

Integrated Pest Management

MISSOURI MEED SEEDS

Plant Protection Programs

College of Agriculture, Food

and Natural Resources

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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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MU Extension and Agricultural Information Tammy McNiel, editor Dennis Murphy, illustrator

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Common name index - Grass and grasslike



A PHOTO COMPENDIUM OF MISSOURI WEED SEEDS

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 sacle 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 grasslike weeds. You may also refer to the indexes of common names -- broadleaf plant families on page 16 and grass and grasslike plant families on page 19.

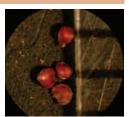
Local University of Missouri Extension Centers can provide information to assist you in pest identification and control decisions. They can help you submit samples to MU's Extension Plant Diagnostic Clinic for positive identification. For specific weed control information in agronomic crop settings, 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/.

Aizoaceae (Carpetweed family)

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.



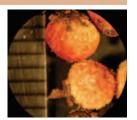
Carpetweed Mollugo verticillata

Anacardiaceae (Cashew family)

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



Sumac, smooth; Rhus glabra



Amaranthaceae (Amaranth family)

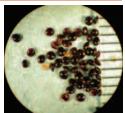
In Missouri the *amaranths* (pigweeds) make up the vast majority of plant genera that occur within this family.



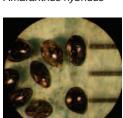
Amaranth, Palmer Amaranthus palmerii

Pigweed, tumble

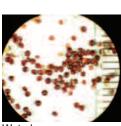
Amaranthus albus



Pigweed, smooth Amaranthus hybridus



Pigweed, redroot Amaranthus retroflexus



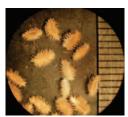
Waterhemp, common Amaranthus rudis

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.



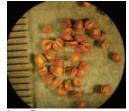
Carrot, wild Daucus carota



Hedgeparsley, Japanese Torilis japonica



Chervil, wild Anthriscus sylvestris



Laceflower Ptilimnium nuttallii

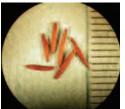


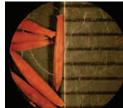
Poison-hemlock Conium maculatum

Apiaceae (Carron family)

Apocynaceae (Dogbane family)

The Dogbane family has relatively few members that occur in Missouri.





Dogbane, hemp; Apocynum cannabinum

Araceae (Arum family)

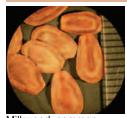
The two most prevalent members of the arum family are jack-in-the-pulpit and the closely related green dragon, both found throughout the state.



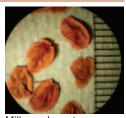
Jack-in-the-pulpit Arisaema atrorubens

Asclepiadaceae (Milkweed family)

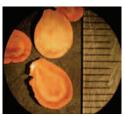
All members of this plant family are known as milkweeds. There are at least 15 species of milkweeds that occur in the state.



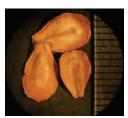
Milkweed, common Asclepias syriaca



Milkweed, eastern whorled Asclepias verticillata



Milkweed, green Asclepias hirtella



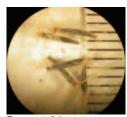
Milkweed, honeyvine *Ampelamus albidus*

Asteraceae (Aster family)

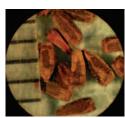
The aster family is the largest and most diverse family of broadleaf plants in Missouri. Its members include various species of goldenrod, sunflower and thistle.



Aster, white heath Aster pilosus



Boneset, false Kuhnia eupatorioides



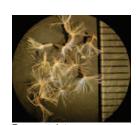
Browneyed-susan Rudbeckia triloba



Burnweed, American Erechtites hieraciifolia



Beggarticks, bearded Bidens aristosa



Boneset, late Eupatorium serotinum



Burdock, common Arctium minus



Chicory Cichorium intybus

Apocynaceae (Dogbane family)

Broadleaf plant families

Asteraceae (Aster family)

Asteraceae (Aster family)

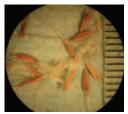
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Asclepiadaceae (Milkweed family)

continued



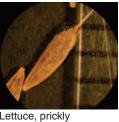
Cocklebur, common Xanthium strumarium



Dandelion Taraxacum officinale



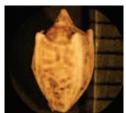
Lettuce, tall Lactuca canadensis



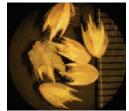
Lettuce, prickly Lactuca serriola



Ragweed, common Ambrosia artemisiifolia



Ragweed, giant Ambrosia trifida



Ragweed, lanceleaf Ambrosia bidentata



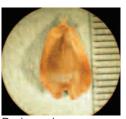
Galinsoga, hairy Galinsoga ciliata

Dock, prairie

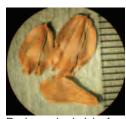


Eclipta Eclipta prostrata

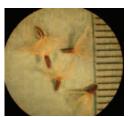
Goldenrod, Canada Solidago canadensis



Rosinweed, cup Silphium perfoliatum



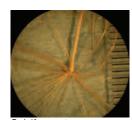
Rosinweed, wholeleaf Silphium integrifolium



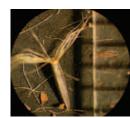
Goldenrod, tall Solidago altissima



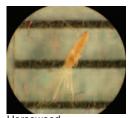
Groundsel, common Senecio vulgaris



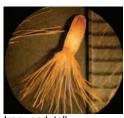
Salsify, western Tragopogon dubius



Snakeroot, white Eupatorium rugosum



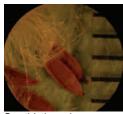
Horseweed Conyza canadensis



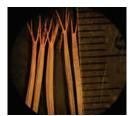
Ironweed, tall Vernonia altissima



Sowthistle, annual Sonchus oleraceus



Sowthistle, spiny Sonchus asper



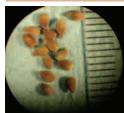
Spanishneedles Bidens bipinnata



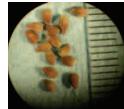
Sunflower, common Helianthus annuus

Boraginaceae (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.



Gromwell, corn; Lithospermum arvense





Thistle, bull Cirsium vulgare

Thistle, field



Thistle, musk Carduus nutans

Brassicaceae (Mustard family)

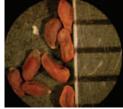
The mustard family is one of the larger groups of plants in the state. Several plants within this family, such as yellow rocket and wild mustard, are common throughout Missouri.



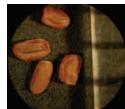
Thistle, Scotch Onopordum acanthium



Thistle, tall Cirsium altissimum



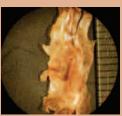
Falseflax, smallseed Camelina microcarpa



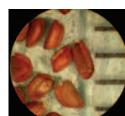
Flixweed Descurainia sophia



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



Trumpetcreeper Campsis radicans



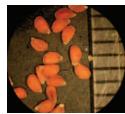
Mustard, hedge Sisymbrium officinale



Pennycress, field Thlaspi arvense



Mustard, wild Brassica kaber



Pepperweed, Virginia Lepidium virginicum

Asteraceae (Aster family)

.... continued

Broadleaf plant families

Brassicaceae (Mustard family) Dipsacaceae (Mustard family)continued

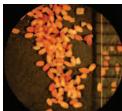
Broadleaf plant families

Brassicaceae (Mustard family)

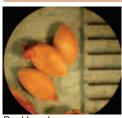
continued



Rocket, yellow Barbarea vulgaris



Shepherd's-purse Capsella bursa-pastoris

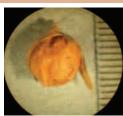


Caprifoliaceae

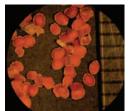
(Honeysuckle family)

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

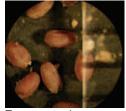
Buckbrush Symphoricarpos orbiculatus



Feverwort Triosteum perfoliatum



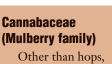
Sibara *Sibara virginica*



Tansymustard, green Descurainia pinnata ssp. brachycarpa

Caryophyllaceae (Pink family)

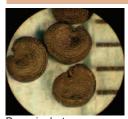
At least 14 species of "chickweed" and several species of sleepy catchfly make up the majority of this family in Missouri.



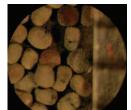
Other than hops, this family includes mulberry, Osage orange and hemp.



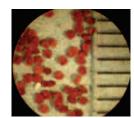
Hops, Japanese Humulus japonicus



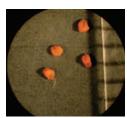
Bouncingbet Saponaria officinalis



Catchfly, sleepy Silene antirrhina



Chickweed, common Stellaria media



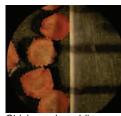
Chickweed, mouseear Cerastium vulgatum

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, nodding Cerastium nutans

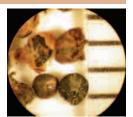
Caryophyllaceae (Pink family)

Chenopodiaceae (Goosefoot family)

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



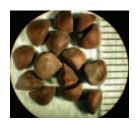
Kochia Kochia scoparia



Lambsquarters, common Chenopodium album



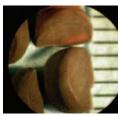
Morningglory, ivyleaf Ipomoea hederacea



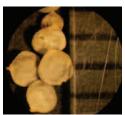
Chenopodiaceae

(Goosefoot family)

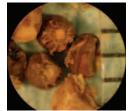
Morningglory, pitted Ipomoea lacunosa



Morningglory, tall; Ipomoea purpurea



Povertyweed, Nuttall Monolepis nuttalliana



Thistle, Russian Salsola iberica

Cucurbitaceae (Gourd family)

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



Burcucumber Sicyos angulatus

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.



Bindweed, field Convolvulus arvensis

Dodder, field

Cuscuta campestris



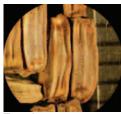
Bindweed, hedge Calystegia sepium



Morningglory, bigroot Ipomoea pandurata

Dipsacaceae (Teasel family)

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



Teasel, common Dipsacus fullonum



Teasel, cutleaf Dipsacus laciniatus

Dipsacaceae (Teasel family)

Broadleaf plant families

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Broadleaf plant families

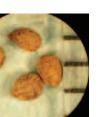
Euphorbiaceae (Spurge family)

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





Copperleaf, hophornbeam; Acalypha ostryifolia





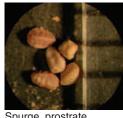
Copperleaf, Virginia; Acalypha virginica



Croton, tropic Croton glandulosus var. septentrionalis







Spurge, prostrate Euphorbia humistrata



Croton, woolly

Croton capitatus

Spurge, toothed

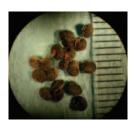
Euphorbia dentata

Fabaceae (Pea family)

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



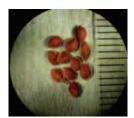
Blue false indigo Baptisia australi



Medic, black Medicago lupulina



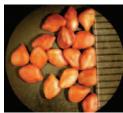
Rattlebox Crotalaria sagittalis



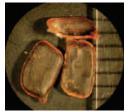
Sericea lespedeza Lespedeza cuneata



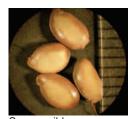
Sicklepod Cassia obtusifolia



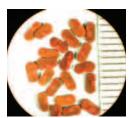
Bundleflower, Illinois Desmanthus illinoensis



Partridgepea Cassia fasciculata



Senna, wild Cassia marilandica

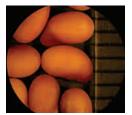


Sesbania, hemp Sesbania exaltata



Tick trefoil Desmodium paniculatum

Fabaceae (Pea family)



Wildindigo, long-bracted Baptisia leucophaea

Geraniaceae (Geranium family) The majority of this family of plants present in Missouri

are geraniums.

to occur in the

state.

There are at least five species known



Wildindigo, white Baptisia leucantha

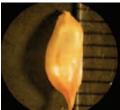
Carolina geranium

Geranium carolinianum

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.

Catbriar Smilax bona-nox



Garlic, wild Allium vineale



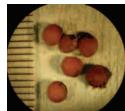


Onion, wild Allium canadense





Smooth carrion flower Smilax herbacea



Solomon's seal Polygonatum biflorum

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.

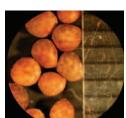


Germander, American Teucrium canadense

Prunella vulgaris



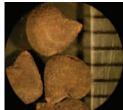
Gianthyssop, catnip Agastache nepetoides



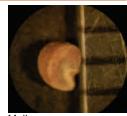
Mint, perilla Perilla frutescens

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.



Anoda, spurred Anoda cristata



Mallow, common Malva neglecta

Malvaceae (Mallow family)

Broadleaf plant families

Geraniaceae

(Geranium family)

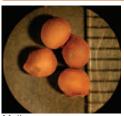
11

Malvaceae (Mallow family)continued

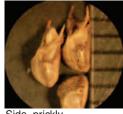
Broadleaf plant families

Malvaceae (Mallow family)

continued



Mallow, rose Hibiscus Iasiocarpos



Sida, prickly Sida spinosa



Velvetleaf; Abutilon theophrasti

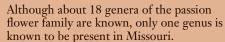
Passifloraceae (Passionflower family)

Onagraceae

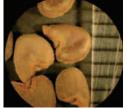
(Evening primrose family)

species present in Missouri.

Primrose is a common member of this family with approximately 14 different



Eveningprimrose, common; Oenothera biennis



Passionflower, maypop; Passiflora incarnata

Martyniaceae (Unicorn-plant family)

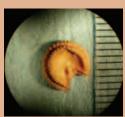
Devil's-claw, also known as unicorn plant, is the only known species of this family to be present in Missouri.



Devil's-claw Proboscidea Iouisianica

Menispermaceae (Moonseed famiy)

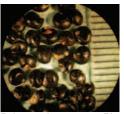
Although there are about 75 genera of the moonseed family, Missouri has only three known genera.



Moonseed, redberry Cocculus carolinus

Phytolaccaceae (Pokeweed family)

This relatively small plant family has only one genus occurring in Missouri, common pokeweed.

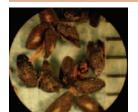


Pokeweed, common; Phytolacca americana

Phytolaccaceae (Pokeweed family)

Plantaginaceae (Plantain familiy)

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



Plantain, blackseed Plantago rugelii



Plantago aristata





Plantain, hoary Plantago media

Ladysthumb Polygonum persicaria



Plantaginaceae (Plantain family)

Polygonum scandens



Smartweed, Pennsylvania



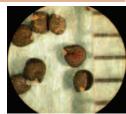
Sorrel, red Rumex acetosella

Portulacaceae (Purslane famiy)

Polygonum

pensylvanicum

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

Polygonaceae (Smartweed family)

Plantain, buckhorn Plantago lanceolata

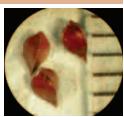
Many different species of plants in Missouri are known as smartweeds, some of which are among the state's most common weeds. Of about 30 genera of these plants worldwide, at least six are present in Missouri.



Buckwheat, wild Polygonum convolvulus

Dock, curly

Rumex crispus



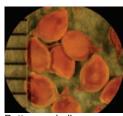
Dock, broadleaf Rumex obtusifolius



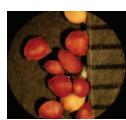
Knotweed, prostrate Polygonum aviculare

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.



Buttercup, bulbous Ranunculus bulbosus



Buttercup, smallflower Ranunculus abortivus

Ranunculaceae (Buttercup family)

Broadleaf plant families

13

Ranunculaceae (Buttercup family)continued

Broadleaf plant families

Ranunculaceae (Buttercup family)

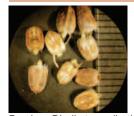
continued



Columbine Aquilegia canadensis

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.





Poorjoe; Diodia teres (both photos)

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

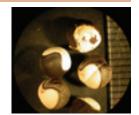
Sapindaceae (Soapberry family)

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

Of the nearly 280 genera, at least 25 are

known to be in Missouri. The genera that

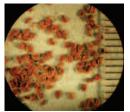
contain mullein and speedwell are among



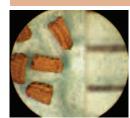
Balloonvine Cardiospermum halicacabum

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



Scrophulariaceae (Figwort family)

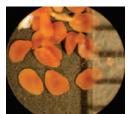
the most common.

Mullein, common Verbascum thapsus

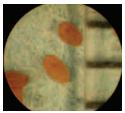


Mullein, moth Verbascum blattaria

Scrophulariaceae (Figwort family)



Speedwell, corn Veronica arvensis

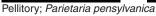


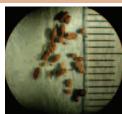
Speedwell, purslane Veronica peregrina

Urticaceae (Nettle family)

This relatively small family of plants has only five genera occurring in Missouri, but one of its members, *Laportea canadensis* or wood nettle, is a common nuisance plant because of its stinging hairs.

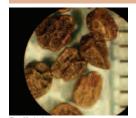






Solanaceae (Nightshade family) Some of the state's

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.



Buffalobur Solanum rostratum



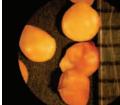
Groundcherry, clammy Physalis heterophylla

Verbenaceae (Vervain family)

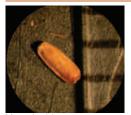
Of about 90 known genera, only three occur in the state. Most prevalent are the vervains, with seven species, most commonly encountered throughout Missouri.



Groundcherry, smooth Physalis subglabrata



Horsenettle Solanum carolinense



Vervain, blue Verbena hastata



Vervain, hoary Verbena stricta



Jimsonweed Datura stramonium



Nightshade, bittersweet Solanum dulcamara



Nightshade, eastern black Solanum ptycanthum

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.



Raccoon grape Ampelopsis cordata



Virginia-creeper; Parthenocissus quinquefolia

Vitaceae (Grape family)

Broadleaf plant families

Scrophulariaceae

(Figwort family)

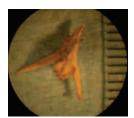
....continued

Zygophyllaceae (Caltrop family)

sroadleaf plant families

Zygophyllaceae (Caltrop family)

This relatively small plant family has about 30 members, but only two actually occur in Missouri. Of these two, puncturevine is the more common.



Puncturevine Tribulus terrestris

Milkweed, eastern

whorled, 5

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Wildindigo,

long-bracted, 11

Wildindigo, white, 11

Cyperaceae (Sedge family)

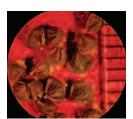
Missouri is home to more than 200 species of sedges. Agronomically, yellow nutsedge, *Cyperus esculentus*, is considered to be the most problematic in prevalence of this family of plants.



Nutsedge, yellow Cyperus esculentus



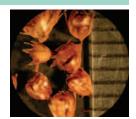
Sedge, fox Carex vulpinoidea



Sedge, Short's Carex shortiana

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.



Rush, grassleaf Juncus marginatus

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.



Garlic, wild Allium vineale



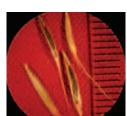
Onion, wild Allium canadense

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.



Barnyardgrass Echinochloa crus-galli



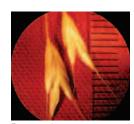
Brome, downy Bromus tectorum



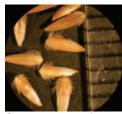
Broomsedge Andropogon virginicus



Bluegrass, annual Poa annua



Brome, Japanese Bromus japonicus



Canarygrass, reed Phalaris arundinacea

Cyperaceae (Sedge family)

Grass and grasslike plant families

Poaceae (Grass family)

Poaceae (Grass family) ...continued

Grass and grasslike plant families

Poaceae (Grass family)

Continued



Cheat Bromus secalinus



Crabgrass, large Digitaria sanguinalis





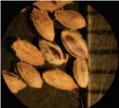
Indiangrass, yellow Sorghastrum nutans

Goatgrass, jointed

Aegilops cylindrica



Johnsongrass Sorghum halepense



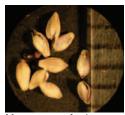
Crabgrass, smooth Digitaria ischaemum



Cupgrass, woolly Eriochloa villosa



Lovegrass, purple Eragrostis spectabilis



Mannagrass, fowl Glyceria striata



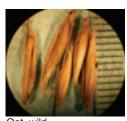
Sporobulus asper



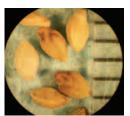
Fountaingrass, crimson Pennisetum ruppelii



Millet, foxtail Setaria italica



Oat, wild Avena fatua



Foxtail, bristly Setaria verticillata



Foxtail, giant Setaria faberi



Panicum, fall Panicum dichotomiflorum



Paspalum, field Paspalum laeve



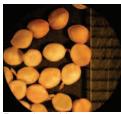
Foxtail, green Setaria viridis



Foxtail, yellow Setaria glauca



Paspalum, hairyseed Paspalum pubiflorum



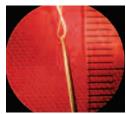
Paspalum, thin Paspalum setaceum



Purpletop Tridens flavus



Quackgrass Elytrigia repens



Threeawn, prairie Aristida oligantha



Timothy Phleum pratense



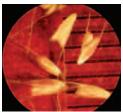
Sandbur, longspine Cenchrus longispinus



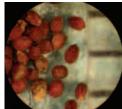
Shattercane Sorghum bicolor



Tridens, longspike Tridens strictus



Windmillgrass, tumble Chloris verticillata



Stinkgrass Eragrostis cilianensis



Switchgrass Panicum virgatum



Witchgrass Panicum capillare

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