

## Thistles and Thistle-like Plants of Missouri

Fred Fishel, Department of Agronomy

Thistles and thistle-like plants have a negative reputation in Missouri. Most of these weedy plant species were introduced into the United States from Europe and gradually spread into Missouri and surrounding states. Their cantankerous physical appearance alone qualifies them for classification as weeds.

Some weeds are potentially more devastating to society than others and are recognized as such by noxious weed laws in Missouri and other states. In particular, **Canada**, **musk** and **Scotch** thistles, and common and cutleaf teasels are regulated in Missouri by law because of their potential for spread and harm to society and the environment. For more information on noxious weeds in Missouri, consult MU publication IPM1014, *Noxious Weeds of Missouri*.

Because some thistles and thistle-like species are not considered to be as serious threats to human and livestock activities, it is important to be able to distinguish them from the more harmful species. These plants tend to have very subtle characteristics that separate them from their close relatives or other plants that are similar

in physical appearance. Correct identification of thistles and thistle-like plants makes control recommendations more effective because herbicides, application rates and size restrictions can be properly matched.

Use the simple taxonomic keys on the back of this guide to identify a suspect plant using the following process:

1. Identify the general classification by finding the best description of the vegetative parts and flowers of the weed in Key 1 and Key 2.
2. Use Key 3 to identify a specific plant.
3. Consult the plant descriptions section for a short text description and photographs of the weed.

This guide is a general reference and does not contain all thistles and thistle-like plants that you may encounter in Missouri. If you need assistance in identifying a weed, submit a sample through your local University Outreach and Extension Center to the University Extension Diagnostic Clinic in Missouri.

### Plant descriptions

#### Bull thistle (*Cirsium vulgare*)

**Growth habit:** Biennial.

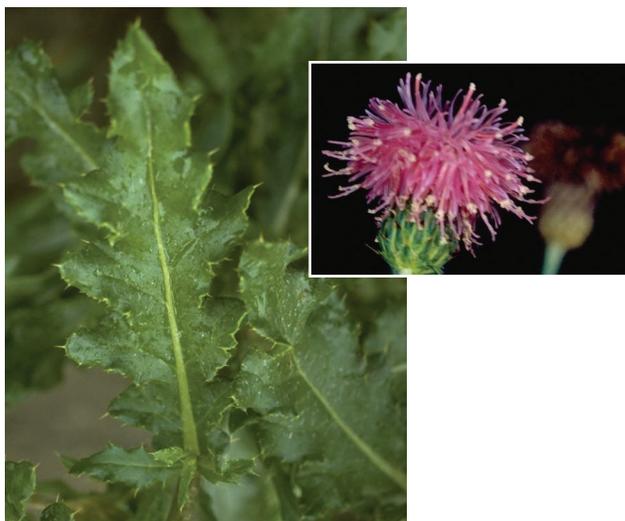
**Description:** The leaves of the bull thistle become elongated as the plant matures, and each lobe and leaf terminal is tipped with a long, stiff spine. Hairs may be found on both the upper and lower surfaces of the leaves. Leaves become progressively smaller in the terminal portion of the plant's second-year growth although the spines are longer compared with those on the lower leaves. Flowers are similar in size and color to those of **musk thistle**, but may be distinguished by the presence of cobweb-like hair and several spine-tipped bracts at the base of the flower head. Bull thistle is one of the most commonly occurring thistles in the state and is probably present in every county — primarily in pasture or roadside settings and occasionally in cropland.



## Canada thistle (*Cirsium arvense*)

**Growth habit:** Perennial.

**Description:** Canada thistle is the only commonly occurring thistle in Missouri that has a perennial growth habit. Besides producing seed, vegetative shoots arise from a creeping underground system of rhizomes often forming large colonies of plants. Leaves are wavy lobed, and, as the plant matures, the lobes become triangular-shaped. The upper surface of the leaf blade is smooth while the underside of the blade may or may not be hairy. Of the thistles common in Missouri, Canada thistle has the smallest flowers; they are produced in terminal clusters and are usually pinkish-purple in color (occasionally white). Canada thistle may be encountered in cropland, pastures and along roadsides. It is regulated by Missouri noxious weed laws.



Canada thistle

## Common (*Dipsacus fullonum*) and cutleaf teasel (*Dipsacus laciniatus*)

**Growth habit:** Biennial

**Description:** Plants develop a basal rosette that overwinters. The leaves are oval-shaped with toothed margins and have a wrinkled appearance. Unlike thistles, the leaf margins do not have spines. The following spring, the plant produces flowering stalks that are covered with short, stiff prickles. Flowers are egg-shaped and subtended with long spiny bracts. Common teasel has pale purple flowers while cutleaf teasel has white flowers. Plants may reach heights of six feet. Common and cutleaf teasel are most prominent along roadsides in Missouri. They are regulated by Missouri noxious weed laws.



Common teasel



Cutleaf teasel

## Musk thistle (*Carduus nutans*)

**Growth habit:** Biennial

**Description:** Musk thistle has also been called **nodding thistle** because of its large solitary flower heads that often bend over. Seedling plants have waxy, pale green leaves with shallowly lobed margins containing irregular prickles. During the second season of growth, leaves become deeply cut and their margins are tipped with stiff, sharp spines. Leaf tissue is glossy and the only hair on the foliage may be found on the main veins. The flower head has numerous spine-tipped bracts, is usually pink to purple in color (occasionally white) and grows up to 2 inches in diameter. In Missouri, musk thistle is most problematic in pastures and along roadsides. It is regulated by Missouri noxious weed laws.



Musk thistle

## Scotch thistle (*Onopordum acanthium*)

**Growth habit:** Biennial.

**Description:** Scotch thistle has very large, coarsely lobed leaves with spines. An identifying feature that makes it fairly easy to distinguish from other common thistles is the dense hairs on its foliage that give it a bluish or grayish cottony cast. It has also been called **cotton thistle**. The second-year stems develop large spiny wings formed where the leaf bases attach. The 1- to 2-inch flowers, which may be solitary or grouped in clusters of 2 to 5, are spine-tipped and usually reddish-purple in color. Of the thistles addressed in this guide, it is the least common in the state. It is regulated by Missouri noxious weed laws.



Scotch thistle

## Spiny sowthistle (*Sonchus asper*)

**Growth habit:** Summer annual.

**Description:** Spiny sowthistle has leaves that are variable in shape and that have extremely prickly margins. Lower leaves tend to be ovate in shape and variously lobed. Leaves are smaller and less divided in the middle and terminal portions of the plant. The base of the leaf blade is rounded and clasps around the stem at the point of attachment. Unlike thistles and teasels, all parts of the plant exude a white sap when cut, and the flowers are yellow. Another plant with a similar appearance that contains white sap and is common in the state is **wild lettuce**. It may be distinguished from spiny sowthistle by the long spines that occur along the underside of its midveins. Spiny sowthistle occurs in cultivated fields, pastures, waste areas, roadsides and other disturbed sites. It is one of three sowthistle species known to Missouri.



Spiny sowthistle



Wild lettuce

## Tall thistle (*Cirsium altissimum*)

**Growth habit:** Biennial

**Description:** Tall thistle has highly variable leaves that range from unlobed to variably lobed. The leaf margins have small spines that point toward the tips of the leaves. The upper surface of the leaves is dark green and lacks hair while the lower surface has dense hairs that give it a white, woolly appearance. Flowers are about an inch in diameter and pink to purple in color. A less common subspecies that has white flowers has been recorded in several southwest Missouri counties. Tall thistle is common throughout much of Missouri, except in the extreme southeast lowlands, and occurs along roadsides, ditch banks and other waste areas.



Tall thistle



# Taxonomic keys

## Key 1. Vegetative characteristics of thistles and thistle-like plants

Plant characteristics	Plant classifications
Leaf margins have prominent spines and plant parts lack white sap when cut.	Thistles
Leaves have wrinkled appearance with toothed margins and plant parts lack white sap when cut.	Teasels
Leaf margins are weakly prickly. Leaves and stems exude white sap when cut.	Sowthistle

## Key 2. Flower characteristics of thistles and thistle-like plants

Flower characteristics	Plant classifications
Flowers are 3/4 to 2 inches in diameter. Color may be red, purple, pink, lavender or white (rare).	Thistles
Flowers are up to 4 inches in length and egg-shaped. Color is white or lavender.	Teasels
Flowers are 3/4 to 1 inch in diameter. Color is yellow.	Sowthistle

## Key 3. Specific thistles and thistle-like plants

Vegetative characteristics	Flower characteristics	Thistle classification
Leaves smooth, dark green with light green midrib.	Color is pink to purple. Produced singly on nodding stalks. Up to 2 inches wide.	Musk thistle
Leaves covered with dense hair and grayish, cottony appearance.	Color is reddish-purple. Flower stems are broadly winged. Up to 2 inches wide.	Scotch thistle
Leaf margins crinkled and spiny, rhizomes underground.	Color is pinkish-purple (rarely white). Produced in clusters. Up to 3/4 inch wide.	Canada thistle
Leaves deeply cut, green on both upper and lower surfaces. Coarse hairs on lower surface.	Color is rose to reddish-purple. Heads surrounded by spiny-tipped bracts. Up to 2 inches wide.	Bull thistle
Similar to bull, but leaves are white and woolly on lower surface.	Color is reddish-purple. Heads produced singly. About 1 inch wide.	Tall thistle

