- **Scientific name:** *Taraxacum officinale*
- **Life cycle:** Perennial
- **Cotyledons:** Somewhat club-shaped, small
- **Leaves:** simple. Arranged in a basal rosette. Oblanceolate shape. Variously lobed margins, terminal lobe generally largest. Lightly hairy surface, especially lower surface and midvein
- **Stem:** Hollow, 1 to few in number, glabrous or slightly hairy, contains a milky juice



common cocklebur

- **Scientific name:** *Xanthium strumarium*
- **Life cycle:** Summer annual
- **Cotyledons:** Thick, leathery surface, oblong to lanceolate shape, longer and narrower than common sunflower
- **Leaves:** Simple. Upper leaves alternate, opposite below. Broadly ovate. Dentate margins, sometimes shallowly lobed. Pubescent surface. Long petioled
- **Stem:** Erect, scabrous, purplish dots and tinge, sparsely branched



prickly lettuce

- **Scientific name:** *Lactuca serriola*
- **Life cycle:** Winter annual or biennial herb.
- **Cotyledons:** Leaves forming a basal rosette, clasping petioles, spiny edges, pale green, prominent midvein.
- **Leaves:** Alternate, oblong-lanceolate, glaucous, clasping, stem with base extended into pair or hastate projections, lobed or wavy, margins toothed or wavy, midveins prickly underneath.
- **Stem:** Erect, 1-2 m tall, pale green or straw-colored, hollow, lower stem often prickly, milk sap.



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Scrophulariaceae

Figwort Family

common mullein

- **Scientific name:** *Verbascum thapsus*
- **Life cycle:** Biennial herb.
- **Cotyledons:** Rosette leaves extremely fuzzy, margins slightly serrate.
- **Leaves:** Basal rosette, 15-45 cm long, oblong, tapering to petiole, dense wooly pubescent, stem leaves smaller and more pointed, yellow-green, margin attached to stem and continuing down to next leaf.
- **Stem:** Erect, 0.9-1.8 m tall, thick, rarely branched, stout, pubescent, woolly, trichomes branched or stellate.



Virginia Tech Weed ID Guide



Brassicaceae

Mustard Family

shepherd's purse

- **Scientific name:** *Capsella bursa-pastoris*
- **Life cycle:** Winter annual
- **Cotyledons:** Narrowly football shaped with a rounded tip with tiny granules on the surface
- **Leaves:** Alternate, typically toothed to deeply lobed, and lightly covered with hairs



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wild mustard

- **Scientific name:** *Sinapis arvensis*
- **Life cycle:** Annual (winter or summer)
- **Cotyledons:** Small, butterfly shaped
- **Leaves:** Simple. Alternate arrangement. Ovate to lanceolate shape, upper leaves become smaller. Irregularly lobed. Hairy surface
- **Stem:** Erect, hairy, branching above



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field pennycress

- **Scientific name:** *Thlaspi arvense*
- **Life cycle:** Annual (winter or summer)
- **Cotyledons:** Oblong, petiolate
- **Leaves:** Simple. Petiolate attachment below, sessile and clasping attachment above. Alternate arrangement, lower blades in rosette. Lower blades spatulate with rounded tip, upper blades oblong-elliptic with pointed tip. Lower blades entire to coarsely toothed margins, upper blades coarsely toothed. Glabrous surface
- **Stem:** Erect, branched or simple, smooth



Caryophyllaceae

Pink Family

mouseear chickweed

- **Scientific name:** *Cerastium vulgatum*
- **Life cycle:** Perennial
- **Cotyledon:** Green, 2-7 mm long, 0.5-2 mm wide, initially with minute pubescent above.
- **Leaves:** Opposite, dull green, oval to elliptic, weakly nerved, upper surface and beneath pubescent.
- **Stem:** Erect to spreading, 5-50 cm tall, slender, weak, prostrate basally, pubescent, trichomes long, sticky.



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common chickweed

- **Scientific name:** *Stellaria media*
- **Life cycle:** Summer or winter Annual
- **Leaves:** Become larger toward the tips of the stems, spanning up to $\frac{3}{4}$ " in length and $\frac{1}{2}$ " across. Leaves toward the base of the plant usually have short petioles that are slightly hairy, while the leaves near the tip of each stem are usually sessile. Oval-ovate, entire (toothless) along their margins, and hairless on the upper surface; the lower surface is occasionally hairy
- **Stem:** about $\frac{1}{2}$ –1' long that usually sprawl across the ground. It branches abundantly near the base, but very little toward the tips of the stems. Succulent stems green or burgundy. Normally have line of white hairs





Common chickweed



Mouse-ear chickweed

Chenopodiaceae

Goosefoot Family

common lambsquarters

- **Scientific name:** *Chenopodium album*
- **Life cycle:** Summer annual
- **Cotyledons:** Linear and small
- **Leaves:** Simple. Petiolate attachment. Alternate arrangement (can be opposite below). Lanceolate, somewhat triangular shape. Toothed to entire margins. Glaucous surface, white mealy granules that look like frost
- **Stem:** Erect, glabrous, often with red or light green stripes



kochia

- **Scientific name:** *Kochia scoparia*
- **Life cycle:** Summer annual
- **Cotyledons:** Attachment – sessile. Shape – linear
- **Leaves:** Complexity – simple. Attachment - petiolate (short). Arrangement – alternate. Shape - linear to ovate. Margins - entire, fringed w/ hairs
- **Stem:** Erect, reddish, glabrous to pubescent



Russian-thistle

- **Scientific name:** *Salsola tragus*
- **Life cycle:** Summer annual
- **Stem:** Usually red or purple striped



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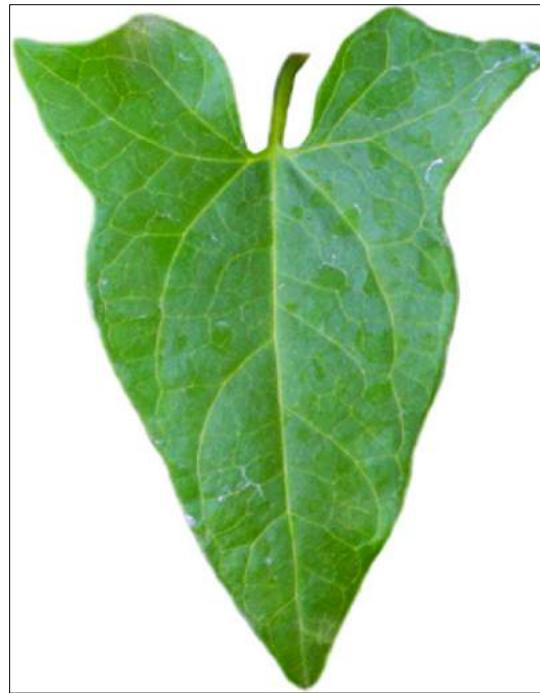


Convolvulaceae

Morningglory Family

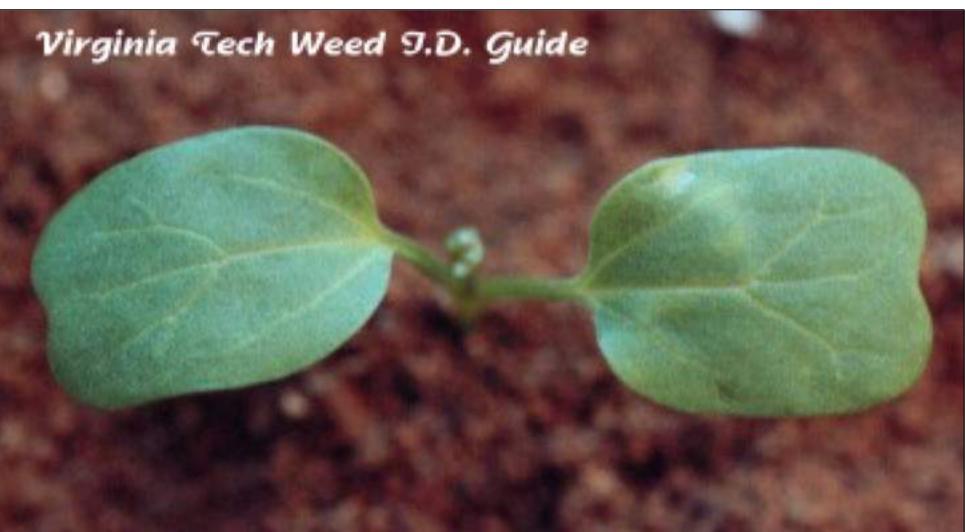
hedge bindweed

- **Scientific name:** *Calystegia sepium*
- **Life cycle:** Perennial vine
- **Leaves:** Arrowhead-shaped with pointed tips but larger than field bindweed. Seedlings have a red-dull stem, initial leaves have smooth edges later emerging leaves have wavy edges



field bindweed

- **Scientific name:** *Convolvulus arvensis*
 - **Life cycle:** Perennial
 - **Cotyledons:** Square with a notch on the end
 - **Leaves:** Arrow shaped with flat petioles that have a groove on the upper surface
 - **Stem:** Prostrate vine unless it finds another plant or structure to climb
- Key Identifier:** Bracts $\frac{1}{2}$ to 1 inch below the flower



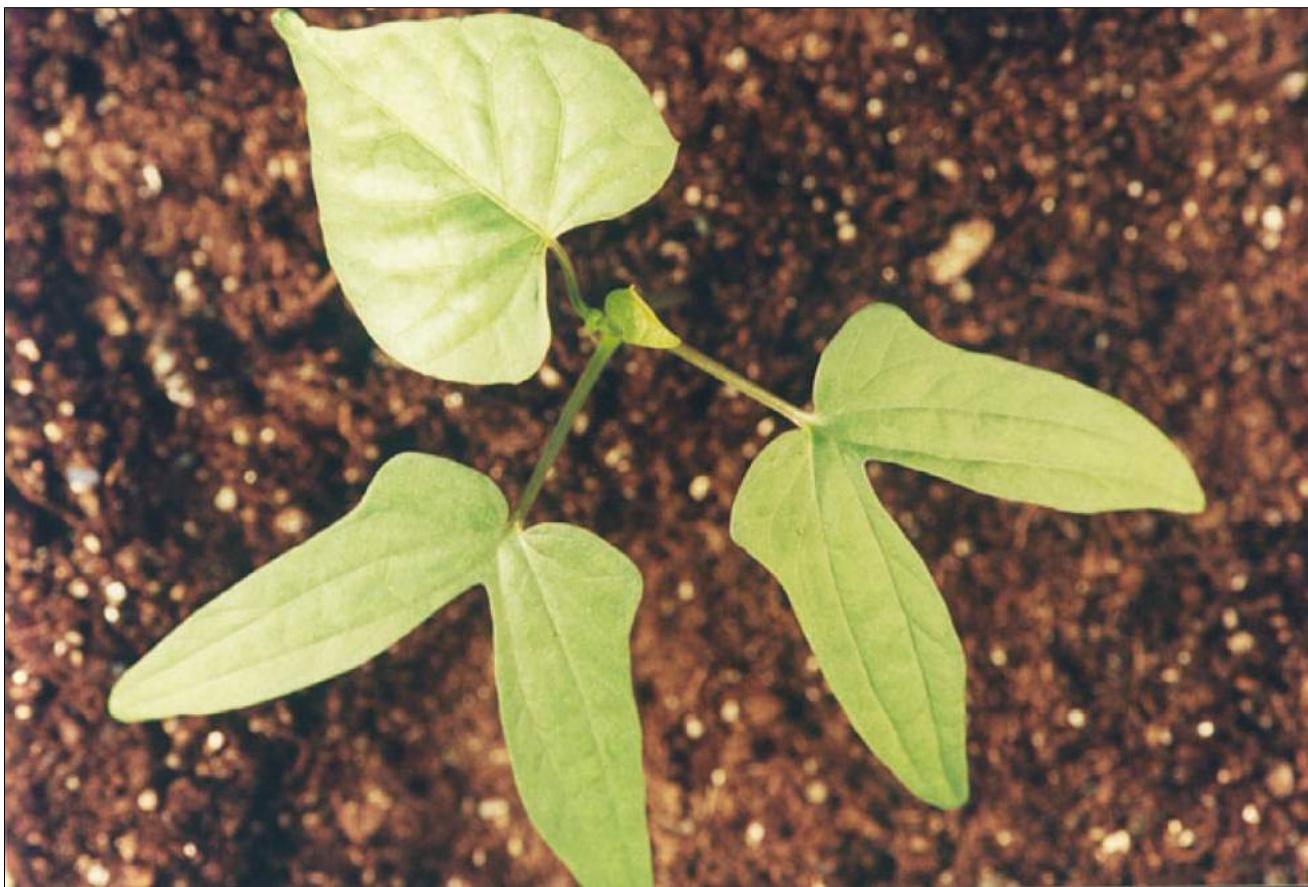
ivyleaf morningglory

- **Scientific name:** *Ipomoea hederacea*
- **Life cycle:** Annual
- **Cotyledons:** Butterfly shaped
- **Leaves:** Alternate, simple. 3 (sometimes 5) lobes. Ovate, lobes distinct and pointed, pubescent
- **Stem:** twining, climbing, pubescent
- **Flower:** Large light blue, funnel. Shaped



pitted morningglory

- **Scientific name:** *Ipomoea lacunosa*
- **Life cycle:** Annual
- **Cotyledons:** Deeply indented, lobes long and pointed, hairless.
- **Leaves:** Alternate, simple, variably cordate to 3-5 lobed.
- **Stem:** twining, climbing, pubescent
- **Flower:** Funnel



tall morningglory

- **Scientific name:** *Ipomoea purpurea*
- **Life cycle:** Annual
- **Cotyledons:** Butterfly shaped, moderately indented with round lobes.
- **Leaves:** Alternate, simple, cordate.
- **Stem:** twining, climbing, pubescent
- **Flower:** Purple, funnel shaped.



Cucurbitaceae

Gourd Family

burcucumber

- **Scientific name:** *Sicyos angulatus*
- **Life cycle:** Summer annual vine
- **Leaves:** Alternate, orbicular-angular with 3-5 palmate lobes (shallow to moderate deep). Leaf margins are slightly serrated
- **Stem:** Light green, terete, furrowed and quite hairy
Upper surface is yellowish green or medium green and relatively hairless, while the lower surface is finely pubescent specially along the lower veins. Leaf blade is strongly indented at the base where it is connected to the petiole. Occasionally branched tendrils. Surface of the fruits is covered with sharp spines along white hairs.



Cuscutaceae

Dodder Family

field dodder

- **Scientific name:** *Cuscuta pentagona*
- **Leaves:** tiny and scale-like or absent altogether
- **Stem:** hairless and slender, typically yellow to bright orange

Along the stem are small appendages (haustoria), modified roots that penetrate the host plant and draw moisture and nutrients from it



Cyperaceae

Sedge Family

yellow nutsedge

- **Scientific name:** *Cyperus esculentus*
- **Life cycle:** Perennial
- **Leaves:** Most basal, 3-ranked, crowded, pale green without hair
- **Stem:** Triangle shape solid and nodeless and appear waxy
- **Flowers:** Spikelets, slender, florets highly reduced, rachilla winged
- **Roots:** Fibrous roots and scaly rhizomes, some rhizomes terminating in hard tubers or nutlets

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Zygophyllaceae

Caltrop Family

pucturevine

- Scientific name:** *Tribulus terrestris*
- Life cicle:** Summer annual
- Cotyledon:** Oblong, twice wide as long, slightly pubescent.
- Leaves:** Opposite, compound, short-petioled, pubescent, leaflets.
- Stem:** Prostrate, pubescent.



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Equisetaceae

Horsetail Family

field horsetail

- **Scientific name:** *Equisetum arvense*
- **Life cycle:** Perennial

Jointed central stalk that is light brown, terete, glabrous, and about $\frac{1}{4}$ " (6 mm.) across in diameter;

This stalk terminates in a spore-bearing cone about $\frac{3}{4}$ – $1\frac{1}{4}$ " long; the cone is lanceoloid-oblongoid in shape and rounded at its apex.



Martyniaceae

Martyniaceae Family

devil's claw

- **Scientific name:** *Proboscidea louisianica*
- **Cotyledon:** Oblong, entire, short-petiolated.
- **Leaves:** Alternate, round to cordate, pubescent, clammy, heavy odor.
- **Stem:** Erect or decumbent, thick, fleshy.





Euphorbiaceae

Spurge Family

leaf spurge

- **Scientific name:** *Euphorbia esula*
- Cotyledon: Linear, hairless, grayish green, leaves alternate, appearing opposite at first.
- **Leaves:** Linear to slightly oblong and alternate on the stem
- **Stem:** Hairless, pale- to blue-green

When the plant is injured, a milky sap flows from the injury



Fabaceae

Bean Family

black medic

- **Scientific name:** *Medicago lupulina*

- **Leaves:** Leaves are compound in 3s, alternately attached on stalks up to 1½ inch long. Leaflets are oval to diamond shaped, typically rounded at the tip and wedge-shaped at the base, hairy to varying degrees, and the end leaflet longer stalked than the lateral leaflets. The tip end of a leaflet may have fine teeth around the edge.

- **Stem:** sprawling to ascending, much branched, angled, and densely covered in fine white hairs but may become smoother with age.

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Lamiaceae

Mint Family

ground ivy

- **Scientific name:** *Glechoma hederacea*
- **Life cycle:** Perennial
- **Leaves:** Opposite (2 leaves per node) round to kidney-shaped, scalloped edges. Kidney-shaped leaves that have scalloped edges
- **Stem:** Creeping stem that sprawl over the soil surface forming a thick mat and crowding out other plants. Also roots form at nearly every node
- **Flowers:** Purplish-blue
Mint-like appearance with square stems and 2 leaves each node.



<http://botanika.wendys.cz>

henbit

- **Scientific name:** *Lamium amplexicaule*
- **Life cycle:** Winter annual
- **Leaves:** Opposite. Broad, egg shaped. Blunt toothed margins. Prominent veins on underside. Upper leaves sessile
- **Stem:** Greenish to purple square, soft and finely hairy
- **Flowers:** Spring. Reddish purple



Liliaceae

Lily Family

wild garlic

- **Scientific name:** *Allium vineale*
- **Life cycle:** Perennial plant unbranched
- **Leaves:** Leaf is more or less round in circumference, becoming slightly flattened on the upper side toward the base, where it wraps around the stem
- **Stem:** Central stem is round and hairless, terminates in a long naked stalk of flowers and/or aerial bulblets. Along the lower half of the stem, there are a few alternate leaves linear and sword-shaped, hollow on the inside toward the base, and hairless

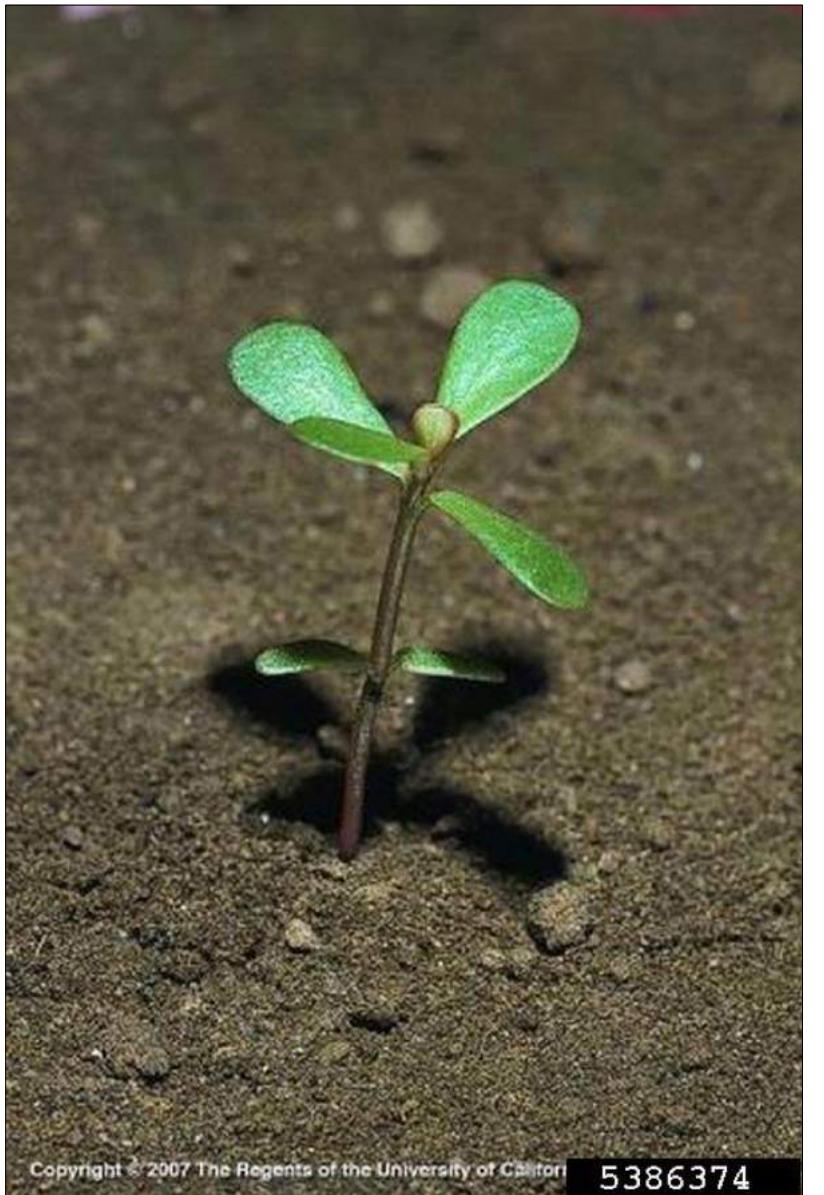


Portulacaceae

Purslane Family

common purslane

- **Scientific name:** *Portulaca oleracea*
- **Life cycle:** Summer annual
- **Cotyledon:** Linear, hairless, purplish red, young leaves appearing opposite with each succeeding pair oriented 90 degrees from proceeding pair.
- **Leaves:** Alternate or nearly opposite, spatulate or obovate, margins smooth, succulent.
- **Stem:** Prostrate, hairless, succulent, fleshy, rooting at nodes of fragmented stems.



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Malvaceae

Mallow Family

velvetleaf

- **Scientific name:** *Abutilon theophrasti*
- **Life cycle:** Summer annual
- **Cotyledons:** Orbicular (somewhat rounded)
- **Leaves:** Complexity: simple. Arrangement: alternate. Shape: orbicular (heart-shaped). Surface: velvety pubescent, hairy (large trichomes). Margins: shallow, rounded teeth or with sharp, spreading teeth (dentate) sometimes only slightly toothed
- **Stem:** Hairy

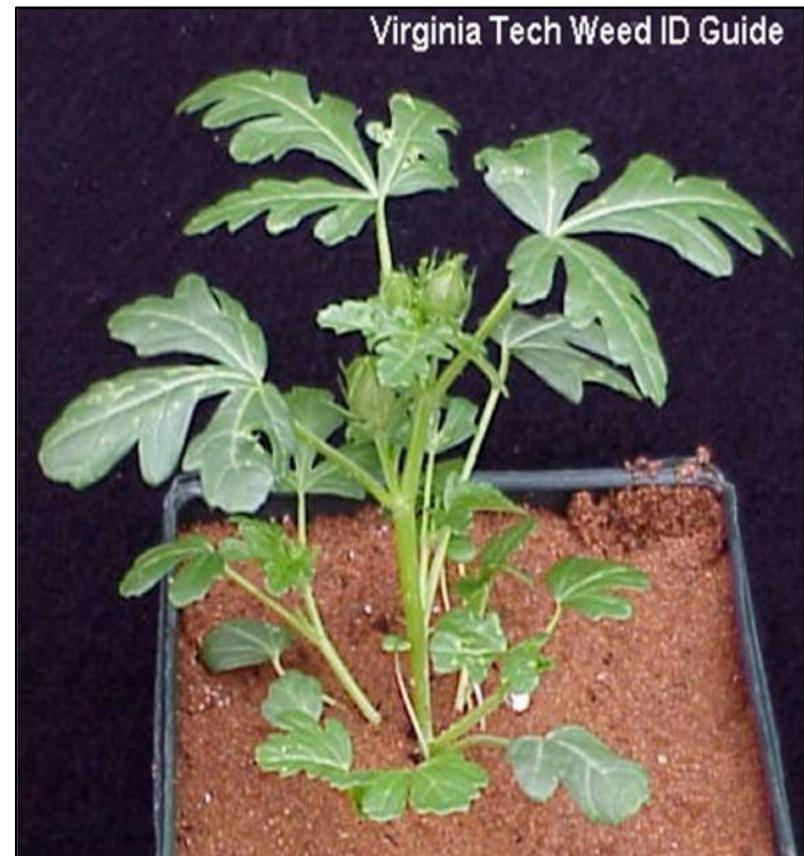


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Venice mallow

- **Scientific name:** *Hibiscus trionum*
- **Life cycle:** Summer annual
- **Cotyledons:** Orbicular (somewhat rounded), can see veins easily.
- **Leaves:** Complexity: Simple. Arrangement: Alternate. Shape: Lobed (usually three). Top Surface: Glabrous (without hairs). Bottom Surface: Pubescent
- **Stem:** Erect to ascending many branches; pubescent, stiff hairs
- **Flower:** Pale-yellow to white with a purplish or reddish- black center
Deeply lobed leaves



Phytolaccaceae

Pokeweed Family

common pokeweed

- **Scientific name:** *Phytolacca Americana*
- **Life cycle:** Perennial
- **Leaves:** Large alternate leaves broadly lanceolate or ovate, with smooth margins, and prominent veins. Narrow petioles
- **Stem:** Smooth, round, and hairless, varying from light green to brilliant purplish red berries.



Plantaginaceae

Plantain Family

broadleaf plantain

- **Scientific name:** *Plantago major*
- **Life cycle:** Perennial
- **Cotyledons:** Long and spatula-shaped.
- **Leaves:** Oval and have prominent veins parallel from the base to the tip of the leaf. Leaf base tapers to a distinct petiole, usually petiole are green but occasionally pale pink
- **Stem:** Big red stem
Seed stalks grow from the center of the rosette and long head seeds



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Photo: E Fogelfors ©. ograsradgivaren.slu.se



Poaceae

Grass Family

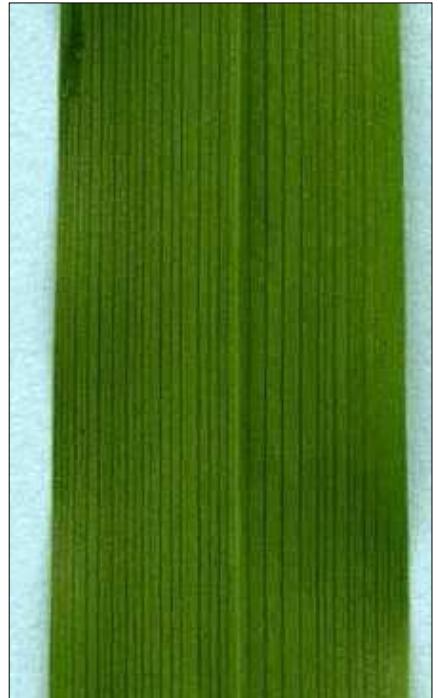
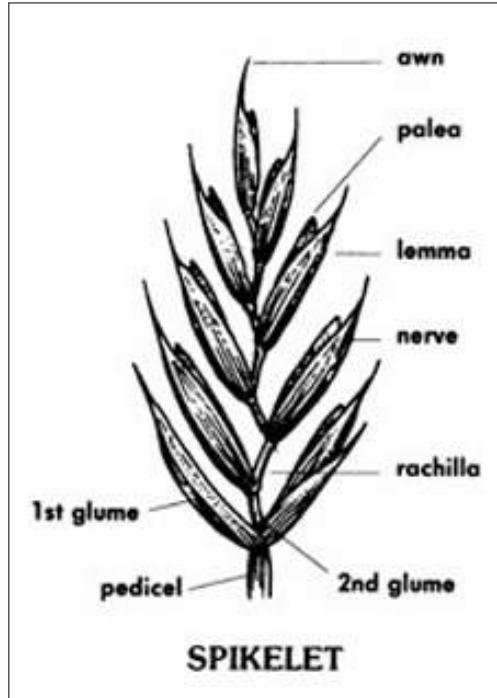
Grass Family - *Poaceae*

Flowers: minute flowers arranged in spikelets

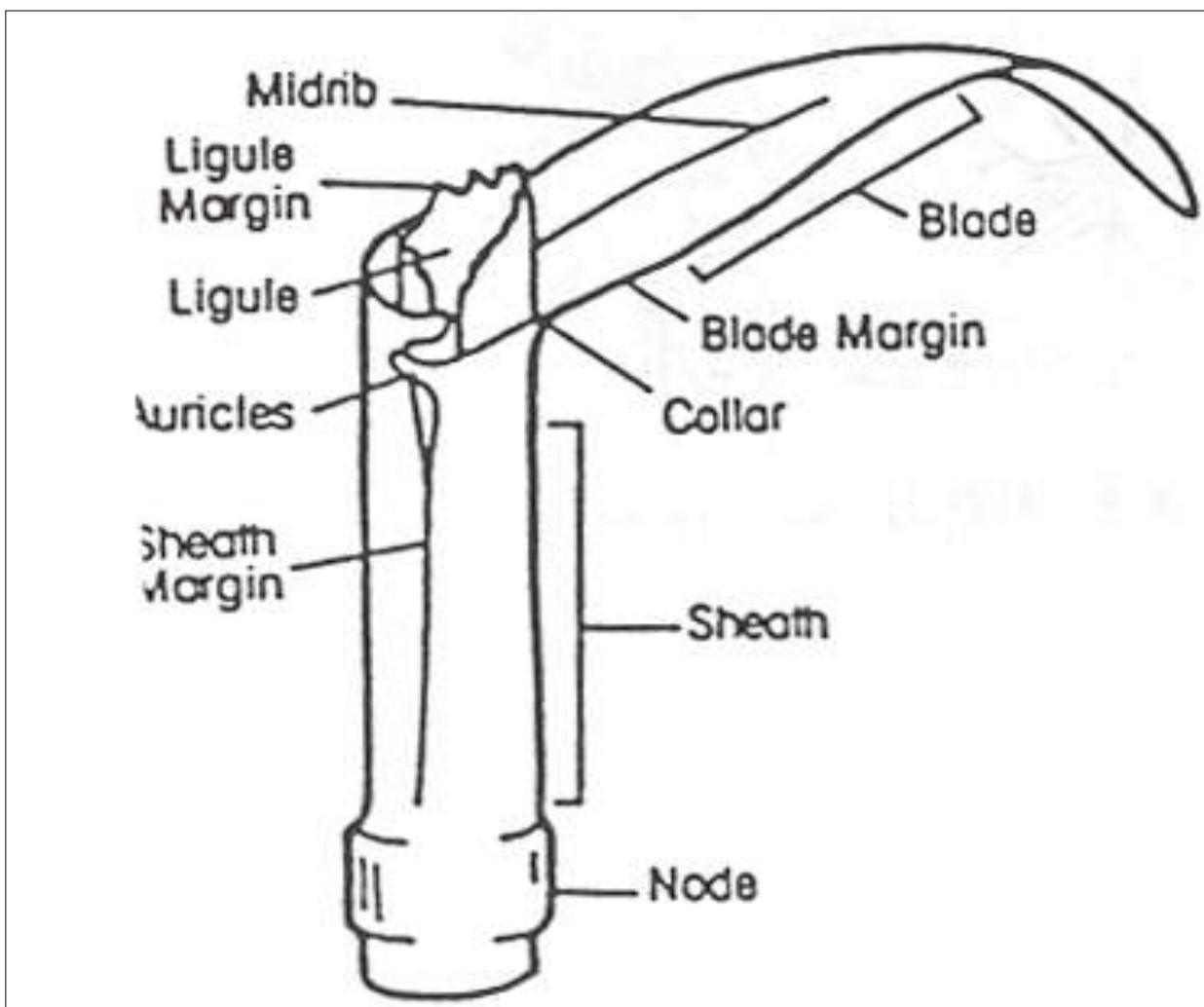
Leaves: strap shaped, alternate, parallel venation, leaves; sheath and blade

Stems: usually hollow (culm), solid at nodes

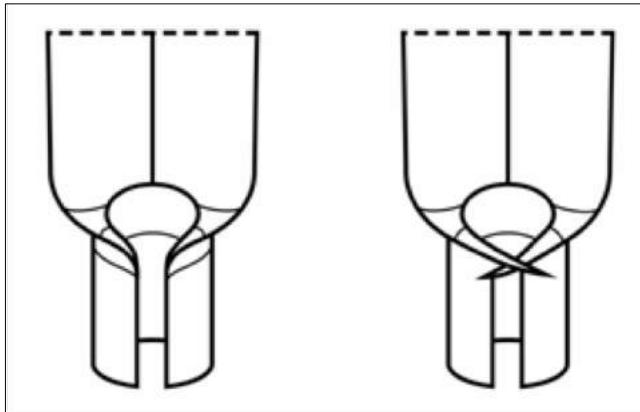
Cultivated: corn, barley, grain sorghum, oats, wheat, rye, millet



Grass Identification Terms: Parts



Grass Identification Terms: Auricles



oats (*Avena sativa*) – no auricles

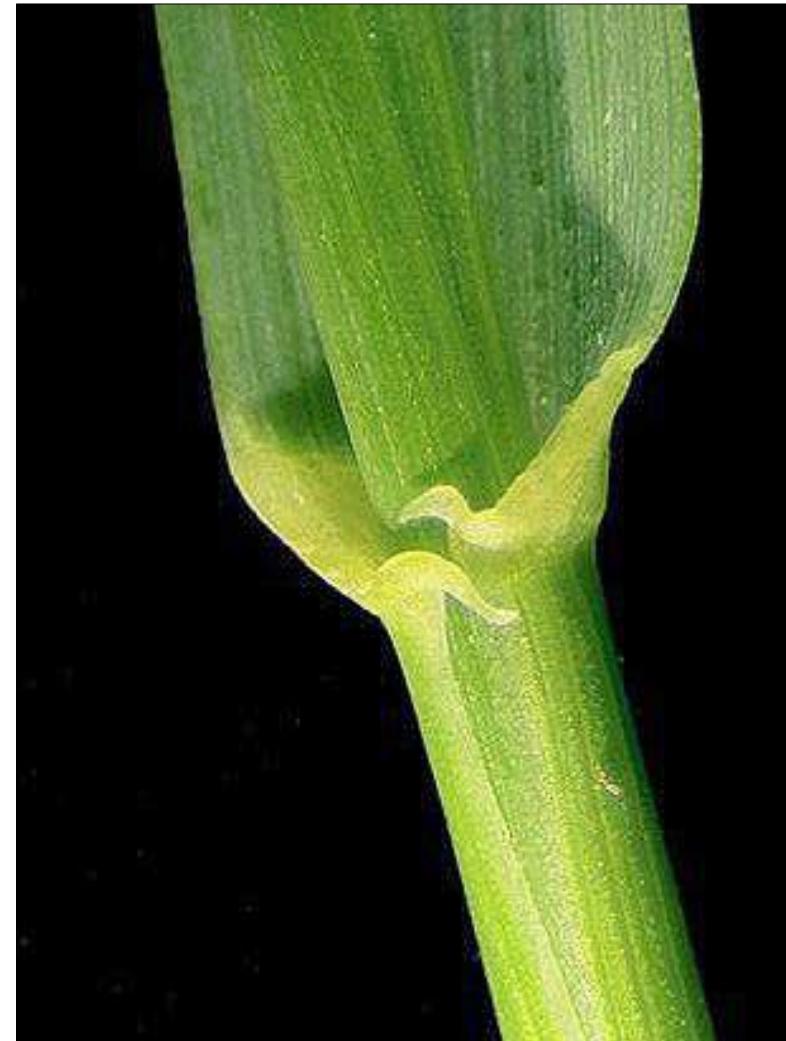


barley (*Hordeum vulgare*) – auricles

Grass Identification Terms: Auricles



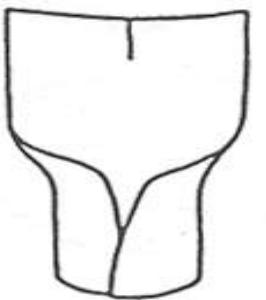
wild oats (*Avena fatua*) – no auricles



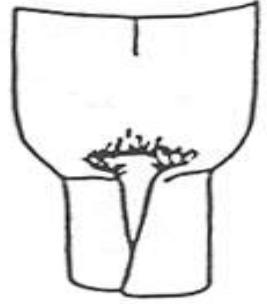
quackgrass – auricles

Grass Identification Terms: Ligule

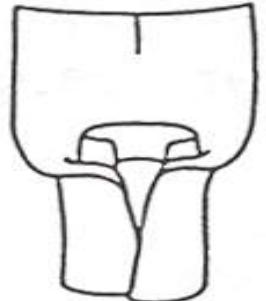
Types of Ligules



Absent



Hairy

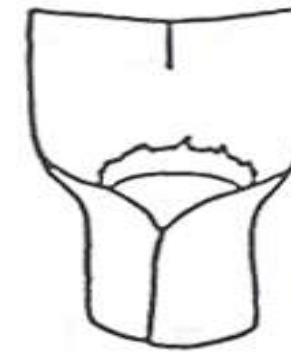


Membranous

Ligule Margin



Smooth Margin



Toothed Margin

Grass Identification Terms: Ligule



Grass Identification Terms: Twist

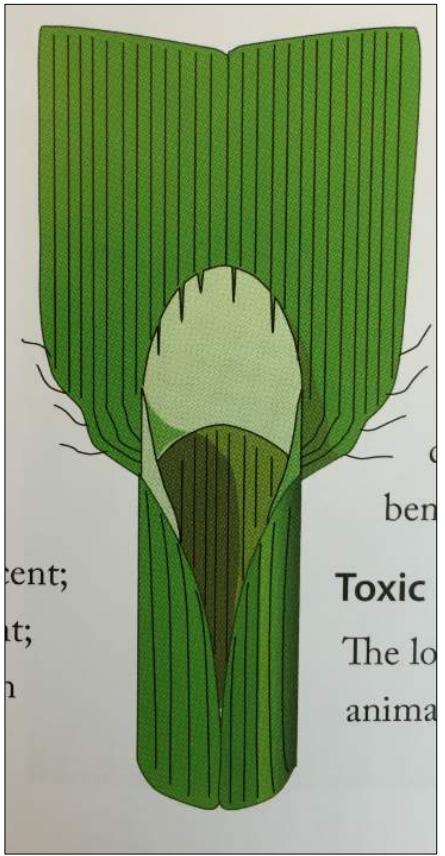


Grass Identification Terms: Twist



wild oat

- **Scientific name:** *Avena fatua*
- **Life cycle:** Summer annual
- **Blade:** Glabrous, occasionally pubescent
- **Ligule:** Membranous to 5 mm long.
- **Auricles:** None
- **Sheath:** Glabrous or pubescent



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jointed goatgrass

- **Scientific name:** *Aegilops cylindrica*

- **Life cycle:** Summer annual

Blade: flat; pubescent or without hair, hairs on margins near the blade base.

Ligule: membranous.

Auricles: inconspicuous or absent.

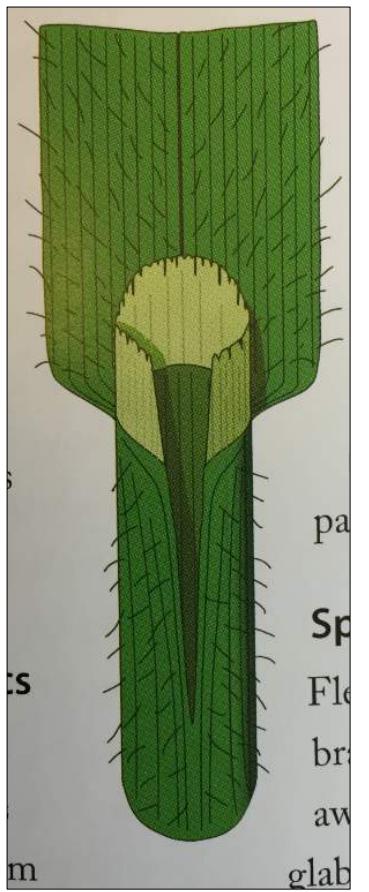
Sheath: open, without hair or ciliate to sparsely pilose (i.e., with long soft, straight hairs).

Culm: erect or geniculate (i.e., sharply bent) at base; branching at the base.



downy brome

- **Scientific name:** *Bromus tectorum*
- **Leafbud:** Rolled in a bud
- **Life cycle:** Summer or winter annual
- **Seeds:** Drooping seed heads when mature
- **Blade:** Densely hairy leaves
- **Ligule:** Membranous; may be toothed or fringed with hairs
- **Auricles:** None
- **Sheath:** Round and densely hairy leaf sheath



Virginia Tech Weed ID Guide



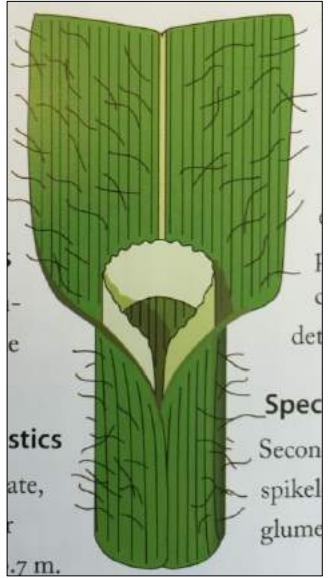
longspine sandbur

- **Scientific name:** *Cenchrus longispinus*
- **Leafbud:** Folded in a bud
- **Blade:** Flat, sometimes folded tapering to a point; may be rough to the touch
- **Ligule:** Short membrane fringed with hairs
- **Auricles:** None
- **Sheath:** Loose, smooth, flattened, slightly hairy on the margins
- **Culm:** Flattened, may be upright or growing flat on the ground, mat forming



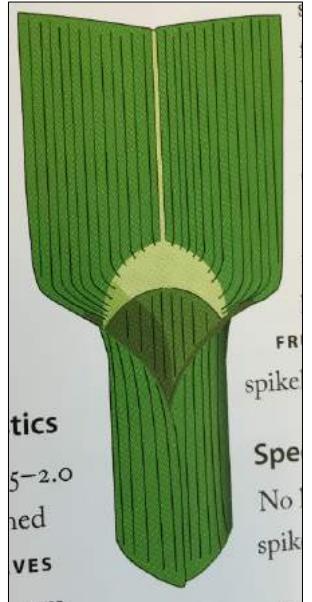
large crabgrass

- **Scientific name:** *Digitaria sanguinalis*
- **Leafbud:** Rolled in a bud
- **Blade:** hairs on upper and lower leaf surface
- **Ligule:** tall, jagged, membranous
- **Collar:** sparsely hairy
- **Auricles:** absent
- **Sheath:** often purple
- **Culm:** decumbent, roots at lower nodes, often red to purple in color



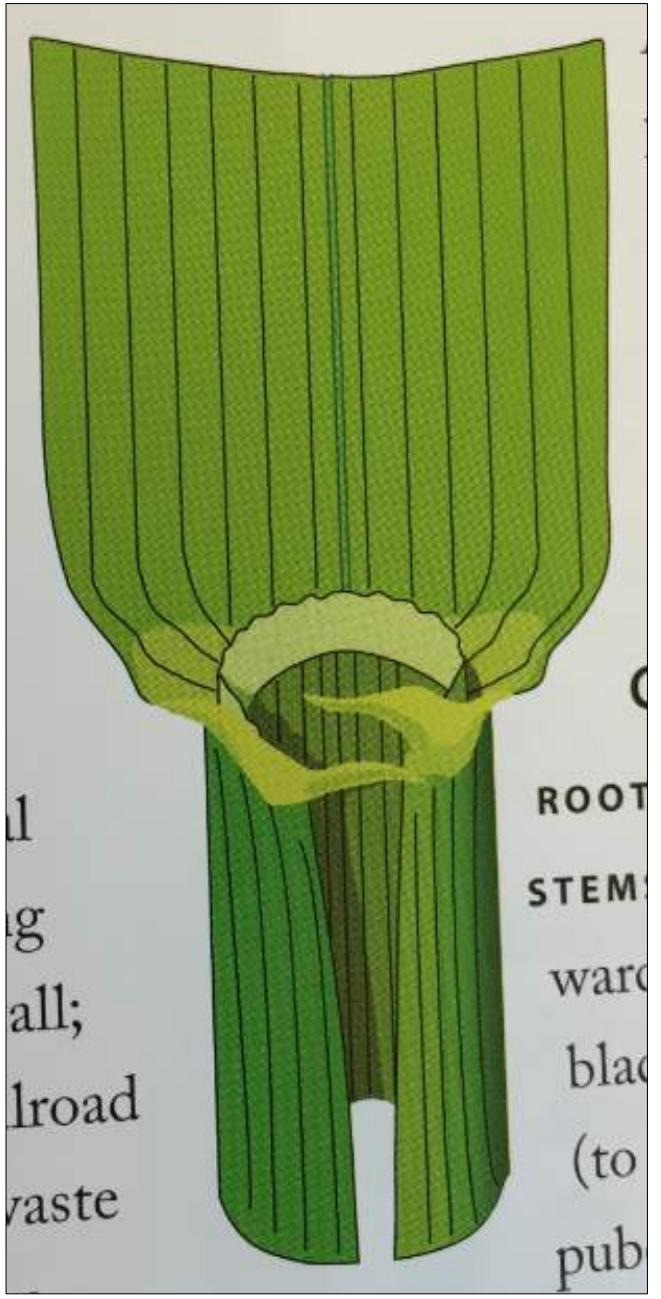
barnyardgrass

- **Scientific name:** *Echinochloa crus-galli*
- **Life cycle:** Summer annual
- **Blade:** Flat, without hair but rough to the touch, margins often sawtoothed, veins prominent
- **Ligule/Auricles:** none
- **Sheath:** Hairless, often with small glands on the margins near the collar
- **Culm:** Stout, arising from a jointed base which trails along the ground



quackgrass

- **Scientific name:** *Elymus repens*
- **Seedlings:** Auricles present, sheaths pubescent to glabrous; Blade pubescent to glabrous on upper surface, glabrous on lower surface; Ligule membranous
- **Roots:** Fibrous, rhizomes present
- **Leaves:** 4 – 30 cm long and 3 – 8 mm wide, upper surface pubescent to glabrous, lower surface glabrous
- **Sheaths:** Glabrous or pilose
- **Ligule:** Very short, membranous and truncate
- **Inflorescence:** Spike of many several-flowered spikelets. Spikelets 4-8 flowered



stinkgrass

- **Scientific name:** *Eragrostis ciliaris*
- **Seedlings:** Leaf sheaths glabrous with scattered glands on veins, sheath overlapping stem.
- **Roots:** Fibrous
- **Leaves:** Blade flat to somewhat involute, 5-15 cm long.
- **Sheaths:** Overlapping, glabrous except for pilose throat.
- **Ligule:** Ciliate
- **Inflorescence:** Dense panicle

Odor when crushed



woolly cupgrass

- **Scientific name:** *Eriochloa villosa*
- **Leafbud:** Rolled in a bud
- **Life cycle:** Summer annual
- **Sheath:** Covered with short hair
- **Blade:** flat, linear to lanceolate-linear, pilose, one side often with a distinctive crinkle.
- **Ligule:** fringe of hairs (up to 1.5 mm long). **Auricles:** absent.
- **Culm:** usually erect, sometimes ascending, branching at lower nodes, softly hairy



witchgrass

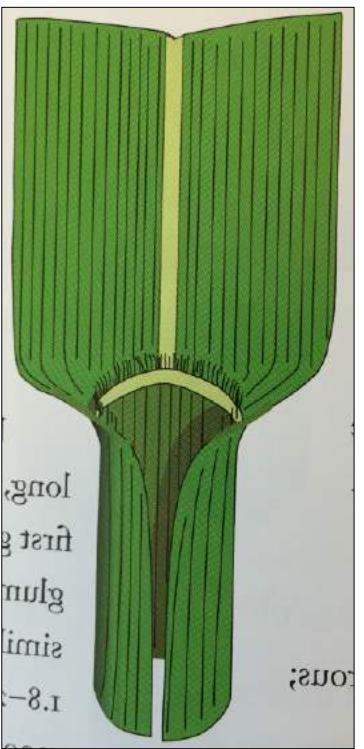
- **Scientific name:** *Panicum capillare*
- **Life cycle:** Perennial
- **Sheath:** Densely hairy, the edges overlapping near the tip. The ligule is membranous with short hairs
- **Leaves:** Mostly along the stem, becoming larger above often drooping and wavy along the edges like corn leaves. sparsely to moderately hairy on both surfaces, sometimes hairless on the upper surface and only hairy along the midvein on the underside.
- **Stem:** Leafy, multiple from the base, branching from the base as well as the upper stem, erect or sprawling from the base but rising at a node, often very stout.

Plants are hairy throughout



fall panicum

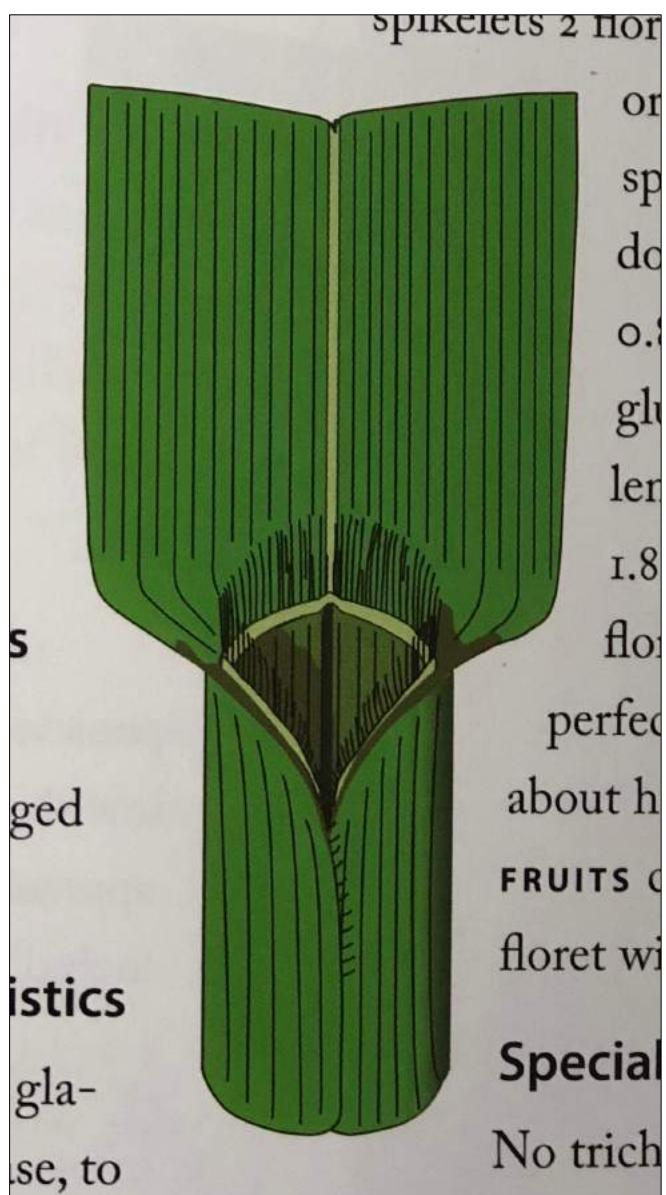
- **Scientific name:** *Panicum dichotomiflorum*
- **Life cycle:** Annual
- **Seedlings:** have many hairs on the lower surface of the leaf blades
- **Auricle:** absent
- **Ligule:** fringe of hairs
- **Leaves:** lanceolate and have a prominent pale green midvein
- **Stems:** glabrous and round
- **Nodes** are usually swollen 'zigzagged' growth pattern



Virginia Tech Weed ID Guide

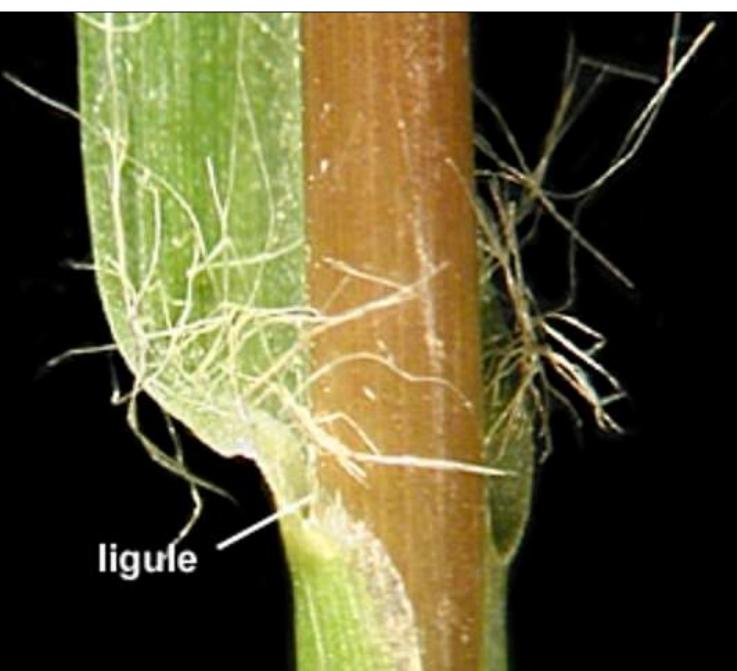
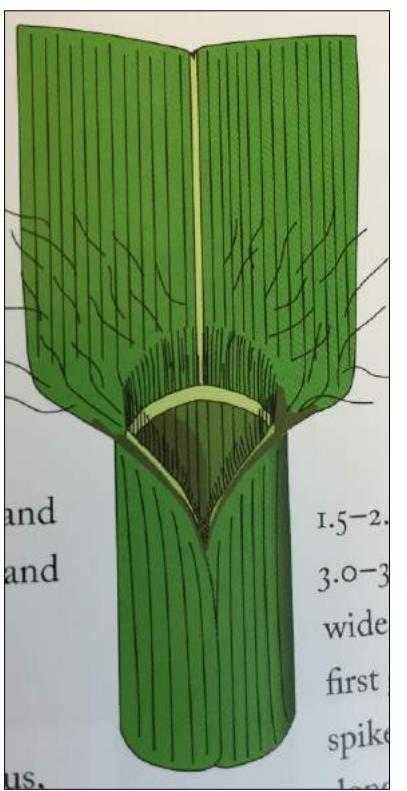
bristly foxtail

- **Scientific name:** *Setaria verticillata*
- **Life cycle:** Summer annual
- **Blade:** Glabrous to scabrous, rough margins, tendency to spiral.
- **Ligule:** Fringe membrane
- **Sheath:** Glabrous to scabrous, sometimes ciliate on upper surface, keeled.
- **Downward-barbed bristles adhere to clothing and fur**



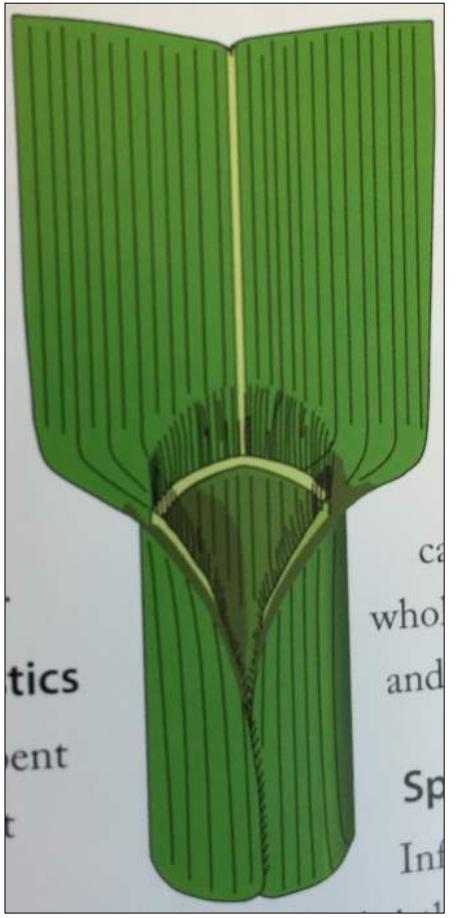
yellow foxtail

- **Scientific name:** *Setaria pumila*
- **Life cycle:** Summer Annual
- **Blade:** linear, long hairs on upper surface near leaf base
- **Ligule:** short fringe of hairs
- **Sheath:** glabrous, flattened, somewhat keeled, often with reddish tint at base
- **Culm:** flattened, glabrous, branched



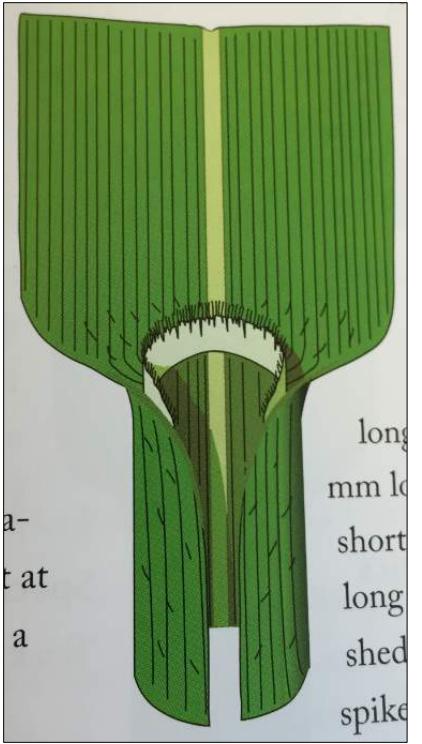
green foxtail

- **Scientific name:** *Setaria viridis*
- **Leafbud:** Rolled in a bud
- **Life cycle:** Summer annual
- **Blade:** linear, glabrous
- **Ligule:** dense fringe of hairs
- **Sheath:** glabrous with pubescent margins
- **Culm:** erect, bent at nodes, may be branched at base



shattercane

- **Scientific name:** *Sorghum bicolor*
- **Leafbud:** Rolled in a bud
- **Life cycle:** Summer annual
- **Blade:** linear-lanceolate, flat, sometimes with reddish or purplish splotches
- **Ligule:** Membranous, ciliate, rounded or blunt (rarely pointed).
- **Auricles:** absent
- **Sheath:** round, often with reddish or purplish splotches, sometimes pubescent
- **Culm:** erect, several from single base, stout, hairless.





Polygonaceae

Buckwheat Family

prostrate knotweed

- **Scientific name:** *Polygonum aviculare*
- **Life cycle:** Summer annual
- **Cotyledons:** Small, linear, stem reddish, leaves blue-green, glabrous.
- **Leaves:** Alternate, simple, linear, margins entire, blue-green.
- **Stem:** Prostrate growth, ocrea around nodes.

Ochrea (or Ocrea): Papery sheaths found where the petiole attaches to the stem



wild buckwheat

- **Scientific name:** *Polygonum convolvulus*
- **Life cycle:** Summer annual
- **Cotyledons:** Oblong to lanceolate shape, not completely opposite to each other
- **Leaves:** Simple. Petioled attachment, ochrea. Alternate arrangement. Heart shaped lower leaves, lanceolate to arrowhead shaped upper leaves. Basal lobes directed backward, tapering to a point, tips pointed. Entire margins. Glabrous surface
- **Stem:** Trailing or twining, fine and rough pubescence



Pennsylvania smartweed

- **Scientific name:** *Polygonum pensylvanicum*
- **Life cycle:** Summer annual
- **Cotyledons:** Lanceolate, smooth, with gland-tipped trichomes covering margins.
- **Leaves:** Alternate, wide, simple, glabrous or sparsely pubescent, purple blotch on leaves
- **Stem:** Ocrea



curly dock

- **Scientific name:** *Rumex crispus*
- **Life cycle:** Perennial
- **Cotyledons:** Long and somewhat club shaped, seem to flop on ground
- **Leaves:** Simple, appear as rosette early. Petiolate attachment, has ochrea. Alternate arrangement. Oblong-lanceolate to linear-lanceolate shape. Wavy-curled (crisped) margins. Hairless surface, prominent midvein
- **Stem:** Erect, single or in groups, unbranched



Rubiaceae

Madder Family

catchweed bedstraw

- **Scientific name:** *Galium aparine*
- **Life cycle:** Winter or summer annual
- **Cotyledons:** Oblong to egg shaped with notched tips
- **Leaves:** Whorl around stem in groups of 6-8, individual leaves have a rounded tip and a tapering base. Leaves have bristles and spines giving them sticky touch
- **Stem:** Square, unbranched with downward spines





Solanaceae

Nightshade Family

horsenettle

- **Scientific name:** *Solanum carolinense*
- **Life cycle:** Perennial
- **Leaves:** Alternate arrangement, leaf surfaces are rough covered with tiny hairs and have long spines midribs, veins and petioles
- **Stem:** Simple or branched covered with prickly hairs and sharp yellow or white spines



© Ted Bodner

eastern black nightshade

- **Scientific name:** *Solanum ptycanthum*
- **Life cycle:** Summer annual
- **Cotyledons:** Small, ovate, maroon colored on lower surfaces
- **Leaves:** Simple. Alternate arrangement. Ovate to triangular or lanceolate shape, tip pointed to rounded or blunt. Entire to sinuate-dentate margins. Hairless to sparsely pubescent surface
- **Stem:** Erect, divergently branching, without hair to sparsely hairy



buffalobur

- **Scientific name:** *Solanum rostratum*
- **Life cycle:** Summer annual
- **Cotyledons:** Long and narrow
- **Leaves:** Simple. Alternate arrangement. Ovate to broadly elliptic, deeply lobed. Entire or undulate margins. Hairy surface, trichomes on both sides, may have spines. First true leaves are pinnatifid
- **Stem:** Erect, long spines, some pubescence

