Integrated Pest Management

MISSOURI WEED SEEDS

Plant Protection Programs
College of Agriculture, Food and Natural Resources
This publication is part of a series of IPM Manuals prepared by the Plant Protection Programs of the University of Missouri. Topics covered in the series include an introduction to scouting, weed identification and management, plant diseases, and insects of field and horticultural crops. These IPM Manuals are available from MU Extension at the following address:

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**1-800-292-0969**

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**On the World Wide Web**

**Production**
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Positive identification of pests, including weeds, is the first step in a sound integrated pest management program. Knowledge of plant morphological features, such as leaf and stem shape, flower type and color, and the presence of hairs make identification relatively easy compared with relying on seed physical characteristics. On occasion, the agricultural producer and other professionals will be challenged to identify a weed by the features of its seed. This can be a daunting task because of the relatively small size of seed, the change in surface characteristics caused by various processes and subtle color variation within even the same species.

The purpose of this publication is to assist those who attempt to identify weeds by their seed characteristics. This guide is intended not only for agricultural professionals, but also those who are hobbyists, such as FFA members. A hand or pocket lens with a magnification power of 10x will be especially helpful in using this guide. For an idea of relative seed size, each photograph contains a millimeter ruler. The distance between increments on the scale is 1 mm. Compare your sample with the color images in this guide to assist in your identification. Seed photographs are grouped by their plant taxonomic family for both broadleaf and grass or grass-like weeds. You may also refer to the indexes of common names -- broadleaf plant families on page 16 and grass and grass-like plant families on page 19.

Local University of Missouri Extension Centers can provide information to assist you in pest identification and control decisions. They can help you submit samples to MU’s Extension Plant Diagnostic Clinic for positive identification. For specific weed control information in agronomic crop settings, MU publication MP 575, Weed Control Guide for Missouri Field Crops, may be purchased through the local centers. For weed control in turfgrass areas, refer to MU publication IPM 1009, Turfgrass and Weeds. To order these or any other MU Extension publication, call 1-800-292-0969 or go online at http://muextension.missouri.edu/
Broadleaf plant families

**Aizoaceae** (Carpetweed family)

This is a small family of plants. Other than carpetweed, only two species of plants in this family are known to occur in relatively isolated locations in Missouri.

**Amaranthaceae** (Amaranth family)

In Missouri the amarants (pigweeds) make up the vast majority of plant genera that occur within this family.

**Anacardiaceae** (Cashew family)

In addition to several sumac species, poison ivy is a member of this family and is widespread throughout the state.

**Apiaceae** (Carron family)

Also known as the parsley family, this large family includes several herbal plants such as caraway, dill and fennel. It also contains several toxic plants such as poison hemlock and water hemlock.
Apocynaceae (Dogbane family)
The Dogbane family has relatively few members that occur in Missouri.

Araceae (Arum family)
The two most prevalent members of the arum family are jack-in-the-pulpit and the closely related green dragon, both found throughout the state.

Asclepiadaceae (Milkweed family)
All members of this plant family are known as milkweeds. There are at least 15 species of milkweeds that occur in the state.

Asteraceae (Aster family)
The aster family is the largest and most diverse family of broadleaf plants in Missouri. Its members include various species of goldenrod, sunflower and thistle.
Broadleaf plant families

Asteraceae (Aster family) continued

Asclepiadaceae (Milkweed family) continued

Cocklebur, common Xanthium strumarium
Dandelion Taraxacum officinale
Dock, prairie Silphium terebinthinaceum
Eclipta Eclipta prostrata
Galinsoga, hairy Galinsoga ciliata
Goldenrod, Canada Solidago canadensis
Goldenrod, tall Solidago altissima
Groundsel, common Senecio vulgaris
Horseweed Conyza canadensis
Ironweed, tall Vernonia altissima
Ironweed, western Vernonia baldwinii
Lettle, prickly Lactuca seriola
Lettuce, tall Lactuca canadensis
Ragweed, common Ambrosia artemisiifolia
Ragweed, giant Ambrosia triloba
Ragweed, lanceleaf Ambrosia bidentata
Ragweed, western Vernonia baldwinii
Rosinweed, cup Silphium perfoliatum
Rosinweed, wholeleaf Silphium integrifolium
Salsify, western Tragopogon dubius
Snakeroot, white Eupatorium rugosum
Sowthistle, annual Sonchus oleraceus
Sowthistle, spiny Sonchus asper
**Spanishneedles**  
Bidens bipinnata

**Bidens bipinnata**

**Sunflower, common**  
Helianthus annuus

**Helianthus annuus**

**Thistle, bull**  
Cirsium vulgare

**Cirsium vulgare**

**Thistle, Canada**  
Cirsium arvense

**Cirsium arvense**

**Thistle, field**  
Cirsium discolor

**Cirsium discolor**

**Thistle, musk**  
Carduus nutans

**Carduus nutans**

**Thistle, Scotch**  
Onopordum acanthium

**Onopordum acanthium**

**Falseflax, smallseed**  
Camelina microcarpa

**Camelina microcarpa**

**Flixweed**  
Descurainia sophia

**Descurainia sophia**

**Mustard, hedge**  
Sisymbrium officinale

**Sisymbrium officinale**

**Brassica kaber**

**Brassicaceae**  
(Borage family)

This family of plants also includes several nuisance plants known as "beggar's lice" because their fruits readily attach to clothing and other articles.

**Boraginaceae**  
(Borage family)

**Thistle, tall**  
Cirsium altissimum

**Cirsium altissimum**

**Bignoniaceae**  
(Trumpetcreeper family)

Besides trumpetcreeper, there are few species of *catalpa* that are present in this family within Missouri.

**Campsis radicans**

**Trumpetcreeper**

**Boraginaceae**  
(Borage family)  
... continued

**Brassicaceae**  
(Mustard family)

The mustard family is one of the larger groups of plants in the state. Several plants within this family, such as yellow rocket and wild mustard, are common throughout Missouri.

**Brassicaceae**  
(Mustard family)

**Boraginaceae**  
(Borage family)
**Brassicaceae (Mustard family)**

*continued*

- Rocket, yellow *Barbarea vulgaris*
- Shepherd’s-purse *Capsella bursa-pastoris*
- Tansymustard, green *Descurainia pinnata ssp. brachycarpa*

**Brassicaceae (Mustard family)**

*continued*

- Sibara *Sibara virginica*
- Shepherd’s-purse *Capsella bursa-pastoris*
- Tansymustard, green *Descurainia pinnata ssp. brachycarpa*

**Cannabaceae (Mulberry family)**

Other than hops, this family includes mulberry, Osage orange and hemp.

- Hops, Japanese *Humulus japonicus*
- Bouncingbet *Saponaria officinalis*
- Catchfly, sleepy *Silene antirrhina*

**Capparidaceae (Caper family)**

This small family of plants has only a few members that occur in Missouri such as spider flower.

- Clammyweed, roughseed *Polanisia dodecandra*
- Chickweed, common *Stellaria media*
- Chickweed, mouseear *Cerastium vulgatum*

**Caprifoliaceae (Honeysuckle family)**

This family includes several species of honeysuckle, viburnum and elderberry.

- Buckbrush *Symphoricarpos orbiculatus*
- Feverwort *Triostium perfoliatum*
- Chickweed, nodding *Cerastium nutans*
Chenopodiaceae (Goosefoot family)

At least 18 different Chenopodium genera members, also known as lambsquarters, are present in Missouri. Kochia is also another important member.

Chenopodiaceae (Goosefoot family)

Kochia
Kochia scoparia

Lambsquarters, common
Chenopodium album

Moringglory, ivyleaf
Ipomoea hederacea

Moringglory, pitted
Ipomoea lacunosa

Moringglory, tall; Ipomoea purpurea

Chenopodiaceae (Goosefoot family)

Kochia
Kochia scoparia

Lambsquarters, common
Chenopodium album

Convolvulaceae
(Morningglory family)

Most of the members of this family are vining plants, including several common species of morningglories, bindweeds and the parasitic group of plants, dodders.

Convolvulaceae
(Morningglory family)

Bindweed, field
Convolvulus arvensis

Bindweed, hedge
Calystegia sepium

Thistle, Russian
Salsola iberica

Burcucumber
Sicyos angulatus

Cucurbitaceae
(Gourd family)

Cucurbits include cultivated plants, such as gourd, squash and cucumber.

Cucurbitaceae
(Gourd family)

Morningglory, bigroot
Ipomoea pandurata

Teasel, common
Dipsacus fullonum

Teasel, cutleaf
Dipsacus laciniatus

Dipsacaceae
(Teasel family)

The only two members of this family of plants that are known to occur in Missouri are cutleaf and common teasel.
**Euphorbiaceae (Spurge family)**

Most of the plants from this family present in Missouri are spurges, which include about 20 different species.

- Copperleaf, hop hornbeam; *Acalypha ostryifolia*
- Copperleaf, Virginia; *Acalypha virginica*
- Croton, tropic; *Croton glandulosus* var. septentrionalis
- Croton, woolly; *Croton capitatus*
- Spurge, nodding; *Euphorbia nutans*
- Spurge, prostrate; *Euphorbia humistrata*
- Spurge, toothed; *Euphorbia dentata*
- Spurge, prostrate; *Euphorbia humistrata*
- Spurge, toothed; *Euphorbia dentata*
- Spurge, prostrate; *Euphorbia humistrata*
- Spurge, toothed; *Euphorbia dentata*

**Fabaceae (Pea family)**

The legume family is one of the largest groups of broadleaf plants. Common members include clovers and various beans and peas.

- Blue false indigo; *Baptisia australis*
- Bundleflower, Illinois; *Desmanthus illinoensis*
- Copperleaf, Virginia; *Acalypha virginica*
- Copperleaf, hop hornbeam; *Acalypha ostryifolia*
- Croton, tropic; *Croton glandulosus* var. septentrionalis
- Croton, woolly; *Croton capitatus*
- Rattlebox; *Crotalaria sagittalis*
- Senna, wild; *Cassia marilandica*
- Sericea lespedeza; *Lespedeza cuneata*
- Sesbania, hemp; *Sesbania exaltata*
- Tick trefoil; *Desmodium paniculatum*
Geraniaceae (Geranium family)

The majority of this family of plants present in Missouri are geraniums. There are at least five species known to occur in the state.

Liliaceae (Lily family)

Besides being considered weedy plants, several members of the lily family are commonly cultivated. Such members include asparagus, yucca and many cultivars of daylilies.

Lamiaceae (Mint family)

Common members of the mint family not shown in this guide are henbit and purple deadnettle, which are two of the most prevalent winter annuals in Missouri.

Malvaceae (Mallow family)

Several species of the mallow family are among the most common broadleaf weeds in Missouri. These include velvetleaf and prickly sida. Cotton is also a member of this family.
Broadleaf plant families

**Malvaceae** (Mallow family)

- Hibiscus lasiocarpos
- Sida spinosa

**Onagraceae** (Evening primrose family)

- Oenothera biennis

**Martyniaceae** (Unicorn-plant family)

- Proboscidea louisiana

**Menispermaceae** (Moonseed family)

- Cocculus carolinus

**Phytolaccaceae** (Pokeweed family)

- Phytolacca americana
Plantaginaceae (Plantain family)

The group of plants known collectively as plantains has about 11 species in the state.

**Plantain, blackseed**
Plantago rugelii

**Plantain, bracted**
Plantago aristata

**Plantain, buckhorn**
Plantago lanceolata

**Plantain, hoary**
Plantago media

**Polygonaceae** (Smartweed family)

Many different species of plants in Missouri are known as smartweeds, some of which are among the state’s most common weeds. Of about 30 genera of these plants worldwide, at least six are present in Missouri.

**Buckwheat, wild**
Polygonum convolvulus

**Dock, broadleaf**
Rumex obtusifolius

**Dock, curly**
Rumex crispus

**Knotweed, prostrate**
Polygonum aviculare

**Plantain, hoary**
Plantago media

**Plantain, blackseed**
Plantago rugelii

**Plantain, bracted**
Plantago aristata

**Plantain, buckhorn**
Plantago lanceolata

**Plantain, hoary**
Plantago media

**Polygonaceae** (Smartweed family)

**Lady’s-thumb**
Polygonum persicaria

**Smartweed, hedge**
Polygonum scandens

**Smartweed, Pennsylvania**
Polygonum pensylvanicum

**Sorrel, red**
Rumex acetosella

**Portulacaceae** (Purslane family)

Of 20 genera known within this family, there are only three present in the state. Purslane is the most common among them.

**Purslane, common**
Portulaca oleracea

**Ranunculaceae** (Buttercup family)

This rather large group of plants is best known for buttercups, of which there are nearly 20 species in Missouri. Clematis is another fairly common plant genus occurring in this family.

**Buckwheat, wild**
Polygonum convolvulus

**Dock, broadleaf**
Rumex obtusifolius

**Dock, curly**
Rumex crispus

**Buttercup, bulbous**
Ranunculus bulbosus

**Buttercup, smallflower**
Ranunculus abortivus

**Ranunculaceae** (Buttercup family)
Broadleaf plant families

**Ranunculaceae**  
*(Buttercup family)*

*continued*

Columbine  
*Aquilegia canadensis*

**Rhamnaceae**  
*(Buckthorn family)*

The buckthorn family has three genera found in the state; *Rhamnus* spp. or buckthorn is the more common with three species.

Buckthorn, Carolina  
*Rhamnus caroliniana*

Buckthorn, lance-leaved  
*Rhamnus lanceolata*

**Rosaceae**  
*(Rose family)*

Many of the members of this family are commonly grown as cultivated plants, including rose, apple, pear and strawberry. A notorious member, multiflora rose, is one of the state’s noxious weeds.

Cinquefoil, sulfur;  
*Potentilla recta*

**Rubiaceae**  
*(Madder family)*

Although a large family of plants with about 600 genera, there are about eight genera present in Missouri. The genus, *Galium*, is the largest in this state with at least 11 species, including a common winter annual, catchweed bedstraw.

**Sapindaceae**  
*(Soapberry family)*

The soapberry family has only two genera present in the state and is not common, although there are about 140 members worldwide.

Balloontwine  
*Cardiospermum halicacabum*

**Scrophulariaceae**  
*(Figwort family)*

Of the nearly 280 genera, at least 25 are known to be in Missouri. The genera that contain mullein and speedwell are among the most common.

Poorjoe;  
*Diodia teres* (both photos)

Mullein, common  
*Verbascum thapsus*

Mullein, moth  
*Verbascum blattaria*
Solanaceae
(Nightshade family)

Some of the state’s most prevalent weed problems are caused by this family’s members, such as various species of nightshade. Other members are commonly cultivated such as tomato, pepper, potato and eggplant.

Verbenaceae
(Vervain family)

Of about 90 known genera, only three occur in the state. Most prevalent are the vervains, with seven species, most commonly encountered throughout Missouri.

Vitaceae
(Grape family)

Several species of the grape family are commercially valuable to the state’s economy. Virginia creeper is one of the most common vining weeds encountered in undisturbed habitats.
This relatively small plant family has about 30 members, but only two actually occur in Missouri. Of these two, puncturevine is the more common.
Grass and grasslike plant families

Cyperaceae
(Sedge family)
Missouri is home to more than 200 species of sedges. Agronomically, yellow nutsedge, *Cyperus esculentus*, is considered to be the most problematic in prevalence of this family of plants.

Liliaceae
(Lily family)
Several members of this family are cultivated as ornamentals, including daffodil and day lily. About 30 species of this family are present in the state.

Poaceae
(Grass family)
About 270 species of true grasses are found in the state. Many species are economically important, including corn, wheat, sorghum, rye, fescue, oats, rice, barley and various millets.

Juncaceae
(Rush family)
More than 20 species of rushes occur in Missouri. Rushes are not true grasses or sedges. Determining individual species of rushes by plant characteristics is nearly impossible.
Poaceae
(Grass family)
...continued

Continued

Cheat
Bromus secalinus

Crabgrass, large
Digitaria sanguinalis

Indian grass, yellow
Sorghastrum nutans

Johnson grass
Sorghum halepense

Crabgrass, smooth
Digitaria ischaemum

Cupgrass, woolly
Eriochloa villosa

Lovegrass, purple
Eragrostis spectabilis

Mannagrass, fowl
Glyceria striata

Dropseed
Sporobolus asper

Fountain grass, crimson
Pennisetum ruppelli

Millet, foxtail
Setaria italica

Oat, wild
Avena tatau

Foxtail, bristly
Setaria verticillata

Foxtail, giant
Setaria faberi

Panicum, fall
Panicum dichotomiflorum

Paspalum, foxtail
Paspalum laeve

Foxtail, green
Setaria viridis

Foxtail, yellow
Setaria glauca

Paspalum, hairyseed
Paspalum pubiflorum

Paspalum, thin
Paspalum setaceum
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<thead>
<tr>
<th>Common name</th>
<th>Scientific name</th>
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<td>Barnyardgrass</td>
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<td>Bluegrass, annual</td>
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<td>Brome, Japanese</td>
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<td>Crabgrass, large</td>
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<td>Crabgrass, smooth</td>
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<td>Mannagrass, fowl</td>
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