SOYBEAN

Weed, Insect and Disease Field Guide

LSU AgCenter
Research & Extension

Funded by the
Louisiana Soybean and Grain Research & Promotion Board

WEEDS

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Soybean Weeds
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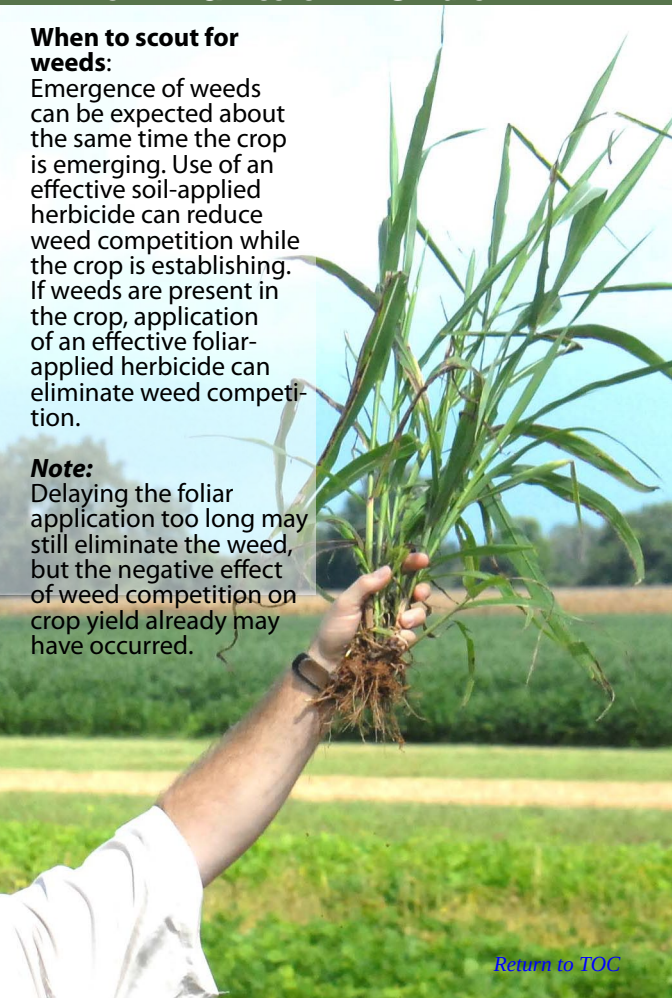
When to scout for weeds:
Emergence of weeds can be expected about the same time the crop is emerging. Use of an effective soil-applied herbicide can reduce weed competition while the crop is establishing. If weeds are present in the crop, application of an effective foliar-applied herbicide can eliminate weed competition.

Note:
Delaying the foliar application too long may still eliminate the weed, but the negative effect of weed competition on crop yield already may have occurred.



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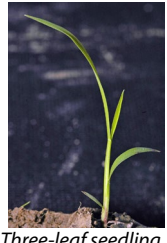
Barnyardgrass

Latin name:
Echinochloa crus-galli (L.) Beauv.

Seedling with smooth leaf surface.

General information: Barnyardgrass, also referred to as billion dollargrass and watergrass, is an upright-growing weed that reproduces only by seeds. The weed can reach a height of 7 feet and is prevalent in cultivated areas, fields, pastures, wet ditches, roadsides, railroad beds and waste sites.

Identifying characteristics: Leaves are 4 to 20 inches long and 0.2 to 1.2 inches wide. The leaf sheaths (the part of the leaf that surrounds the stem) and the leaf blades have no hairs, but leaf blades are rough on both the upper and lower surfaces. There is no ligule present where the leaf sheath and the blade meet. Stems are smooth and without hairs and often bent and branched at the lower nodes. The seed head is a drooping panicle 4 to 16 inches long with numerous spreading branches. Seeds may or may not have awns (stiff, bristle-like beards).



Three-leaf seedling.

Seeds can be awned or awnless.

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Bermudagrass

Latin name:
Cynodon dactylon (L.) Pers.

Spreads by stolons (above ground stems).

General information:
Bermudagrass, also referred to as wiregrass and couchgrass, is a spreading weed that reproduces by seeds, underground rhizomes (stems) and above ground stolons (stems). The weed can reach a height of 12 inches and is prevalent in cultivated areas, fields, pastures, gardens, roadsides, railroad beds and waste sites.

Cluster of hairs present where leaf sheath and blade meet.

Identifying characteristics:
The leaf sheaths (the part of the leaf that surrounds the stem) and leaf blades in young seedlings are smooth and have no hairs. The ligule present where the leaf sheath and the blade meet is an inconspicuous membrane with a fringe of hairs. A dense cluster (tuft) of erect hairs is present on the leaf sheath margin where the leaf sheath and blade meet. Leaves are 2 to 6 inches long and 0.1 to 0.2 inches wide with the upper surface sometimes hairy. Stems arising from stolons and rhizomes are upright, slightly flattened and terminate in a seed head. Rooting at nodes can occur. The seed head is upright, about 20 inches tall and composed of three to nine fingerlike spikes.

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Broadleaf signalgrass

Latin name:
Urochloa platyphylla (Nash) R. D. Webster

General information: Broadleaf signalgrass, also referred to as *Brachiaria platyphylla* (Griseb.) Nash, is a decumbent (grows along the ground with growing points turned upward), spreading and branching weed that reproduces only by seeds. The weed can reach a height of 3 feet and is prevalent in cultivated areas, fields, pastures, lawns, turf, roadsides, railroad beds, moist ditches and waste sites.

Seedling with first true leaf.

Notice wide leaves and crease across leaf veins near the tip of the top left leaf.

Identifying characteristics: The leaf sheaths (the part of the leaf that surrounds the stem) have hairs. Leaf blades have no hairs, but leaf margins are hairy. The ligule present where the leaf sheath and blade meet is a fringe of hairs. Leaves are 1.5 to 6 inches long and 0.25 to 0.6 inches wide and often have a crease near the tip. Stems are decumbent, bent at the nodes and often branched. Rooting can occur at lower nodes. The seed head is **flattened and distinctive.**

Seed head emerging; notice the crinkled leaf margin.

Ligule is a fringe of hairs.

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Browntop millet

Latin name: *Urochloa ramosa* (L.) Nguyen

General information: Browntop millet, also referred to as browntop panicum, *Brachiaria ramosa* (L.) Stapf. and *Panicum ramosum* L., is an upright- to decumbent-growing (grows along the ground with growing points turned upward) weed that reproduces only by seeds. The weed can reach a height of 2.5 feet and is prevalent in cultivated areas, fields, pastures, lawns, turf, roadsides, railroad beds and waste sites.

Mature plants with seed heads.

Two-leaf seedling.

Identifying characteristics: The leaf sheaths (the part of the leaf that surrounds the stem) are slightly hairy to smooth. Leaf blades are broad and flat and have no hairs. The ligule present where the leaf sheath and blade meet is a fringe of hairs. Leaves are 0.75 to 13 inches long and 0.1 to 0.75 inches wide and are flat. Stem nodes have hairs. The seed head has spreading branches that stick out like signal flags.

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Large crabgrass

Latin name: *Digitaria sanguinalis* (L.) Scop.

Seedling

General information: Large crabgrass, also referred to as hairy fingergrass, is a prostrate (stem and branches lying flat on the ground) to spreading weed that reproduces only by seeds. The weed can reach more than 2 feet tall and is prevalent in cultivated areas, fields, pastures, lawns, turf, roadsides, railroad beds and waste sites.

Large plant with hairy leaf sheaths.

Identifying characteristics: The leaf sheath (the part of the leaf that surrounds the stem) and the leaf blade in young seedlings usually are densely hairy. The ligule present where the leaf sheath and the blade meet is a translucent and flexible membrane with uneven teeth on the margin. Leaves are 1 to 8 inches long and 0.1 to 0.4 inches wide. The leaves usually are hairy on the upper and lower surfaces, and the leaf sheath also is hairy. Stems are prostrate, spreading and branched; rooting at older nodes can occur. The seed head has four to six branches.

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Smooth crabgrass

Latin name:
Digitaria ischaemum (Schreb. ex Schweig.) Schreb. ex Muhl.


Three-leaf seedling.

General information: Smooth crabgrass, also referred to as fingergrass and smooth summergrass, is a prostrate (stem and branches lying flat on the ground) to decumbent-growing (grows along the ground with growing points turned upward) weed that reproduces only by seeds. The weed can reach 2 feet tall and is prevalent in cultivated areas, fields, pastures, lawns, turf, roadsides, railroad beds and waste sites.


Ligule is a membrane.

Identifying characteristics: The leaf sheath (the part of the leaf that surrounds the stem) and the leaf blade in young seedlings are smooth and without hairs. The ligule present where the leaf sheath and the blade meet is a translucent and flexible membrane with a smooth margin. Leaves are 2 to 6 inches long and 0.1 to 0.3 inches wide with no hairs on the upper and lower surfaces. The leaf sheath also is hairless. Stems are prostrate to decumbent with branching at lower nodes; rooting at nodes does not occur. The seed head has two to six fingerlike branches.


Large plant with tillers.

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Spreading dayflower

Latin name: *Commelina diffusa* Burm. f.

General information: Spreading dayflower, also referred to as dayflower, grows along the ground with growing points turned upward (decumbent). It is a branched weed that reproduces by seeds and from nodes along stems and stem fragments. Stems can be 2 feet long, and the weed is prevalent in wet or seasonally wet soils near streams, marshes, floodplain woodlands and fallow fields.

Flowers

Identifying characteristics: Seedlings are erect and unbranched initially, grasslike in appearance and without hairs. With time, plants become prostrate and profusely branched (stems and branches lying flat on ground). Stems are smooth, and leaf sheaths have a few soft hairs. Leaves are 1 to 3 inches long and 0.2 to 0.8 inches wide; lance-shaped and smooth. Flowers have blue petals and last for one day, giving the plant its common name.

Seedling – the first leaf has unrolled, and the second leaf is unrolling.

Flowering plants.

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Fall panicum

Latin name*:*
Panicum dichotomiflorum Michx.

General information: Fall panicum, also referred to as smooth witchgrass, is an upright- to decumbent-growing (grows along the ground with growing points turned upward) weed that reproduces only by seeds. The weed can reach a height of 7 feet and is prevalent in cultivated areas, fields, pastures, lawns, turf, roadsides, railroad beds and waste sites.

Identifying characteristics: The leaf sheaths (the part of the leaf that surrounds the stem) and leaf blades are smooth and have no hairs. The ligule present where the leaf sheath and the blade meet is a fringe of hairs. Leaves are 4 to 20 inches long and 3 to 7 inches wide, and the upper leaf surface may be hairy. Stems are bent at the nodes and branched. The seed head is a 4- to 30-inch-long open and branching panicle.

Seedling

Ligule is a fringe of hairs; notice the off-centered midvein in the leaf (right side of midvein is wider).

Leaves have a prominent, white midvein.

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Goosegrass

Latin name:
Eleusine indica (L.) Gaertn.

General information:
Goosegrass, also referred to as bullgrass, crowfootgrass, white crabgrass and wiregrass, is an upright-growing to spreading weed that reproduces only by seeds. The weed can spread over a 3 foot-wide area and is prevalent in cultivated areas, fields, pastures, lawns, turf, roadsides, railroad beds and waste sites.

Ligule is a membrane; stems are smooth and flattened.

Large plant showing white stem bases and flattened stems.

Identifying characteristics:
The leaf sheath (the part of the leaf that surrounds the stem) margins are whitish to translucent, distinctly flattened and without hairs. The ligule present where the leaf sheath and blade meet is an uneven and fringed translucent and flexible membrane. Leaves are 2 to 14 inches long and 0.1 to 0.3 inches wide with sparse hairs or no hairs. Leaf sheath margins are hairy. Stems are upright to spreading, flattened, branched and without hairs. The seed head has one to 13 fingerlike branches, each 1.5 to 6 inches long.

Seedling

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Itchgrass

Latin name:
Rottboellia cochinchinensis (Lour.) W. D. Clayton

Mature plant with seed.

General information: Itchgrass, also referred to as raoulgrass or raoul, is an upright-growing weed that reproduces only by seeds and is listed as a federal noxious weed. The weed can reach a height of 10 feet and is prevalent in cultivated areas, fields, pastures, roadsides, railroad beds and waste sites.

Identifying characteristics: Seedlings and older plants usually are pale green. Leaves are 4 to 20 inches long and 0.2 to 0.75 inches wide. The leaf sheath (the part of the leaf that surrounds the stem) and the leaf blade have long, stiff hairs that cause an itching sensation. The ligule present where the leaf sheath and the blade meet is a thin, translucent and flexible membrane. Like corn, stems of Itchgrass have prop-roots arising from lower nodes. The seed head is pencil-like and jointed.

Seedling plants with seeds still attached.

Plant with stiff hairs on stem and prop-roots.

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Johnsongrass

Latin name:
Sorghum halepense (L.) Pers.

General information: Johnsongrass is an upright-growing weed that reproduces by seeds and thick, scaly, underground rhizomes (stems). The weed can reach a height of 11 feet and is prevalent in cultivated areas, fields, pastures, roadsides, railroad beds, open woodlands and waste sites.

Mature plant with seed heads.

Identifying characteristics: The leaf sheath (the part of the leaf that surrounds the stem) and the leaf blade are smooth and have no hairs. The ligule present where the leaf sheath and the blade meet is a prominent translucent and flexible membrane that is fringed. Leaves are 8 to 24 inches long and 0.4 to 1.2 inches wide and without hairs. Stems are upright. The seed head is an open panicle 6 to 20 inches long with numerous branches.

Seedling

Leaves have a prominent, white mid-vein.

Rhizomes

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Junglerice

Latin name: *Echinochloa colona* (L.) Link

Plant with two tillers; notice red banding on leaf blade.

General information: Junglerice, also referred to as awnless barnyardgrass and watergrass, is an upright- or decumbent-growing (grows along the ground with growing points turned upward) weed that reproduces only by seeds. The weed can reach a height of 3 feet and is prevalent in cultivated areas, fields, pastures, wet ditches, roadsides, railroad beds and waste sites.

Seeds are always awnless.

Identifying characteristics: The leaf sheaths (the part of the leaf that surrounds the stem) and the leaf blades have no hairs. As also noted for barnyardgrass, there is no ligule present where the leaf sheath and the blade meet. Leaf blades on older plants may be sparsely hairy and will sometimes have a purple band running perpendicular to leaf veins. Stems are smooth with no hairs and often are bent at the nodes. Rooting can occur at the lower nodes. Seed head is a branching panicle 2 to 8 inches long, and seeds will not have awns (stiff, bristle-like beards).

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Purple nutsedge

Latin name: *Cyperus rotundus* L.

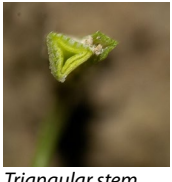
Seed head with reddish-purple color.

General information: Purple nutsedge, also referred to coco, cocograss, or purple nutgrass, is an upright-growing weed that reproduces by seed, rhizomes and tubers. Plants can reach a height of 3 feet and are prevalent in cultivated areas, fields, pastures, lawns, turf and disturbed areas.

Leaves are shiny and abruptly taper at the tip.

Identifying characteristics: The root system, which extends from tubers, basal bulbs and slender white and fleshy rhizomes, is fibrous and extensively branched. Stem is triangular and borne individually from tubers or basal bulbs. Leaves are three-ranked, and blades, 0.1 to 0.2 inches wide, are long and narrow with a prominent midvein. The leaves are flat or slightly corrugated, abruptly tapering at the tip. The seed head is reddish-purple or reddish-brown, and seed production and seed viability vary. Tubers produced are oblong, irregularly shaped with a rough surface and connected by rhizomes in chains (multiple tubers are produced from a single rhizome). Tubers are bitter to taste and have buds scattered over surface. Each tuber or basal bud can produce one to three rhizomes.

Multiple tubers produced from each rhizome; notice rough surface of tubers.



Triangular stem.

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Yellow nutsedge

Latin name: *Cyperus esculentus* L.

General information: Yellow nutsedge, also referred to chufa or yellow nutgrass, is an upright-growing weed that reproduces by seed, rhizomes and tubers. This weed can reach a height of around 3 feet and is prevalent in cultivated areas, fields, pastures, lawns, turf, roadsides, wetlands and disturbed areas.

Seed head with yellow color.

Identifying characteristics: The root system, which extends from tubers, rhizomes and basal bulbs, is fibrous and extensively branched. Stem is triangular and borne individually from tubers or basal bulbs. Leaves are three-ranked, and blades, around 0.2 inches wide, are long and narrow with a prominent midvein. The leaves are flat or slightly corrugated and gradually taper to a sharp point. The seed head is yellowish-brown or straw colored, and seed production and seed viability vary. Tubers produced are spherical, smooth and solitary (one tuber produced at terminal end of a rhizome or basal bulb). Each tuber or basal bulb can produce 10 or more rhizomes.

A single tuber is produced at end of each rhizome; notice smooth surface of tubers.

Large plant; leaves gradually taper to a sharp point.

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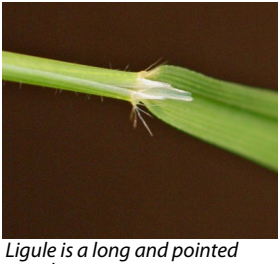
Red rice

Seedling

Latin name:
Oryza punctata Kotzchy ex Steud.

General information: Red rice is an upright-growing weed that reproduces only by seeds. The weed can reach a height of about 2.5 feet and is prevalent in cultivated areas, fields, roadsides, wet ditches and waste sites.

Identifying characteristics: The leaf sheath that surrounds the stem is smooth. Well-developed, earlobe-shaped projections at the base of the sheath (auricles) are present. The ligule present where the sheath and the blade meet is a triangular-shaped, thin, translucent and flexible membrane. Leaves are 12 to 24 inches long and 0.25 to 0.75 inches wide. Older leaves have dense, stiff hairs. Stems do not have hairs at nodes. The seed head is erect and multi-branching (panicle), and the covering over the seeds is straw colored or black.



Ligule is a long and pointed membrane.

Outside covering of seed can be red, brown or black; may or may not have awns.

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Rice flatsedge

Latin name: *Cyperus iria* L.

Young plants.

General information: Rice flatsedge, also referred to as annual sedge or umbrella sedge, is an upright-growing to inclined weed that reproduces only by seed. The weed can reach a height of 24 inches and is prevalent in wet to seasonally wet soils in open fields.

Identifying characteristics: Leaves are three-ranked and blades, 0.1 to 0.3 inches wide, are long and narrow to lace-shaped and without hairs. Leaf margins are rough, especially toward the apex, and a membranous sheath envelops a triangular-shaped stem at the base. When crushed, plants have a distinct "Christmas tree" smell. The plant produces multiple fruiting stems from its base. The seed head has golden brown sides and green midveins. Rice flatsedge produces seeds but does not produce rhizomes or tubers, as do yellow and purple nutsedge.

Triangular stem.

Seed head.

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Alligatorweed

Latin name: *Alteranthera philoxeroides* (Mart.) Griseb.

General information: Alligatorweed, also referred to as alligator grass, is an upright- or decumbent-growing (grows along the ground with growing points turned upward) aquatic or terrestrial weed that reproduces only by vegetative means (no seed production). The weed can form dense, tangled, floating mats with stems 3 feet long.

Identifying characteristics: Leaves are opposite (two leaves attached to each stem node), long and narrow to elliptic (curved sides and widest in middle). Leaves have a distinct midvein and pointed leaf tips. Leaves are 2 to 5 inches long and 0.2 to 0.8 inches wide. Soft whitish hairs are found in leaf axis. Leaves are wider at the base and wrap around the stem. A purple watermark usually is present in the center of the leaf. Stems are round and smooth with swollen nodes; they are hollow and slightly flattened at maturity. Stems are capable of rooting at nodes. Flowers are solitary, white and fragrant – resembling those of white clover. Fruit and seed are not produced.

Three- to four-leaf plants.

Older plant with flowers.

Hollow stems.

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Hophornbeam copperleaf

Latin name: *Acalypha ostryifolia* Riddell

General information:
Hophornbeam copperleaf, also referred to as Virginia copperleaf, is an upright-growing weed that reproduces only by seeds. The weed can reach a height of about 2.5 feet and can be found in fields, cultivated areas, roadsides and waste sites.

Young plant; notice the color and serrated leaf margins.

Identifying characteristics:
Cotyledons (seed leaves) are hairy and egg-shaped. When plants are small, petioles connecting the first two true leaves to the stem are positioned below where the cotyledons are attached, which is unique. Leaves are alternate (only one leaf produced at each stem node), 1 to 4 inches long and 0.5 to 2 inches wide and oval- to diamond-shaped, with serrated (sharp teeth pointing toward leaf tip) leaf margins and sparse hairs. Stems usually are branched and hairy. Flowers can be found at the top of the plant (terminal inflorescence) and in leaf axils where the leaf petiole joins the stem (axillary inflorescence). Fruit is a capsule containing three seeds. Seeds are egg-shaped and silvery gray.

Seedling with cotyledons and true leaves.

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Eclipta

Latin name: *Eclipta prostrata* (L.) L.

Plant with flowers; notice rough stem

General information: Eclipta is an upright-growing, spreading or prostrate weed that reproduces only by seeds. The weed can reach a height of 5 feet and is prevalent in damp, sandy or muddy soils, cultivated areas, fields and roadsides.

Seedling with cotyledons and first true leaves.

Identifying characteristics: Cotyledons (seed leaves) are small, green, spatulate (wide at leaf tip apex and abruptly tapering to a narrow base) and without hairs. They are slightly thickened, with midvein evident on lower surface. The stem below the cotyledons is light green to light purple. As plants mature, stems become reddish-brown to purplish and coarse to the touch. Stems are capable of rooting at nodes. Leaves are 1 to 5 inches long and 0.2 to 1 inch wide, have no petioles and are opposite (two leaves attached to each stem node). Leaves can be long and narrow or lance-shaped, slightly toothed and thickened, with midvein evident. The lower leaf surface is hairy. When broken from the plant, leaves and stems turn black. Flowers are round and are green early but then turn white.

Young plant with flowers.

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Cutleaf groundcherry

Latin name: *Physalis angulata* L.

Mature plant with flowers.

General information: Cutleaf groundcherry, also referred to as lantern plant and *Physalis lanceifolia* Nees, is an upright-growing and branching weed that reproduces only by seeds. The weed can reach a height of 3 feet and is prevalent in cultivated areas, fields, pastures, open woodlands, roadsides and waste sites.

Three- to four-leaf plant.

Identifying characteristics: Cotyledons (seed leaves) are lance-shaped and can be without hairs or hairy, especially along margins and veins. The stem below the cotyledons is purple tinged and hairy. Older leaves are alternate (only one leaf attached to each stem node), 1.5 to 6 inches long, 1.2 to 4 inches wide and lance-shaped to widely egg-shaped. Leaf margins are coarsely irregular, indented or smooth and continuous. Stems are upright, freely branching and without hairs. Flowers are produced in leaf or branch axils. The fruit produced is a berry surrounded by an inflated, 10-ribbed papery calyx, usually with purple veins.

Seedling with cotyledons and first true leaves

Fruit (berry enclosed in a papery calyx).

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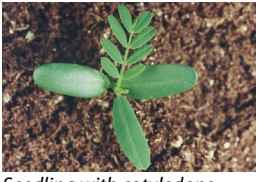
Hemp sesbania

Latin name:
Sesbania herbacea (P. Mill.) McVaugh

General information: Hemp sesbania, also referred to as coffeeweed, is an upright-growing and branching weed that reproduces only by seed. The weed can reach a height of 13 feet and is prevalent in cultivated areas, fields, pastures, roadsides, ditches and waste sites.

Large plant; notice lance-shaped stipules at junction of leaf petiole and main stem .

Identifying characteristics: Cotyledons (seed leaves) are lance-shaped to spoon-shaped and two times longer than they are wide. The first true leaf (one above the cotyledons) is simple and looks much like a cotyledon leaf, only longer. The next leaf produced is comprised of six to 14 leaflets and is similar in appearance to what is seen on larger plants. Leaflets are 0.4 to 1.2 inches long and no more than 0.25 inches wide. Leaves are alternate (only one leaf attached to each stem node), and at the junction of leaf petioles and stems are lance-shaped appendages (stipules) that fall off with time. Because the weed is a legume, nodules will be present on roots of large plants. Flower petals are large, showy and yellow. About 30 to 40 seeds are produced in curved and beaked pods 4 to 8 inches long.



Seedling with cotyledons; the first true leaf is a single leaf, and the second leaf is comprised of several leaflets.

Flowers

Seed pod

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Indian jointvetch

Latin name: *Aeschynomene indica* L.

General information: Indian jointvetch is an upright-growing, often bushy and branched weed that reproduces only by seeds. The weed can reach a height of 8 feet and is prevalent in moist soil, shallow water and cultivated areas, especially rice fields.

Large plant with seeds.

Identifying characteristics: Cotyledons (seed leaves) are egg-shaped and slightly furrowed at the midrib. The first true leaf (one above the cotyledons), unlike hemp sesbania, is comprised of eight to 10 leaflets, which are each 0.2 to 0.3 inches long. On large plants, individual leaves may contain 50 to 70 leaflets that are sensitive and fold when touched. Leaves are alternate (only one leaf attached to each stem node), and at the junction of leaf petioles and stems are lance-shaped appendages (stipules). Stems have fine longitudinal lines or ridges. Because the weed is a legume, nodules will be present on roots of large plants. Flower petals are yellowish to reddish-purple. Seeds are produced in segmented pods 0.75 to 2 inches long.

Seedling with cotyledons; the first true leaf is comprised of several leaflets.

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Cypressvine morningglory

Latin name: *Ipomoea quamoclit* L.

General information: Cypressvine morningglory is a climbing or vining weed that reproduces only by seeds. Vines can reach a length of 10 feet and can be found in cultivated areas, fields, pastures, fence rows, roadsides, disturbed soil and waste areas.

Young plant; notice leaf shape.

Identifying characteristics: Cotyledons are long, and the angle between points is much greater than 90 degrees. The hypocotyl (stem below cotyledons) is stout. Stems are climbing or twining and highly branched and smooth. Leaves are alternate (only one leaf produced at each stem node), 0.5 to 3.5 inches long and 0.33 to 2.75 inches wide, deeply divided with nine to 19 pairs of opposite linear segments less than 0.1 inch wide. Flowers can be found as a single flower or in clusters of two to five; they are shaped like a long tube and are deep red (sometimes, but rarely, scarlet or white). Fruit is a capsule containing four seeds.

Seedling with distinct cotyledons.

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Entireleaf morningglory

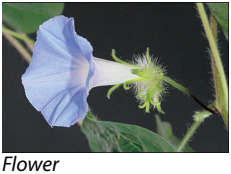
Latin name: *Ipomoea hederacea* (L.) Jacq. var. *integriuscula* Gray

Hairy leaf surface.

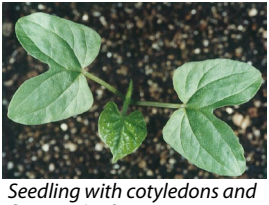
General information: Entireleaf morningglory, also referred to as common morningglory and ivyleaf morningglory, is a climbing or vining weed that reproduces only by seeds. The vines can reach a length of 10 feet and can be found in cultivated areas, fields, pastures, fence rows, roadsides, disturbed soil and waste areas.

Young plant at the "running" stage.

Identifying characteristics: Cotyledons (seed leaves) are lobed, moderately to deeply indented, with rounded points. The hypocotyl (stem below the cotyledons) is stout, green or purple-tinged and smooth. Stems with many branches sometimes can be reddish and covered densely with hairs. Leaves are alternate (only one leaf produced at each stem node), 2 to 5 inches long and 1.5 to 4 inches wide, heart-shaped and very hairy. Flowers are single and are blue with white centers, turning rosy-purple as they wither. Fruit is a capsule containing two to four seeds.



Flower



Seedling with cotyledons and first true leaf.

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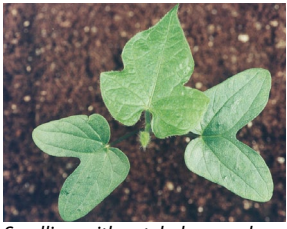
Ivyleaf morningglory

Latin name:
Ipomoea hederacea (L.) Jacq.



Seedling with cotyledons and first true leaf.

General information:
Ivyleaf morningglory, also referred to as common morningglory and entireleaf morningglory, is a climbing or vining weed that reproduces only by seeds. The weed vines can reach a length of 10 feet and can be found in cultivated areas, fields, pastures, fence rows, roadsides, disturbed soil and waste areas.

Mature plant with tendrils used for climbing.

Identifying characteristics:
Cotyledons (seed leaves) are lobed, moderately to deeply indented, with rounded points. The hypocotyl (stem below the cotyledons) is stout, green or purple-tinged and smooth. Stems with many branches sometimes can be reddish and covered densely with hairs. Leaves are alternate (only one leaf produced at each stem node), 2 to 5 inches long and 1.5 to 4 inches wide and very hairy, with three lobes. Flowers are single and blue with white centers, turning rose-purple as they wither. Fruit is a capsule containing two to four seeds.

Mature leaf and flowers.

Return to TOC

Palmleaf morningglory

Latin name: *Ipomoea wrightii* L.

Seedling with cotyledons and true leaf.

General information: Palmleaf morningglory, also referred to as willowleaf morningglory, is a climbing or vining weed that reproduces only by seeds. Vines can reach a length of 7 feet and can be found in alluvial or clay soils, cultivated areas, ditch banks, fields and roadsides.

Three to seven leaflets originate from same point.

Identifying characteristics: Cotyledons are smooth and deeply indented with pointed ends. The hypocotyl (stem below the cotyledons) is stout. Stems are low-climbing or trailing, branched, slender and smooth. Leaves are alternate (only one leaf produced at each stem node), 0.75 to 2.5 inches long and 1 to 2.4 inches wide, with three to seven leaflets originating from the same attachment point. Leaflet margins are smooth, but leaflets may not be of equal size. Flowers are solitary, shaped like a long tube and are lavender to lavender-pink or rose. The stem that connects the flower to the main stem is spiral-coiled. Fruit is a capsule containing four seeds.

Return to TOC

Pitted morningglory

Latin name:
Ipomoea lacunosa L.

Leaves are heart shaped and smooth.

General information: Pitted morningglory, also referred to as small white morningglory, small white-flowered morningglory and white morningglory, is a climbing and vining weed that reproduces only by seeds. Vines can reach a length of 7 feet, and the weed can be found in cultivated areas, fields, pastures, fence rows, roadsides, disturbed soil and waste areas.

Seedling with cotyledons and true leaf.

Identifying characteristics: Cotyledons (seed leaves) are deeply indented, with long, pointed lobes that are without hairs. The hypocotyl (stem below cotyledons) is smooth and green or purple. Stems are climbing or twining and branching. The stems can be either smooth or sparsely hairy. Leaves are alternate (only one leaf produced at each stem node), 0.75 to 4 inches long and 0.5 to 4 inches wide and variably heart-shaped with three to five lobes. Leaves are smooth or slightly hairy (rarely) with purple margins. Single white flowers or a few flowers are produced and are in clusters. Fruit is a capsule containing four seeds.

Return to TOC

Red morningglory

Latin name: *Ipomoea coccinea* L.

Distinctive flowers

General information: Red morningglory, also referred to as scarlet morningglory, is a climbing or vining weed that reproduces only by seeds. Vines can reach a length of 7 feet, and the weed can be found in cultivated areas, fields, pastures, fence rows, roadsides, disturbed soil and waste areas.

Large flowering plants with tendrils for climbing.

Identifying characteristics: Cotyledons (seed leaves) often are maroon-tinged, are not deeply lobed and have rounded points. The hypocotyl (stem below cotyledons) is stout, green or maroon and smooth. Stems are climbing or twining and branching and are smooth (or rarely hairy). Leaves are alternate (only one leaf produced at each stem node) and 0.75 to 6 inches long and 0.5 to 5 inches wide, usually with three to five pointed projections or teeth on the margins (may be heart-shaped or lobed). Clusters of two to six flowers that are orange-red are produced. Fruit is a capsule containing four seeds.

Seedling with cotyledons and first true leaf; notice shape of cotyledons and the pointed projections on the first true leaf margin.

Return to TOC

Smallflower morningglory

Latin name: *Jacquemontia tamnifolia* (L.) Griseb.

General information: Smallflower morningglory, also referred to as hairy clustervine, is initially an upright-growing weed, later becoming climbing and vining, that reproduces only by seeds. Vines can reach a length of 7 feet, and the weed can be found in cultivated areas, fields, pastures, fence rows, gardens, roadsides, disturbed soil and waste sites.

Seedling with cotyledons and first true leaf.

Mature leaf and flower.

Identifying characteristics: Cotyledons (seed leaves) are slightly indented with rounded points (unlike other morning glories). The hypocotyl (stem below cotyledons) is stout, green and smooth. Stems with many branches can be either sparsely or densely hairy. Leaves are alternate (only one leaf produced at each stem node) and 1 to 5 inches long and 0.75 to 3.5 inches wide, with leaf margins smooth and sparsely hairy on top and underside. Flowers are in clusters of 20 or more and are blue (or rarely white) and densely hairy (fuzzy). Fruit is a capsule containing four seeds.

Palmer amaranth

Seed

Latin name: *Amaranthus palmeri* S. Wats.

General information: Palmer amaranth, also referred to as carelessweed and palmer pigweed, is an upright-growing and branched weed that reproduces only by seeds. The weed can reach a height of 7 feet and can be found in open river valleys, cultivated areas, fields, pastures, roadsides and waste areas.

Large plant; notice width of leaves.

Identifying characteristics: Cotyledons (seed leaves) are lance-shaped and smooth. The hypocotyl (stem below the cotyledons) is red to green and can be smooth or softly hairy. Stems may be red and smooth or hairy. Leaves are alternate (only one leaf produced at each stem node) and 1 to 4 inches long, egg-shaped, with prominent veins beneath and long leaf petioles that attach to the stem. Flowers are densely crowded together at the top of the main stem (unbranched terminal inflorescence) and can be 20 inches long. Male and female flowers are produced on separate plants. Male flowers are soft to the touch and produce yellow pollen. Female flowers are stiff and sharp to the touch. Seeds are roughly the size of the point of a ballpoint pen and are dark red-brown.

Female plant inflorescence.

Male plant inflorescence.

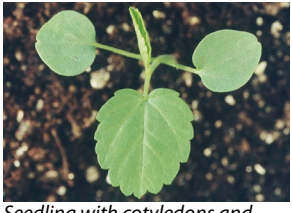
Return to TOC

Prickly sida

Latin name: *Sida spinosa* L.

Mature plant with flowers.

General information: Prickly sida, also referred to as teaweed, false-mallow, Indian mallow and spiny sida, is an upright-growing and branching weed that reproduces only by seeds. The weed can reach a height of about 3 feet and can be found in cultivated areas, fields, pastures, roadsides and waste sites.



Seedling with cotyledons and first true leaf; notice indented tip of each cotyledon.

Identifying characteristics: Cotyledons (seed leaves) are smooth to rough, heart-shaped and have a small notch at the tip. True leaves are alternate (only one leaf produced at each stem node), lance-shaped to oval-shaped and with serrated leaf margins (sharp teeth pointing toward leaf tip) around the entire leaf. At the base of each leaf is a spinelike projection. Flowers are pale yellow. Fruit is a capsule with five one-seeded segments, each with two sharp, spreading spines at the top. Mature plants have a long taproot.

Four-leaf plant; notice leaf shape and serrated leaf margin.

Return to TOC

Common purslane

Latin name:
Portulaca oleracea L.

Seedling with cotyledons and first true leaves.

General information: Common purslane, also referred to as common portulaca, wild portulaca, purslane, pursley, pusley, pussley and wild portulac, is a prostrate-growing (stem and branches lying flat on the ground), fleshy, succulent and drought-resistant weed that reproduces only by seeds. The weed can reach a height of about 1.5 feet and is prevalent in cultivated areas, fields, pastures, gardens, lawns and waste sites.

Large plant; notice the purplish-red succulent stems and opposite leaves.

Identifying characteristics: Cotyledons (seed leaves) are long and narrow and purplish red. Young leaves appear opposite (two leaves attached to each stem node) with each succeeding pair oriented 90 degrees from the preceding pair. Older leaves are alternate (only one leaf attached to each stem node) or nearly opposite, 0.2 to 1 inch long, spatulate (wide at leaf tip apex and abruptly tapering to a narrow base) or egg-shaped and succulent with smooth margins. The stems are without hairs, succulent, fleshy and usually purplish red. Rooting can occur at nodes. Flowers are produced in leaf axils or in clusters at end of branches and are yellow and small. Fruit is produced in a capsule.

Return to TOC

Redroot pigweed

Latin name:
Amaranthus retroflexus L.


Seedling with cotyledons and true leaves.

General information: Redroot pigweed, also referred to as carelessweed and common amaranth, is an upright-growing weed that reproduces only by seeds. The weed can reach a height of 7 feet and can be found in open river valleys, cultivated areas, fields, pastures, roadsides and waste areas.


Red coloration on leaf petioles and stems.

Identifying characteristics: Cotyledons (seed leaves) are lance-shaped and hairy. The hypocotyl (stem below the cotyledons) is red to green and can be smooth or softly hairy. Stems usually are branched, with fine short hairs. Leaves are alternate (only one leaf produced at each stem node) and 0.75 to 6 inches long and 0.4 to 3 inches wide, with hairs on the underside and long leaf petioles that attach to the stem. Flowers are densely crowded together in a seed head about 8 inches long at the top of main stem (terminal inflorescence). Unlike Palmer amaranth, flowers of redroot pigweed contain both male and female parts on the same plant. Seed are roughly the size of the point of a ballpoint pen and are dark red-brown.


Red coloration of roots.


Large plants.


Inflorescence

Return to TOC

Redvine

Latin name: *Brunnichia ovata* (Walt.) Shinners

General information: Redvine, also referred to as eardrops, ladies' eardrops and *Brunnichia cirrhosa* Gaertn., is a decumbent-growing (grows along the ground with growing points turned upward), climbing or somewhat shrubby and deeply rooted perennial vine that also can reproduce by seeds. The weed can spread over a 10-foot-wide area and is prevalent in cultivated areas, fields, pastures, roadsides, open woodlands, fence rows, ditches and waste sites.

Young plant that emerged from woody roots; notice tendrils at top of the plant used for climbing.

Large mature plant.

Identifying characteristics: Seedlings usually are not seen, since plants generally emerge from perennial rootstock. Leaves are without hairs and alternate (only one leaf attached to each stem node), 2 to 6 inches long and egg-shaped. Stems are partly a woody vine climbing by tendrils that coil around supporting structures. Plants have a reddish tint. Flowers are pink and showy.

Return to TOC

Redweed

Latin name:
Melochia corchorifolia L.

Seed head with flowers and seed capsules.

General information:
Redweed, also referred to as chocolate weed, English teaweed and teaweed, is an upright-growing and branching weed that reproduces only by seeds. The weed can reach a height of 5 feet and is prevalent in cultivated areas, fields, pastures, open woodlands, roadsides and waste sites.

Seedling with cotyledons and first true leaf.

Identifying characteristics:
Cotyledons (seed leaves) are round. The first true leaf (one above the cotyledons) is four to five times larger than the cotyledon, and the leaf margin is serrated (has sharp teeth that point toward the leaf tip). Leaves are alternate (only one leaf attached to each stem node), smooth and without hairs. Leaves are 1 to 3 inches long and 0.4 to 1.6 inches wide. Stems are reddish colored and have hairs. Flower petals are pink to lavender. Fruit is a capsule containing five seeds.

Large plant.

Return to TOC

Sicklepod

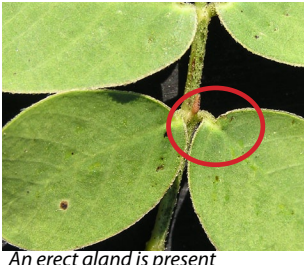
Latin name: *Senna obtusifolia* (L.) H. S. Irwin & Barneby

General information: Sicklepod, also referred to as coffeebean, is an upright-growing weed that reproduces only by seeds. The weed can reach a height of 7 feet and can be found in cultivated areas, fields, pastures, roadsides and waste sites.

Mature plant showing leaflets, yellow flowers and sickle- shaped pods.

Identifying characteristics: Cotyledons (seed leaves) are rounded, with three to five distinct veins. The first true leaf (one above the cotyledons) is compound with four to six leaflets, most commonly six. Leaflets on young plants may develop wrinkles. Leaflets are narrower at the base and wider at the tip. The terminal pair of leaflets is the largest. There is a gland (structure that contains or secretes a sugary fluid) between or just above the petiole of the longest pair of leaflets. Both leaves and stems have a distinct odor when crushed. Stems are branched, green, round and smooth. Usually one to two flowers are present in leaf axils and typically are yellow. Seeds are produced in slender, curved, somewhat rounded pods 3 to 8 inches long.

Cotyledons



An erect gland is present between the pair of leaflets.

Return to TOC

Smellmelon

Latin name:
Cucumis melo L.

General information:
Smellmelon, also referred to as dudaim melon and wild muskmelon, is a trailing or climbing vine that reproduces only by seeds. Vines can reach a length of 10 feet, and the weed can be found in disturbed areas, fields, pastures, fence rows, waste sites, picnic areas and heaps.

Identifying characteristics: Cotyledons (seed leaves) are round to oblong and smooth, with a slight notch at the tip. Stems are branched and have soft hairs. Leaves are alternate (only one leaf produced at each stem node) and hairy. They are 5 inches wide and angled, but not lobed. Single flowers (male and female separate) are produced and are yellow. Fruit is golden yellow, brown marbled, hairy and extremely aromatic. Flesh is yellowish, orange or green and resembles a muskmelon.

Seedlings at cotyledon and first true leaf.

Large plant with vines.

Flower and tendril.

Fruiting structure is a melon.

Return to TOC

Spotted spurge

Latin name:
*Chamaesyce maculata (*L.) Small


Seedling with cotyledons and true leaves.

General information: Spotted spurge, also referred to as *Euphorbia maculata* L. and *Euphorbia supina* Raf. ex Boiss., is a prostrate- (stem and branches lying flat on the ground) or decumbent-growing (grows along the ground with growing points turned upward) weed that reproduces only by seeds. The weed can reach a height of about 1.5 feet and is prevalent in cultivated areas, fields, roadsides, lawns, turf and pastures.


Mature plant.


Young plant with purple/ red marks on leaves.

Identifying characteristics: Cotyledons (seed leaves) are without hairs. Older leaves are opposite (two leaves attached to each stem node), variable in leaf shape and size, with or without hairs and with leaf margins minutely serrated. The stems are red, hairy and branched. Rooting does not occur at the nodes. Both stems and leaves contain milky sap. Male and female flowers are separate and on the same plant. Seeds are produced in capsules with hairs.


Milky sap present in stems.

Return to TOC

Texasweed

Latin name:
Caperonia palustris (L.) St. Hil.

General information:
Texasweed, also referred to as mexicanweed, is an upright-growing weed that reproduces only by seeds. The weed can reach a height of 3 feet and is prevalent in open wet soils, roadsides, rice fields, cultivated soils, open woodlands and waste sites.

Mature plant with seed capsules.

Identifying characteristics:
Cotyledons (seed leaves) are smooth. Leaves above the cotyledons are alternate (only one leaf attached to each stem node) and lance-shaped with serrated leaf margins (has sharp teeth that point toward the leaf tip) and prominent veins. Leaves are 1 to 6 inches long. Leaves, leaf petioles and stems have coarse hairs. Separate male and female flowers are evident on the same plant, and seeds are produced in capsules covered with hairs.

Seedling with cotyledons and first true leaf expanding.

Seed capsules.

Return to TOC

Common waterhemp

Latin name: *Amaranthus rudis* Sauer

Seed head

General information: Common waterhemp, also referred to as tall waterhemp (*Amaranthus tuberculatus*), is an upright-growing weed that reproduces only by seeds. The weed can reach a height of 10 feet and can be found in cultivated areas, stream banks, lakeshores, flood plains, fields and waste sites.

Seed

Identifying characteristics: Cotyledons (seed leaves) are lance-shaped, green to reddish and smooth. The hypocotyl (stem below the cotyledons) is green to red and smooth to slightly hairy. Stems are slender, green or red (females usually red) and smooth to sparsely hairy. Leaves are alternate (only one leaf produced at each stem node) and 0.4 to 6 inches long and 0.2 to 1 inch wide, with smooth leaf edges and long leaf petioles that attach to the stem. Flowers are densely crowded together at the top of the main stem (terminal inflorescence). Male and female flowers are produced on separate plants. Seeds are roughly the size of the point of a ballpoint pen and are dark red-brown.

Large waterhemp plant. Leaves are more narrow than leaves of Palmer amaranth. Both weeds have long leaf petioles.

Return to TOC

Wild poinsettia

Latin name: *Euphorbia heterophylla* L.

General information: Wild poinsettia, also referred to as milkweed, is an upright-growing or spreading and branching weed that reproduces only by seeds. The weed can reach a height of 3 feet and is prevalent in cultivated areas, fields, roadsides, shallow ditches, pastures and waste sites.

Mature plant with seed capsules.

Seedling plant with cotyledons and true leaves.

Identifying characteristics: Cotyledons (seed leaves) are smooth, long and narrow and at least as long as the first true leaf. Stem below the cotyledons is smooth. Stems of larger plants are pale green and smooth and contain a milky sap. Leaves are opposite (two leaves attached to each stem node), and leaf shape can be long and narrow, lance-shaped or elliptic (having curved sides and widest in middle). Leaves are 0.75 to 8 inches long and 0.2 to about 2.5 inches wide. Its gray-green leaves have small red blotches, and leaf petioles have hairs. Fruit is a capsule with three chambers/locules, each containing one seed.

Return to TOC

INSECTS

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Return to TOC

Redbanded stink bug

Latin name:
Piezodorus guildinii (Westwood)

When to Scout:
Begin scouting for stink bugs when soybeans have reached R1. Sweep net sampling should be done with a heavy duty insect sweep net 15 inches in diameter. Insect numbers should be counted on the basis of the number caught in 100 sweeps with the net. Treat when you reach 24 stink bugs in 100 sweeps.

Redbanded stink bug egg mass with nymphs.

Damage:
Damaging infestations occur from early July through October. Stink bugs invade fields when pods start to form. Early infestations will be highest on field margins.

Redbanded stink bug nymph.

Characteristics:
Adult redbanded stink bug are light green to yellowish in color, with a yellowish, reddish, or brownish band across the back. Redbanded stink bug can be distinguished from other by a long ventral abdominal spine. Eggs are black and laid in two distinct parallel rows.

Return to TOC

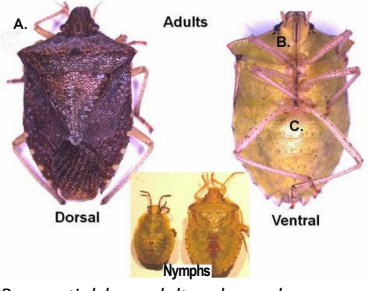
Brown stink bug

Latin name: *Euschistus servus* (Say)

Brown stink bug adult.

When to scout: Begin scouting for stink bugs when soybeans have reached R1. Sweep net sampling should be done with a heavy-duty insect sweep net 15 inches in diameter. Insect counts should be based on the number caught in 100 sweeps with the net. Treat when you capture 36 or more stink bugs in 100 sweeps.

Damage: Damaging infestations occur from early July through October. Stink bugs invade fields when pods start to form. Early infestations will be highest on field margins.



Brown stink bug adult and nymphs: (A) rounded shoulders; (B) long skinny mouthparts (stylet) common in plant-feeding stink bugs; and (C) location on the abdomen to examine for a spine.

Characteristics: The dorsal (top) side of the brown stink bug can be described as solid brown to mottled brown with rounded shoulders. The mouthparts of this species and other plant-feeding stink bugs have a very narrow stylet or feeding tube. This insect can be distinguished from other brown species by absence of a prominent spine on the ventral (bottom) surface of the abdomen. The brown stink bug ranges in size from 11 millimeters to 15 millimeters (1/2 inch) long, making it the largest of the *Euschistus* spp. in Louisiana.

Return to TOC

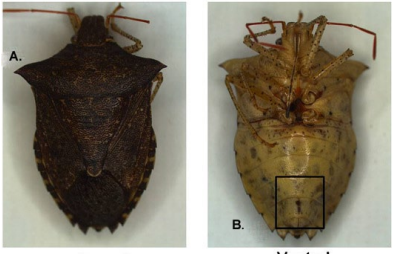
Dusky stink bug

Latin name: *Euschistus tristigmus* (Say)

When to scout: Begin scouting for stink bugs when soybeans have reached R1. Sweep net sampling should be done with a heavy-duty insect sweep net 15 inches in diameter. Insect counts should be based on the number caught in 100 sweeps with the net. Treat when you capture 36 or more stink bugs in 100 sweeps.

Damage: Damaging infestations occur from early July through October. Stink bugs invade fields when pods start to form. Early infestations will be highest on field margins.

Characteristics: The physical characteristics of the adult generally are similar to those of the common brown stink bug, but this stink bug has more pointed shoulders. The ventral surface of the lower abdomen is cream colored but has a single black spot or, in some cases, multiple black spots. The dusky stink bug is 8 millimeters to 11 millimeters (less than 1/2 inch) long and is smaller than the common brown stink bug.

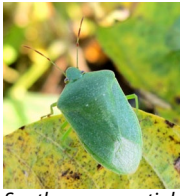


Dusky stink bug adults: (A) pointed shoulders – see brown stink bug for a comparison; and (B) box indicates dark spot on bottom side of lower abdomen.

Return to TOC

Southern green stink bug

Latin name: *Nezara viridula* (L.)



Southern green stink bug adult.

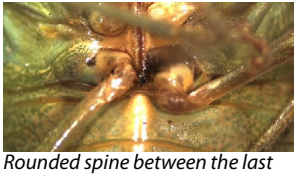
When to scout: Begin scouting for stink bugs when soybeans have reached R1. Sweep net sampling should be done with a heavy-duty insect sweep net 15 inches in diameter. Insect counts should be based on the number caught in 100 sweeps with the net. Treat when you capture 36 or more stink bugs in 100 sweeps.

Southern green stink bug egg mass and newly hatched nymphs.

Damage: Damaging infestations occur from early July through October. Stink bugs invade fields when pods start to form. Early infestations will be highest on field margins.

Southern green stink bug fifth instar nymph.

Characteristics: Adult southern green stink bugs are 1/2 to 3/4 inch long and are green with red bands on the antennae. The southern green stink bug can be distinguished from the green stink bug by a rounded spine between the last two legs. They lay barrel-shaped eggs that are arranged in a hexagon. Eggs initially are white and turn pink as they mature.



Rounded spine between the last two legs.

Return to TOC

Green stink bug

Latin name:
Chinavia hilaris (Say)


Green stink bug adult.

When to scout: Begin scouting for stink bugs when soybeans have reached R1. Sweep net sampling should be done with a heavy-duty insect sweep net 15 inches in diameter. Insect counts should be based on the number caught in 100 sweeps with the net. Treat when you capture 36 or more stink bugs in 100 sweeps.

Damage: Damaging infestations occur from early July through October. Stink bugs invade fields when pods start to form. Early infestations will be highest on field margins.

Characteristics: Adult green stink bugs are green with black bands on the antennae. The green stink bug can be distinguished from the Southern green stink bug by a pointed spine between the last two legs.


Pointed spine between the last two legs.

Return to TOC

Green cloverworm

Latin name: *Hypena scabra* (Fabricius)

Green clover worm larva.

When to scout: Begin scouting for worms prior to R1. Sweep net sampling should be done with a heavy-duty insect sweep net 15 inches in diameter. Insect counts should be based on the number caught in 100 sweeps with the net. Treat when you reach 300 worms in 100 sweeps. Prior to blooming, soybeans can tolerate 30 percent to 35 percent defoliation. During bloom and pod set (R1-R5), defoliation should not exceed 20 percent to 25 percent. If defoliation is nearing these levels, treat.

Green clover worm adult.

Damage: Damaging infestations occur from late June through September. Populations of green clover worms rarely reach treatable levels by themselves but do contribute to a complex of caterpillars that can cause heavy defoliation.

Characteristics: Green clover worms are pale green with two narrow white stripes along each side of the body and three pairs of abdominal prolegs. The moths are dark brown to sooty black and triangular-shaped when at rest.

Return to TOC

Velvetbean caterpillar

Latin name: *Anticarsia gemmatalis* Hubner

Velvetbean caterpillar adult.

When to scout: Begin scouting for worms prior to R1. Sweep net sampling should be done with a heavy-duty insect sweep net 15 inches in diameter. Insect counts should be based on the number caught in 100 sweeps with the net. Treat when you reach 300 worms in 100 sweeps. Prior to blooming, soybeans can tolerate 30 percent to 35 percent defoliation. During bloom and pod set (R1-R5), defoliation should not exceed 20 percent to 25 percent. If defoliation is nearing these levels, treat.

Damage: Damaging infestations occur from late July through September. This pest can develop large populations rapidly and can inflict substantial damage in a short time.

Characteristics: Velvetbean caterpillars vary from green to black with several light stripes that extend the length of the body. They have four pairs of abdominal prolegs. The moths are brownish with a dark line across the wings when at rest.

Velvetbean caterpillar larva.

Return to TOC

Soybean looper

Latin name: *Chrysodeixis includens* (Walker)

Soybean looper larva.

When to scout: Begin scouting for worms prior to R1. Sweep net sampling should be done with a heavy-duty insect sweep net 15 inches in diameter. Insect counts should be based on the number caught in 100 sweeps with the net. Treat when you reach 150 worms in 100 sweeps. Prior to blooming, soybeans can tolerate 30 percent to 35 percent defoliation. During bloom and pod set (R1-R5), defoliation should not exceed 20 percent to 25 percent. If defoliation is nearing these levels, treat.

Defoliation caused by looper feeding.

Damage: Damaging infestations occur from early August through September. Soybean loopers usually reach higher populations in areas where cotton and soybeans are grown together.

Soybean looper adult.

Characteristics: Looper larvae are pale green with two pairs of abdominal prolegs. The body tapers toward the head. Adults (moths) are bronze with two silver markings near the middle of each front wing.

Return to TOC

Threecornered alfalfa hopper

Latin name:
Spissistilus festinus (Say)

Threecornered alfalfa hopper adult.

When to scout: Begin scouting for threecornered alfalfa hoppers at plant emergence. Sweep net sampling should be done with a heavy-duty insect sweep net 15 inches in diameter. Insect counts should be based on the number caught in 100 sweeps with the net. Treat when you reach 100 hoppers in 100 sweeps.

Threecornered alfalfa hopper nymph.

Damage: Damaging infestations occur throughout the growing season. Threecornered alfalfa hoppers damage soybean plants with their feeding punctures, which girdle the main stem near ground level. Girdling of the main stem can cause lodging, stem breakage and stand reduction. On larger plants, these pests move upward and girdle leaf petioles and feed on the stems that attach the blooms and pods to the plants. Stand reduction of up to 45 percent before R1 does not decrease yield. Lodging can occur later in the season, however, and lodging of 30 percent or more can result in significant yield loss.

Girdling (with adventitious roots) caused by threecornered alfalfa hopper feeding.

Characteristics: Nymphs are pale green and spiny. Adults are green, triangular-shaped and 3/8 to 1/4 inch long.

Return to TOC

Beetles

Banded cucumber beetle adult.

When to scout: A complex of beetles can affect Louisiana soybeans. These include the bean leaf beetle, the banded cucumber beetle and the *Colaspis* beetle. Begin scouting for beetles at plant emergence. Sweep net sampling should be done with a heavy-duty insect sweep net 15 inches in diameter. Insect counts should be based on the number caught in 100 sweeps with the net. For bean leaf beetle, treat when you reach 200 beetles in 100 sweeps. For banded cucumber beetle and *Colaspis* spp., treat when you reach 400 beetles in 100 sweeps.

Colaspis spp. larva.

Colaspis spp. adult.

Damage: Damaging infestations occur throughout the growing season. Beetles lay eggs in the soil near seedling soybeans. Larvae hatch and feed on soybean roots and nitrogen-fixing nodules. Beetle adults damage soybean leaves by eating rounded holes in the leaves. Infestation during early season occasionally may cause excessive defoliation on seedling beans.

Characteristics: Adult bean leaf beetles are reddish-brown to yellowish, have a black triangle on the forward margin of the wing and may have six black spots on the elytra (wings). Adult banded cucumber beetles are green with yellow bands and a red head. Colaspis adults are brown with a series of white lines along their elytra. Colaspis larvae are grublike, with brown heads and white bodies.

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DISEASES

LSU AgCenter Research & Extension

Soybean Diseases
www.LSUAgCenter.com/soybeans/diseases

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Pathogens: *Rhizoctonia solani, Fusarium spp., Pythium spp., Phytophthora sojae* (fungi)

Symptoms and occurrence: Symptoms occur just after planting and include pre-emergent seed rot and post-emergent damping-off (seedling death). *Pythium* and *Phytophthora* tend to be problematic in wet soils and can cause seed death or a wet rot. Seedlings infected with *Rhizoctonia* usually have a dry, reddish-brown lesion at the base of their stems.

Conditions for development: In general, *Pythium spp.* can develop over a wide range of soil temperatures. *Phytophthora spp.* develops best when soil temperatures are warm. High soil moisture is favorable for development of both. *Rhizoctonia solani* develops best when soil temperatures are warm, but *Fusarium* development occurs most with cool soil temperatures.

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Aerial blight

Pathogen:
Rhizoctonia solani (fungus)

Symptoms and occurrence: Aerial blight can spread rapidly in soybeans – if it's not properly managed. **This fungus also incites sheath blight in rice.** Initial symptoms can be evident throughout the growing season but usually develop when plants are in late vegetative or early reproductive growth stages. These symptoms appear as water-soaked, greasy blotches on leaves (usually in the lower to middle canopy). As the disease progresses, white cottony fungal mycelia may cause adjacent leaflets to adhere together. If favorable conditions persist, the foliage becomes brown and blighted, and pods may have reddish-brown lesions. If the disease continues to progress, pods may be aborted. The potential for risk increases when soybean and rice crops are rotated in a field. This disease can spread rapidly within the crop and should be managed immediately upon detection if the crop is in the late vegetative or reproductive growth stages.

Conditions for development: This disease favors warm overcast days and extended periods of high relative humidity or leaf wetness.

Aerial blight foliar blight.

Aerial blight fungus on leaf margin.

Aerial blight plants matted together by fungus.

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Bacterial pustule

Pathogen:
Xanthomonas axonopodis pv. *Glycines* (bacterium)

Symptoms and occurrence: Symptoms of this disease are similar to soybean rust. The disease, while found most years, is not a major disease of Louisiana soybeans. Symptoms can be evident during early vegetative growth stages and appear as small, pale green, water-soaked spots with elevated centers on the upper and lower leaf surfaces. As the lesions (spots) mature, they turn brown with elevated volcanolike pustules on the lower leaf surface and are easily confused with rust. Careful examination with a dissecting microscope or a 20x hand lens is required to distinguish between these two diseases. Pustules are dry in appearance and may be found on pods in susceptible varieties.

Bacterial pustule on underside of leaflet.

Bacterial pustule upper surface of leaflet.

Conditions for development: Disease development favors temperatures between 85 and 90 degrees Fahrenheit and wet weather. The bacterium may be seed-borne. It also survives on crop residue, wheat roots and in weed hosts such as Redvine. The bacterium may be dispersed by splashing water or windblown rain.

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Cercospora blight/purple seed stain

Pathogen:
Cercospora kikuchii (fungus)


Petiole lesion Cercospora Blight.

Symptoms and occurrence: Cercospora blight/purple seed stain is the No. 1 soybean disease in Louisiana. The fungus can infect seedlings, resulting in plant death or latency. Foliar symptoms of this disease usually are not evident until soybeans are in the mid- to late reproductive growth stages. Initial symptoms appear as small, chocolate brown lesions on the petioles near the base of the leaflet. As the disease progresses, foliar symptoms are expressed as a reddish-brown to tan discoloration on the upper leaf surfaces in the upper canopy. Leaves may have a leathery appearance. The fungus can sporulate in older lesions and resemble ashes. Advanced stages of this disease result in premature defoliation, discolored pods and reduced seed quality. The seed phase of this disease is evidenced by purple-stained seeds at harvest.


Initial foliar symptoms.


Purple seed stain.


Severe foliar symptoms.

Conditions for development: Seedling infection is most likely with moderate temperatures (70 to 80 Fahrenheit) and extended periods of leaf wetness (eight to 16 hours). But petiole and leaf symptoms during late reproductive growth stages, including defoliation, favor hot, dry conditions. The pathogen may be seed-borne and survives on plant debris in the soil. The fungus also has been found in some weeds.

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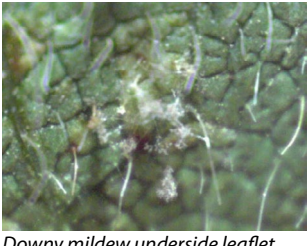
Downy mildew

Pathogen: *Peronospora manshurica* (fungus)

Symptoms and occurrence: Currently, this disease is not a major threat to soybeans produced in Louisiana. Symptoms usually occur during late vegetative or reproductive growth stages, and may be confused with those of soybean rust. Symptoms initiate as small, pale green to yellow spots on the upper leaf surfaces. Older lesions or spots may turn gray to dark brown. When the disease is active, grayish tufts of fungal mycelium (similar to dryer lint) can be found on the underside of the leaf opposite the yellow spots.

Downy mildew foliar symptom.

Conditions for development: The disease develops rapidly when temperatures are between 50 and 77 degrees Fahrenheit and in the presence of extended periods of high relative humidity.



Downy mildew underside leaflet.

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Frogeye leaf spot

Pathogen: *Cercospora sojina* (fungus)

Symptoms and occurrence: Symptoms occur during early reproductive stages or later growth stages. Initial symptoms are found predominately as spots on the leaves in the mid- to lower canopy. Later symptoms also may appear as spots on the petioles, stems and pods. Initially, small, chocolate brown spots can be found on the leaflets. If the disease continues to develop, mature lesions have light brown to gray centers with reddish-brown margins. Stem lesions are rare but are elliptical with red centers and dark brown to black margins. Pod lesions are circular to elliptical, sunken and light gray to brown.

Conditions for development: Disease development favors warm, humid weather. The pathogen can survive on seeds and in infected plant debris.

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Soybean rust

Pathogen: *Phakopsora pachyrhizi* (fungus)

Symptoms and occurrence: The disease usually is evident when soybeans are in the mid- (R3) to late (R6) reproductive growth stages. Symptoms initiate in the lower canopy as small, brown to tan, raised pustules (volcanolike) on the lower leaf surfaces. Spores produced in these pustules resemble grains of sand and are tan when young. Older spores are darker colored. As the disease progresses, pustules may coalesce into blighted leaflets, causing the leaflets to defoliate. Pustules also can be present on petioles and pods when the disease is severe. Kudzu is another host for this fungus.

Conditions for development: The disease develops rapidly when temperatures are between 59 and 77 Fahrenheit and when leaves remain wet for six to 10 hours.

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Anthracnose

Pathogen:
Colletotrichum truncatum (fungus)

Symptoms and occurrence: Early infections by the fungus can result in pre- and postemergence damping-off. Foliar symptoms appear later in the growing season and include petiole cankers, leaf rolling, necrosis of the laminar veins and premature defoliation. As the plants approach maturity (R7-8), the fungus can produce acervulli (fruiting bodies that resemble black specks) on the stems and pods. These bodies occur randomly on the stems – not in linear rows as with pod and stem blight. If the disease continues to develop on the pods, seed quality will be compromised.

Conditions for development: The disease favors periods of high relative humidity. Infection occurs throughout the growing season, and the fungus overwinters in crop debris and infected seed.

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Charcoal rot

Pathogen: *Macrophomina phaseolina* (fungus)

Symptoms and occurrence: Symptoms can occur throughout the growing season. Infected seed may not germinate, or seedlings may die soon after emergence. Symptoms from plants with latent or mid-to-late-season infections die prematurely during hot, dry weather. Symptoms can be associated with dry spots (sandy areas) in the field. The roots and lower stems are deteriorated, and the epidermal and subepidermal tissue will be silvery and covered with sclerotia (survival structures) that look like black pepper.

Conditions for development: Disease development occurs most in hot, dry weather (82-95 degrees Fahrenheit). The fungus can survive in the seed coat, host residue or the soil.

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Phytophthora rot

Pathogen: *Phytophthora spp*. (fungus)

Symptoms and occurrence: Soybeans can be affected during any growth stage. Symptoms associated with this disease include yellowing of the foliage, wilting and a chocolate brown lesion at the base of the stem. There is an immediate transition from the brown lesion to green stem. This lesion can extend several inches above the soil line. In some cases, the plants appear to recover from this disease if growing conditions improve.

Phytophthora rot in field.

Phytophthora stem lesion.

Conditions for development: Infection and disease development are optimized in the presence of favorable temperatures (77-82 degrees Fahrenheit) and flooded conditions. This disease is most common with heavy, tight soils that are prone to flooding. The fungus overwinters on crop residue in the soil.

Stem and root stem symptoms

Wilting caused by Phytophthora

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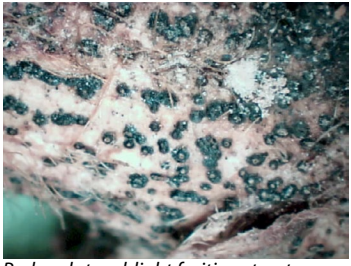
Pod and stem blight

Pathogen: *Diaporthe phaseolorum* var. *sojae* (fungus)

Symptoms and occurrence: Infection may occur early in the season, but signs of the disease are not evident until late season (R7). Pycnidia (fruiting bodies that resemble black specks) occur in linear rows on the stems and pods. If favorable conditions persist, seed quality will be compromised.



Pod and stem blight fruiting structures.

Conditions for development: This disease favors warm, wet weather. The fungus overwinters in crop residue or infected seed.

Pod and stem blight.

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Red crown rot

Foliar symptom.

Pathogen:
Calonectria ilicicola (fungus)

Symptoms and occurrence:
Root infections may occur soon after planting, but initial symptoms usually are not evident until soybeans are in mid- to late reproductive growth stages. Roots become black with rotted segments, and the base of the stem at the soil line may be covered with brick red reproductive structures (usually most evident during periods of high soil moisture). Foliar symptoms are characterized by interveinal yellow or brown blotches.

Red crown rot fruiting structures at stem base.

Conditions for development: Moderate temperatures and wet soil conditions at planting promote disease development. Maximum root infections occur when soil temperatures are in the range of 77 to 86 degrees Fahrenheit. The fungus may overwinter in soil and on infested plant debris in the soil.

Red crown rot soybean.

Top: Healthy root system.
Bottom: Infected root system.

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To find more details about soybean production and management, visit these websites from the LSU AgCenter and others:

Soybean Web Portal
www.LSUAgCenter.com/soybeans

Soybean Weeds
www.LSUAgCenter.com/soybeans/weed+control

Soybean Insects
www.LSUAgCenter.com/soybeans/insects

Soybean Diseases
www.LSUAgCenter.com/soybeans/diseases

Soybean Disease Publications
www.LSUAgCenter.com/soybeans/publications

Soybean Videos
www.LSUAgCenter.com/soybeans/videos

Soybean Verification Program
www.LSUAgCenter.com/soybeans/LSRVP

Soybean Variety Trials and Production Guidelines
www.LSUAgCenter.com/soybeans/
Variety+Trails+Recommendations

LSU AgCenter Soybean Agents
www.LSU AgCenter.com/soybeans/Contact+Us

Weed Science Society of America Photo Gallery
http://wssa.net/Weeds/ID/PhotoGallery.htm

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For the Louisiana soybean and grain industry to remain viable, it is essential that producers and consultants be able to identify and manage existing as well as emerging weed, insect and disease issues.

To meet this need, the Louisiana Soybean and Grain Research and Promotion Board ***provided support through checkoff funds to develop this pocket field guide.***

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Production, Design and Distribution
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Editor, Tom Merrill
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Photo Credits
Most images in this field guide were provided by LSU AgCenter personnel.

Other photos courtesy of:

Kathy Kamminga, Virginia Tech (stink bug, page 48)

Amanda Greer, University of Arkansas (pod and stem blight, page 70)

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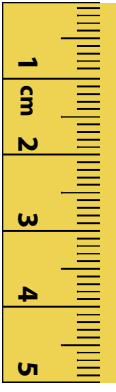
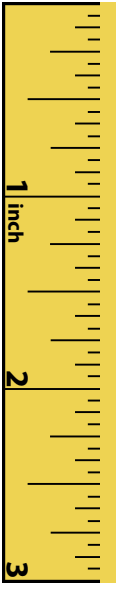
Notes





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Soybean Weed, Insect and Disease Field Guide

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Pub. 3243 (5M) 11/12

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