



Integrated Pest Management

VINE WEEDS OF MISSOURI

Plant Protection Programs
College of Agriculture, Food
and Natural Resources

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Published by MU Extension, University of Missouri-Columbia

\$6.00

IPM1021

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:

Extension Publications
2800 Maguire Blvd.
Columbia, MO 65211
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Author

Fred Fishel
 Department of Agronomy
 University of Missouri-Columbia

Andy Kendig
 Department of Agronomy
 University of Missouri-Columbia

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Production

MU Extension and Agricultural Information
 Kathleen P. Kerr, editor
 Dennis Murphy, designer and illustrator



Ivyleaf morningglory.



VINE WEEDS OF MISSOURI

Vine weeds are particularly troublesome for many reasons. Their aggressive growth makes timely control with herbicides difficult. Desirable vegetation and wildlife habitat are choked out by their sprawling growth habit. Harvesting efficiency is hindered in agronomic settings because they twine around crop plants. Many of these weeds with a vinelike growth habit are perennials capable of reproducing by seed and vegetative structures, such as rhizomes and vast rootstocks. Some vine weeds even have toxic properties.

Some of these weeds are introduced species that have spread to Missouri from other states. Some are considered to be noxious in Missouri and other states. For more information on noxious weeds in Missouri, consult MU publication IPM1014, *Noxious Weeds of Missouri*.

These plants have subtle characteristics that separate them from their close relatives or other plants that are similar in physical appearance. Correct identification of vines makes control recommendations more effective because herbicides, application rates and size restrictions can be properly matched.

Use the taxonomic key on pages 13-15 of this publication to identify a suspect vine by the plant's physical features. Then, consult the plant description section for photographs and information about the weed.



Balloonvine.

This publication is a general reference and does not contain all vines that you may encounter in Missouri. If you need assistance in identifying a weed, submit a sample through your local extension center to the University Extension Diagnostic Clinic at the University of Missouri.

CONTROL OF VINE WEEDS

The key to control of annual vine weeds is timely application of an appropriate herbicide to small, actively growing weeds. Many annual vines can become difficult to control when they have grown more than 2 inches long. For example, Glyphosate (Roundup-type) herbicides are somewhat weak against morning-glory species.

For perennial vine weed control, consult MU publication G 4875, *Control of Perennial Broadleaf Weeds in Missouri Field Crops*. This guide has the latest control recommendations in crop settings.

The key to control of perennial vines is application of systemic herbicides when plants are fully leaved and are sending sugars down to root systems in preparation for winter. This downward movement of sugars helps carry the herbicides into the root system.

A common mistake is applying herbicides too early when relatively few weeds are present or when food reserves are moving upward from the roots. In this case, the leaf area limits the amount of herbicide that enters the plant, or the upward movement of sugars limits movement of the herbicides into the roots.

Conversely, herbicides are sometimes applied too late when the aboveground parts of the plant have stopped active growth. The ideal time to apply herbicides to perennial weeds is usually immediately after bloom. For many weeds, this corresponds to late summer to early fall.

With easier-to-control perennials, timing is less critical, and good results can be obtained with relatively few herbicide applications. Difficult perennials require repeated herbicide applications over many years.

In row crops, intensive tillage tends to disrupt perennial weeds; moderate tillage tends to help



Trumpet creeper.

spread perennial weeds; and no tillage favors perennial growth but will actually limit spread. Tillage implements can break roots and rhizomes and drag them to new locations where they can establish new patches of the particular weed.

Generally, products in which 2,4-D is the only active ingredient can provide good control of easier-to-control perennials. However, the more expensive brush killers, containing dicamba (Banvel, Clarity and others), picloram (Tordon) and triclopyr (Crossbow), are needed for the more difficult species. Many mixtures are available.

Glyphosate provides excellent control of some perennial weeds, but it is weaker on others. Be sure to read the product labels and to match herbicides to the vine species.

In row crops, dicamba-based herbicides (Banvel, Clarity and others) typically provide the best control of difficult perennials. Unfortunately, dicamba is not registered for preharvest use in soybean or cotton; however, it is registered for preharvest application in corn.

Perennial control recommendations usually call for high herbicide application rates that result in expensive treatments. It is rarely economical to treat entire fields for difficult perennials, especially since single applications are unlikely to provide complete control.

In most cases, spot applications should be made if possible. Products in which 2,4-D is the only active ingredient can provide excellent control of the easier-to-control annuals.

Control of perennial vines in agronomic crops is difficult. Long-term studies indicate that glyphosate in Roundup Ready crops will provide some perennial suppression; however, the major limitation is that glyphosate must be applied early for adequate control of annuals. Typically, those applications are too early for optimal perennial control. Dicamba is registered for preharvest and postharvest applications in corn (and grain sorghum), and you should consider planting these crops if perennials are a problem.

Before using any herbicide, read and follow directions on the label accompanying that product. Reference to specific trade names does not imply endorsement by the University of Missouri; discrimination is not intended against similar products.

PLANT DESCRIPTIONS



Balloonvine.



Field bindweed.

Balloonvine takes its name from its inflated, three-sided fruit, which resembles a hot-air balloon. The seed leaves, or cotyledons, of balloonvine are rectangular, but subsequent leaves are divided into three lobes and are alternate on the vine. The plant has tendrils, a distinctly ridged stem and small, white flowers that have four petals. Balloonvine seeds have a distinctive, seamed appearance, like a baseball or tennis ball, one side white and the other black. Balloonvine poses a problem in fields where the soybean crop is produced for seed. Balloonvine seeds, essentially the same size and weight as soybeans, are difficult to clean out of the harvested crop.

Balloonvine was probably introduced as an ornamental vine. Its distribution in Missouri is restricted to the eastern part of the state.

Field bindweed has been labeled as one of the worst weeds in North America. Shoots emerge from rhizomes, but the plant also produces seeds. Rhizomes that are spread by cultivation may initiate plants in areas that were previously not infested with the weed. If emerging from seed, field bindweed's cotyledons are square or kidney-shaped with a small notch in their tip. The plant's leaves are lobed at their base with the lobes pointing away from the petioles. The leaves occur alternately along the stems. The funnel-shaped flowers are usually white, although sometimes they are pink, and have the approximate diameter of a quarter.

A closely related species is hedge bindweed, *Calystegia sepium*. Hedge bindweed can be distinguished from field bindweed by its larger leaf size and by the square lobes of the leaf base.

Balloonvine (*Cardiospermum* *halicacabum*)

Growth habit:
summer annual

Other names:
heart pea, love-in-a-puff

Origin:
tropical America

Control classification:
moderately difficult

Field bindweed (*Convolvulus* *arvensis*)

Growth habit:
perennial

Other names:
creeping Jenny, small bindweed, morningglory

Origin:
Europe and Asia

Control classification:
moderately easy

Burcucumber
**(*Sicyos*
angulatus)**

Growth habit:
summer annual

Other names:
burcucumber, star
cucumber

Origin:
Europe and Asia

**Control
classification:**
moderately difficult

Burcucumber has tendrils that aid the plant in climbing. The leaves are usually 5-lobed, occasionally 3-lobed and alternate along the stems. A noticeable feature of the plant is the sticky hairs that are present on the stems and leaves. The fruit of burcucumber is produced in clusters and covered with stiff spines. Each fruit produces a single seed. The plant is sensitive to frost and will die after the first fall frost. In Missouri, burcucumber is most often encountered in alluvial river bottom areas.



Burcucumber.

Dodder
(*Cuscuta* spp.)

Growth habit:
summer annual

Other names:
love vine, strangleweed

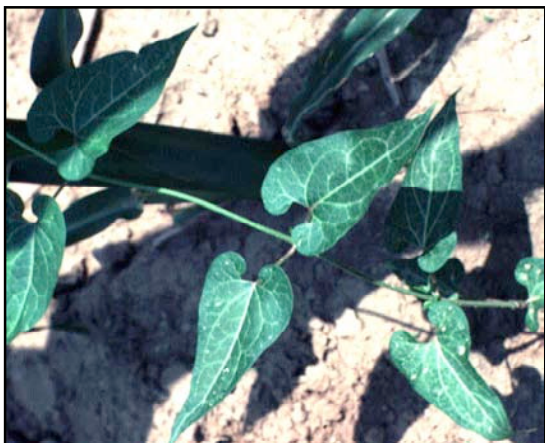
Origin:
native

**Control
classification:**
moderately easy

Dodder is a parasitic plant that lacks chlorophyll and therefore has a yellow-orange color. It has a spaghetti-like appearance, and its stems may be as thin as thread in some cases. There are at least 10 known species of dodder in Missouri. Because of the plant's parasitic nature, its seedling stems and roots can persist for only a short time if no suitable host is in close range for attachment. Once the stems attach to the host plant, a structure known as a haustorium penetrates the host plant. After the haustoria have begun extracting water and nutrients from the host plant, the dodder's stem breaks away from the soil surface and the dodder becomes totally reliant on the host. The plant will grow rapidly and soon have a dense mass appearance as it entwines around the host plants. Not all plant species are suitable hosts for dodder. In Missouri, the primary hosts of dodder are members of the aster and legume plant families. Occasionally, dodder can be a serious pest of leguminous forage crops such as alfalfa and clover. The tiny yellow-orange seed produced by dodder can persist in the soil for years.



Dodder.



Honeyvine milkweed.

Honeyvine milkweed has opposite, smooth leaves that are heart-shaped and lack serration. Although other milkweeds contain a milky latex sap, honeyvine milkweed does not. The weed's leaves can easily be confused with those of morningglories and bindweeds; however, morningglories and bindweeds have alternate leaves. Honeyvine milkweed cotyledons are oval-shaped, while those of morningglories are butterfly-shaped. Another distinguishing vegetative feature of honeyvine milkweed is its long petioles. Its flowers are produced in small, greenish white clusters. One of the plant's most obvious features is its fruit, an angle-shaped pod that may reach a length of 6 inches. When the fruit ripens and opens, it releases flattened seeds, which are wind-assisted with attached silky, white hairs. The plant may also regenerate vegetatively from its rhizome system. Honeyvine milkweed is common throughout most of Missouri and is problematic along fencerows and minimum-tillage cropping sites.

Honeyvine milkweed
(*Ampelamus albidus*)

Growth habit:
perennial

Other names:
angle-pod, blue vine, climbing milkweed, honey vine, sand vine.

Origin:
native

Control classification:
difficult



Japanese honeysuckle.

Japanese honeysuckle escaped from cultivation and has quickly become a pest of landscapes, thickets and rights-of-way. Its aggressive growth outcompetes native vegetation by vigorous above-ground runners and underground rhizomes. Planting of Japanese honeysuckle is not recommended in Missouri because of its ability to choke out shrubs and small trees. The leaves of the plant are opposite and ovate with entire margins. Its stems have a reddish brown coloration and are hairy. The flowers are fragrant and range in color from creamy white to yellow.

Although some species of honeysuckle in Missouri have bright red or orange berries, Japanese honeysuckle has black fruit that contains two or three seeds. Although the plant was originally most frequently encountered in southeast Missouri, it is now scattered throughout the state.

Japanese honeysuckle
(*Lonicera japonica*)

Growth habit:
perennial

Other names:
Chinese honeysuckle, woodbine

Origin:
Asia

Control classification:
moderately easy

Japanese hops
(*Humulus japonicus*)

Growth habit:
perennial

Other names:
none

Origin:
Eastern Asia

Control classification:
not known

Several obvious and annoying features of this aggressive, sprawling weed make it easy to recognize. The stems are armed with downward pointed prickles that make the plant cantankerous to handle, and the leaves cause dermatitis in sensitive individuals. Leaves of Japanese hops are distinctly 5-lobed, 2 to 4 inches in length and have petioles that are up to 8 inches long. The texture of the leaves is similar to sandpaper. Japanese hops have rather inconspicuous, green flowers, which lack petals and have a wadded-paper appearance.

Another vine weed that could possibly be confused with Japanese hops is burcucumber. Burcucumber also has mostly 5-lobed leaves; however, it has tendrils and Japanese hops do not. Burcucumber does have sticky-hairy stems but does not possess the downward pointing prickles that are characteristic of Japanese hops.



Japanese hops.

Japanese knotweed
(*Polygonum cuspidatum*)

Growth habit:
perennial

Other names:
Japanese bamboo,
Mexican bamboo

Origin:
Eastern Asia

Control classification:
difficult

Japanese knotweed is an escaped ornamental plant that can quickly form dense clumps in which no other vegetation can survive. The plant regenerates from rhizomes and reaches heights up to 6 feet, which gives it a shrublike appearance. Some refer to the weed as Japanese or Mexican bamboo because of its hollow and jointed stems. Like other members of the Polygonaceae (smartweed) family, papery sheathlike ocreas are found along its stems where the leaves join. Leaves occur alternately along the reddish stems and range in size from 3 to 6 inches in length; their shape is broadly ovate. Leaf veins have a distinct red color. Flowers are produced in clusters in the leaf axils and are a white color. After frost, the stems of the plant persist through the winter.



Ocrea.



Kudzu.

Kudzu is one of the most aggressive-growing vines in the world, with vegetative growth rates up to 12 inches per day under optimal conditions. In Missouri, kudzu was extensively planted for erosion control many years ago.

Kudzu is one of the state's noxious weeds because it destroys wildlife habitat. Kudzu regenerates each spring from vast root reserves. The leaves are trifoliate and occur alternately along the stem. Each leaflet is ovate in shape, hairy and may have several lobes. The terminal leaflet is on a stalk slightly longer than the stalks supporting the lateral leaflets. A unique feature of the plant is the copper-colored hairs found on the immature vines. As the plant matures, the hair is lost and the vines become woody. The flowers have a "squirrel-tail" appearance in racemes, or clusters, up to 8 inches long. They are reddish purple and have a grape-flavor aroma. Kudzu is sensitive to frost, and the vegetation dies back in the fall, but the stems persist through the winter. Missouri is in the northernmost limit of the plant's range.

Kudzu
(*Pueraria lobata*)

Growth habit:
perennial

Other names:
kudzu vine

Origin:
Eastern Asia

Control classification:
difficult



Ivyleaf (above) and entireleaf (below) morningglories.

There are at least five species of annual morningglories known to occur in Missouri, and three are considered regular pests. Bigroot is the only perennial.

The three annual morningglory species that cause economic loss are ivyleaf, pitted and entireleaf. The cotyledons of ivyleaf and entireleaf are butterfly-shaped and essentially identical. The cotyledons of pitted are cut more deeply, a 90-degree angle, and tips are pointed, not round. Leaves on all morningglories are alternate along the stems, but leafshape is variable. Pitted and entireleaf leaves are heart-shaped; however, the leaves of pitted come to a tapering point and often have a tinge of purple around their margins, whereas entireleaf leaves are more rounded and lack the purple color. Ivyleaf leaves are densely hairy and have the English-ivy shape. All morningglories have funnel-shaped flowers, but colors vary. Pitted has white flowers. Ivyleaf and entireleaf usually have pale blue flowers.

Annual morningglories
(*Ipomoea* spp.)

Growth habit:
summer annual

Other names:
blue morningglory,
small white morningglory,
morningglory

Origin:
native or tropical
America

Control classification:
moderately easy to
moderately difficult

Bigroot morningglory
(*Ipomoea pandurata*)

Growth habit:
perennial

Other names:
wild potato vine,
man-of-the-earth

Origin:
native

Control classification:
difficult

Bigroot morningglory is the only perennial species of morningglory that occurs in Missouri. It regenerates new growth from a large underground tuber. It is distinguished by its tubular, white flowers with red centers. Like the annual morningglories, its leaves are alternate and heart-shaped but are larger and more robust. Its stems, in the lower portions of the plant, can become woody with age. Seeds are flattened and are surrounded by a fringe of hairs that aid in their dispersal.



Bigroot morningglory.

Poison ivy
(*Toxicodendron radicans*)

Growth habit:
perennial

Other names:
poison creeper, poison
icky, three-leaved ivy

Origin:
native

Control classification:
moderately easy

Poison ivy has a reputation for dermatitis. When poison ivy grows as a vine, it attaches itself to objects using its aerial roots. It may also grow as a single plant and form thickets. It propagates by several means, including seed, extensive rootstocks and the stems that are capable of rooting where contacting the soil surface. For identification, the key feature is its leaves. The leaflets are always in a group of three, trifoliolates. The two lateral leaflets often develop a lobe along their margins, which gives them a “mitt” shape. The petioles that support the lateral leaflets are shorter than the petiole of the terminal leaflet. Poison ivy leaves lack hairs. Stems and leaf veins of young plants often have a reddish color. The flowers are inconspicuous, as they are greenish in color. Its berries are whitish gray and may persist along with the plant’s woody stems during winter months. Poison oak, a related species, is sometimes confused with poison ivy; however, it is not nearly as widespread. In Missouri, poison oak is only found in scattered southern counties. Some also confuse Virginia creeper with poison ivy; however, it has five leaflets rather than three.



Poison ivy.



Redvine.

Redvine is a perennial woody vine that regenerates new growth from woody rootstocks and climbs by its tendrils. In the seedling stage, its leaves have a heart-shaped appearance similar to those of morningglories. Mature leaves are alternate and ovate with wavy margins and pointed tips. Distinctly veined, each leaf has a folded appearance along its midrib. Its flowers are greenish white and occur in clusters. The distribution of redvine in Missouri is restricted to the southeastern section of the state.

Redvine

(*Brunnichia ovata*)

Growth habit:
perennial

Other names:
American buckwheat vine, ladies' eardrops

Origin:
native

Control classification:
difficult



Trumpet creeper.

Trumpet creeper has compound leaves consisting of seven to 11 leaflets, each of which has coarsely serrated margins. Like some other vines, trumpet creeper has aerial roots that assist it in climbing. The flowers are orange-red with the characteristic trumpet shape and are attractive to hummingbirds. Although it does produce seed, the plant regenerates primarily vegetatively from its rootstocks and stems that touch the soil surface. In Missouri, trumpet creeper is most commonly found in fencerows.

Trumpet creeper (*Campsis radicans*)

Growth habit:
perennial

Other names:
cow-itch vine, devil's shoelaces, hell vine, shoestrings, trumpet vine

Origin:
native

Control classification:
difficult

Virginia creeper
(*Parthenocissus quinquefolia*)

Growth habit:
perennial

Other names:
woodbine, five-leaved
ivy

Origin:
native

Control classification:
moderately difficult

Virginia creeper has been valued as an ornamental plant; however, it easily escapes cultivation and can become a pest. In Missouri, it is primarily found in fencerows; however, it is capable of growing over large trees. Virginia creeper has palmately compound leaves, mainly with five leaflets, and each with serrated margins. Tendrils assist the plant in climbing. It should not be confused with poison ivy, which has three leaflets and no tendrils.



Virginia creeper.

Wild buckwheat
(*Polygonum convolvulus*)

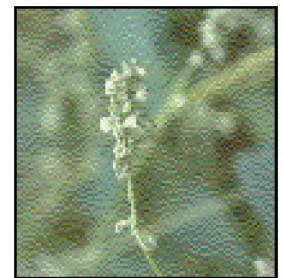
Growth habit:
summer annual

Other names:
black bindweed

Origin:
Europe

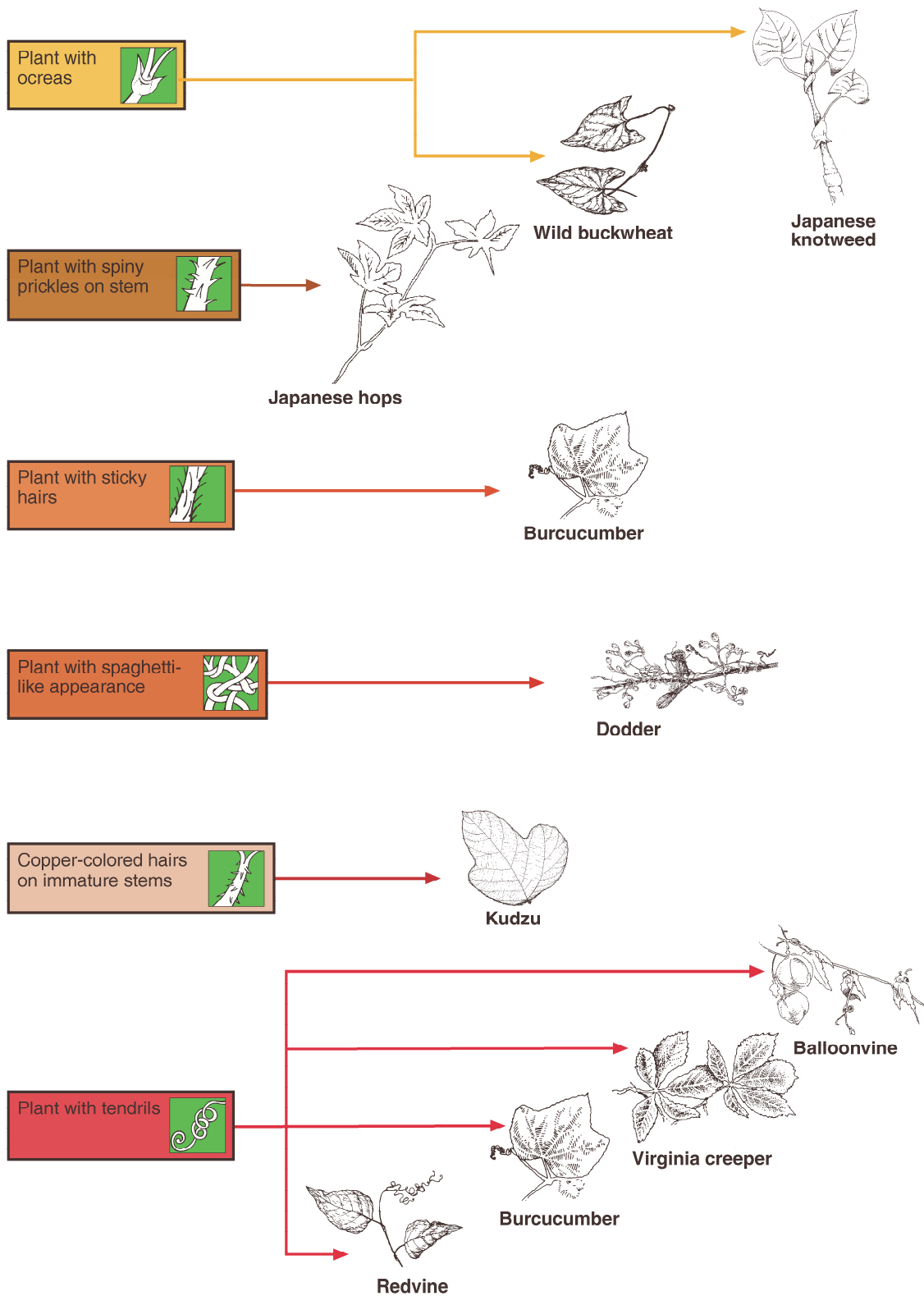
Control classification:
moderately easy

Wild buckwheat resembles morningglories in its heart-shaped, alternate leaves. A member of the Polygonaceae (smartweed) family, wild buckwheat has ocreas at the base of leaf petioles while morningglories do not. The plant may also be confused with bindweeds because of the basal lobes on the leaves. However, wild buckwheat's lobes point inward while those of bindweeds are directed outward. Wild buckwheat lacks hairs on its stems and leaves. Because of their greenish white color, flowers are not very noticeable. Scattered throughout Missouri, wild buckwheat is a weed of landscapes and agronomic crops.



Wild buckwheat.

TAXONOMIC KEY: STEM & VINE CHARACTERISTICS



TAXONOMIC KEY: NUMBER AND SHAPE OF LEAVES

Plant appears to lack leaves



Dodder

Plant with three leaflets or divided into three lobes



Poison ivy

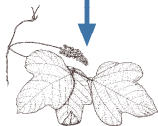


Kudzu



Balloonvine

Copper-colored hairs on immature stems

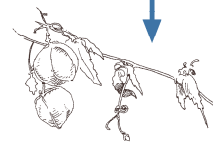


Kudzu

Leaves and stems lack hairs

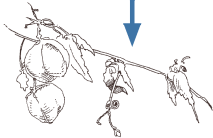


Poison ivy



Balloonvine

Plant with tendrils



Balloonvine

Plant lacks tendrils



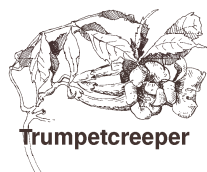
Poison ivy

Plant with five leaflets



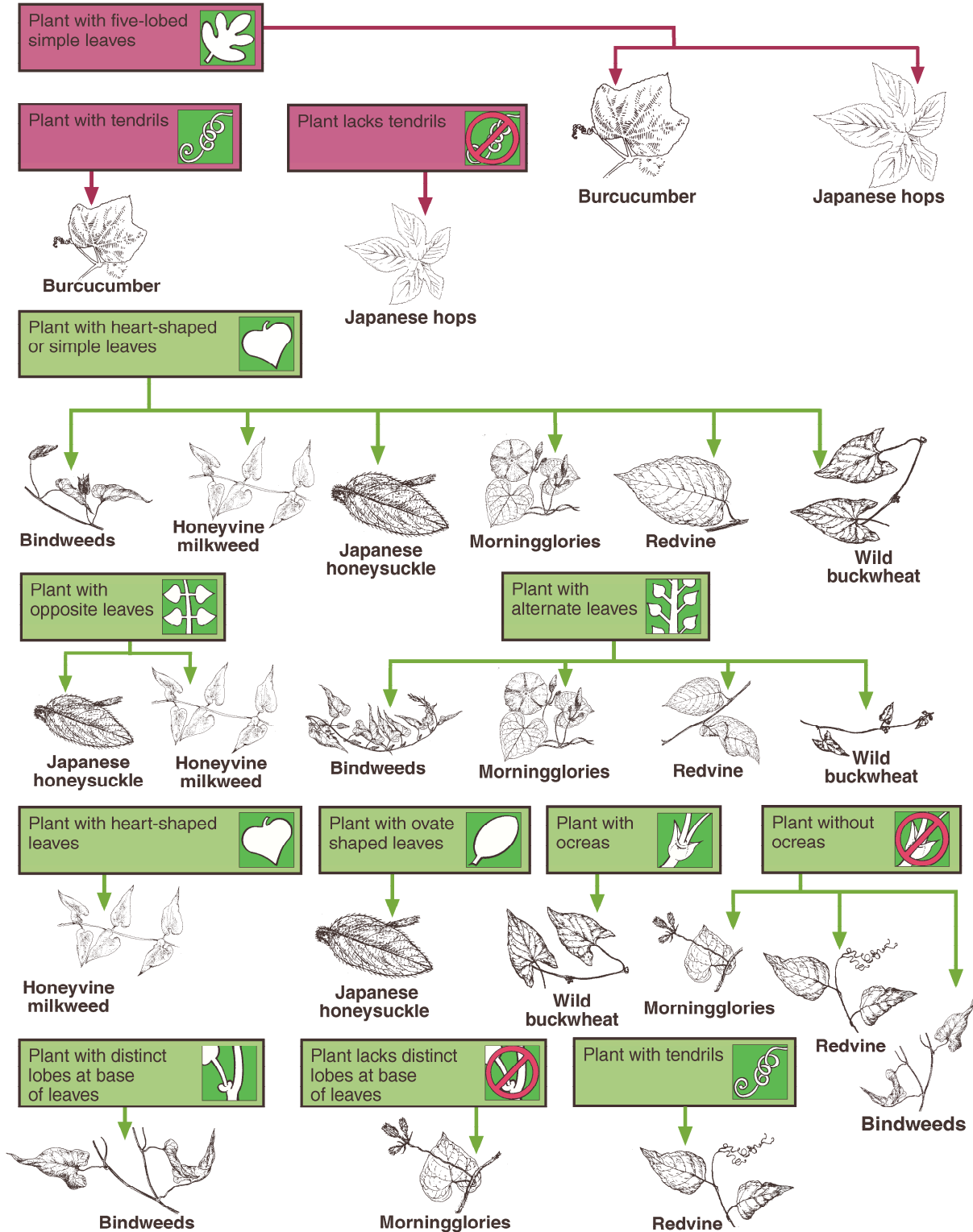
Virginia creeper

Plant with seven leaflets



Trumpet creeper

TAXONOMIC KEY: NUMBER AND SHAPE OF LEAVES





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