

## Identifying Noxious Weeds of Ohio

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# WHAT IS A NOXIOUS WEED



## Chapter 1

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### What is a Noxious Weed

# Noxious Weeds Introduction



**Noxious weeds are especially problematic weeds. They possess one or more of the following attributes:**

- Aggressive competition with cultivated plants
- Toxicity to livestock
- Natural habitat degradation
- Threat to public health, safety, or navigation

The Federal Noxious Weed Law (1974) controls the importation of weed species into the United States. Most states also have their own noxious weed laws. The goal of this Bulletin 866-98 is to aid in the identification of Ohio's noxious weeds.

Ohio has several laws governing weed control. For a brief guide to these laws, see page 23. According to Ohio regulations, county and township officials may regulate noxious weeds on private property and public roadways. Authorities may issue a written notice to eradicate noxious

weeds which are spreading or about to set seed. Upon receiving the notice, a resident has five days to comply or the weeds may be removed at the resident's expense.

If you are concerned that noxious weed species may be on your property, this Bulletin 866-98 may help you identify them. Your county Extension office also may help you make a positive identification of these weeds. Weed control options are not provided in this Bulletin 866-98 because they change with the crop or situation. A list of OSU Bulletin 866-98s with weed control recommendations is provided on page 23. Your Extension agent also can suggest the best way to eradicate a noxious weed problem.

Ohio's Noxious Weeds: <http://codes.ohio.gov/oac/901%3A5-37>

FOR CONTROL ALWAYS BE AWARE: treatment timing determines effectiveness of treatment!

### **Acknowledgements**

Thank you to the following people for sharing slides, photographs, and information for this publication:

Arlyn W. Evans, Memphis, TN

David Madison, The Ohio Department of Agriculture, Division of Plant Industry

Dr. Nathaniel Hartwig, The Pennsylvania State University

Dr. Mark Loux and Dr. Kent Harrison, The Ohio State University

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# OHIO'S NOXIOUS WEEDS



## Chapter 2

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### Ohio's Noxious Weeds

**Ohio currently has 21 noxious weeds:\***

- Apple of Peru.....Nicandra physalodes
- Canada thistle.....Cirsium arvense
- Cressleaf groundsel.....Senecio glabellus
- Giant hogweed.....Heracleum mantegazzianum
- Grapevines (abandoned).....Vitis spp.
- Japanese knotweed.....Polygonum cuspidatum
- Johnsongrass.....Sorghum halepense

- Kochia.....Bassia scoparia
- Kudzu.....Pueraria montana var. lobata
- Maretail.....Conyza Canadensis
- Mile-a-minute.....Polygonum perfoliatum
- Musk thistle (nodding thistle).....Carduus nutans
- Oxeye daisy.....Leucanthemum vulgare
- Palmer amaranth.....Amaranthus palmeri
- Poison hemlock.....Conium maculatum
- Purple loosestrife.....Lythrum salicaria
- Russian thistle.....Salsola iberica
- Shattercane.....Sorghum bicolor
- Wild carrot (Queen Annes Lace).....Daucus carota
- Wild mustard.....Brassica kaber var. pinnatifida
- Wild parsnip.....Pastinaca sativa

# Apple of Peru



*Nicandra physalodes*, apple of Peru

**Family:** Nightshade, Solanaceae.

**Habitat:** Habitats include areas adjacent to flower gardens, areas along roadside ditches, cropland, and fallow fields. This species is occasionally cultivated in flower gardens because of the moderately attractive flowers. It prefers disturbed areas.

**Life cycle:** Summer annual.

**Growth habit:** 2-5 ft tall.

**Leaves:** Alternate leaves are up to 8" long and 4" across (excluding the petioles). They are ovate-cordate and sparsely pubescent. Their margins are shallowly lobed, bluntly dentate, or undulate.

**Stem:** Five angled (pentagon) hollow stem, spreading branches.

**Flower:** Trumpet-shaped lavender flowers that may occasionally be white, 5 cm or more across, and are produced from July to September.

**Roots:** Fibrous root system.

**Similar Plants:** The foliage of the Apple of Peru, or Shoofly, plant resembles an oversized Ground Cherry, but its flowers are quite different.

**The Problem is.....**Apple of Peru germinates continuously (spring, summer, and fall) in



agricultural fields if moisture is available. It has low sensitivity to most commonly used herbicides. Poor control results in heavy infestations because it is a prolific seed producer. Large, persistent seed banks quickly accumulate in the soil due to seed dormancy. Very competitive with soybean and vegetable crops. Also confirmed alternative host for cucumber mosaic virus.



**Gallery 2.1 Apple-of-Peru, *Nicandra physalodes***



*Seedling*



*Young plant*



*5 angled hollow  
stem*



*Entire plant*





*Flower*



# Canada Thistle



*Cirsium arvense*, Canada thistle

**Family:** Composite, Asteraceae.

**Habitat:** Pastures, crops, landscape areas throughout Ohio.

**Life cycle:** Perennial with creeping roots.

**Growth Habit:** 1-3 feet high, erect, branched; forming large patches.

**Leaves:** 3-8 inches long, alternate with spiny, crinkled margins; lower leaves are lobed.

**Stems:** Grooved and becoming hairy with age; not spiny; branched at apex.

**Flower:** Lavender flower heads about 1 inch wide and long. Flowers are surrounded by bracts without spiny tips.

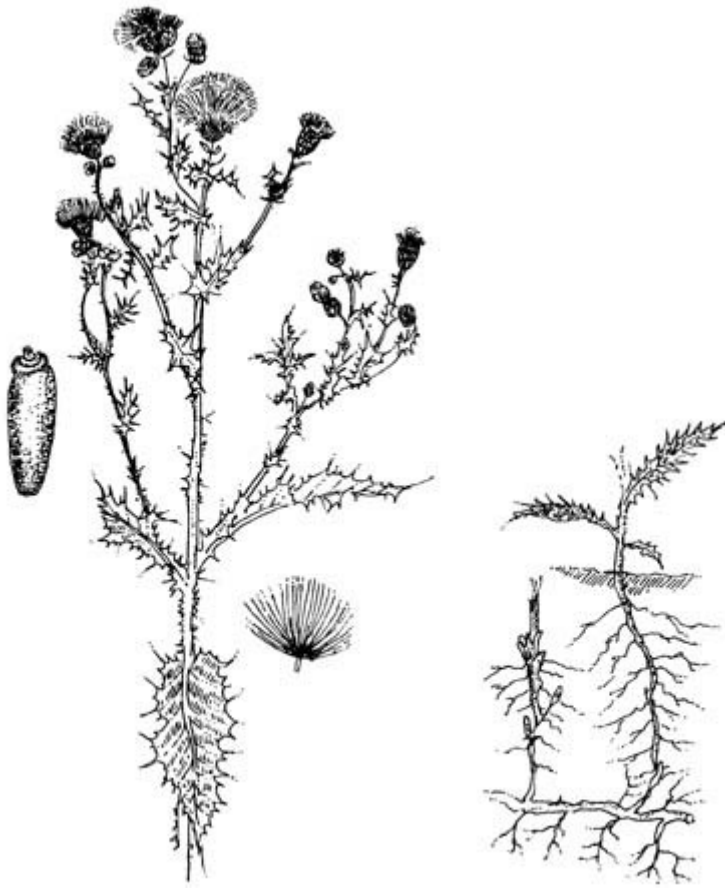
**Fruits:** Seeds borne in white feathery structures, similar to dandelion, spread by wind.

**Roots:** A creeping root system allows this weed to spread aggressively. Hand-pulling and cultivation are often ineffective control mechanisms because new plants sprout from root pieces that snap off.

**Similar plants:** Stems of Canada thistle are not spiny in contrast to bull thistle (*Cirsium vulgare*) and nodding thistle (*Carduus nutans*).

**The problem is....** An aggressive, spreading root system. Very competitive with field crops

and forages. Canada thistle is also prolific in seed production at 700 seeds per stem. Seeds are dispersed by wind and birds.



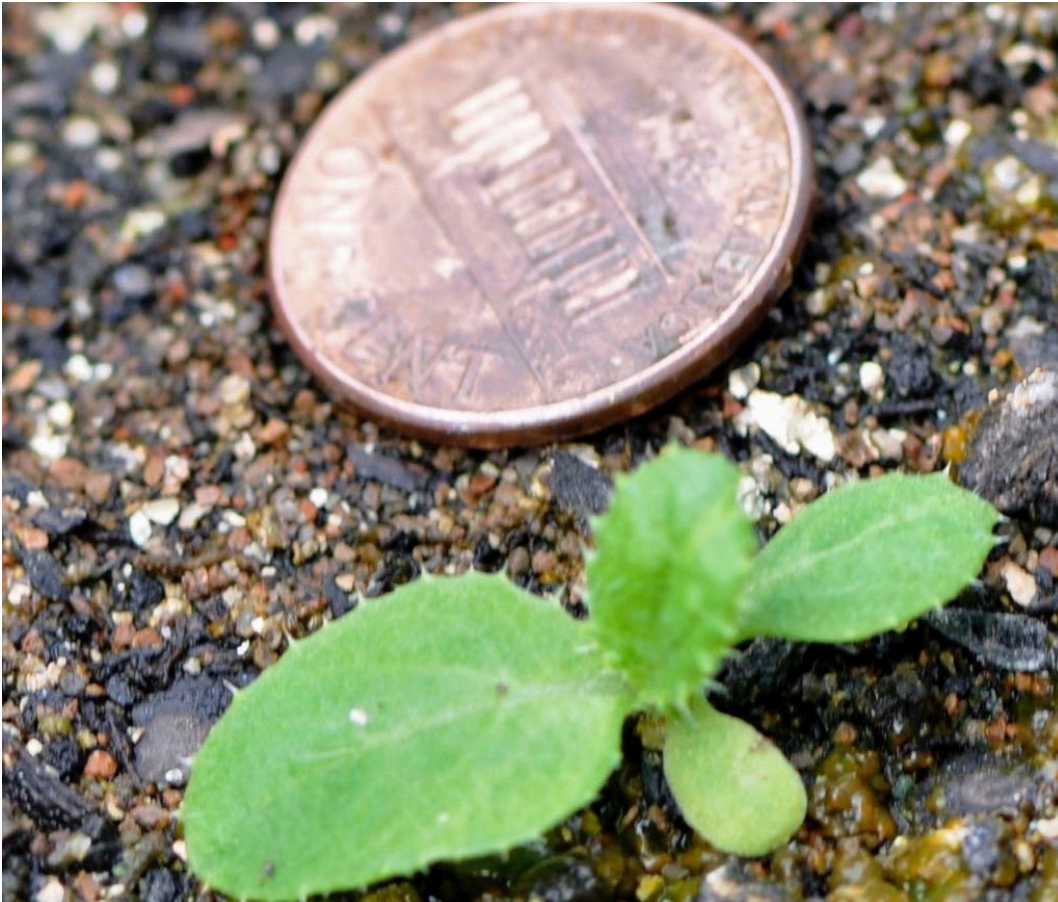
*Canada thistle in flower*





Canada thistle is a common weed in almost any situation.

### Gallery 3.1 Canada thistle, *Cirsium arvense*



Seedling





*Young plant*



*Flower*



# Cressleaf Groundsel



*Packera glabellus*, cressleaf groundsel

**Family:** Composite, Asteraceae.

**Habitat:** Wet woods, swamps, stream banks, pastures, roadsides and fields.

**Life cycle:** Winter annual.

**Growth Habit:** 1-3 feet tall, branched.

**Leaves:** Alternate, deeply divided with wide, round-toothed lobes; basal and lower leaves up to 8 inches long; upper leaves similar but smaller.

**Stems:** Succulent, smooth and hollow.

**Flower:** April – June. Clusters of bright yellow, daisy-like blooms, 0.5 – 1 inch in diameter. Each flower is enclosed by green bracts.

**Fruit:** White seeds borne in white feathery structures, similar to dandelion seeds, spread by wind.

**Roots:** Fibrous.

**Similar weeds:** Common groundsel (*Senecio vulgaris*) usually does not have a hollow stem and is shorter than Cressleaf groundsel. This weed also might be confused with members of the mustard

family, but Cressleaf groundsel is in the aster family. The small flower heads have 7-12 ray flowers; mustard flowers have four petals per flower.

**The problem is....** This weed is poisonous to grazing animals and spreads very quickly. The name groundsel is from the Anglo-Saxon word *grundeswelge* which means “ground swallower.”



*Cressleaf groundsel is taller than common groundsel and has a hollow stem. Photo courtesy of Arlyn W. Evans, Memphis, TN.*



**Gallery 4.1 Cressleaf groundsel, *Senecio glabellus***

*Seeds*



*Seedling*





*Entire plant*





*Flower*



*Infestation*



# Giant hogweed



*Heracleum mantegazzianum*, giant hogweed

**Family:** Parsley, Apiaceae.

**Habitat:** Rich, moist soils along roadside ditches, stream banks, waste ground, along tree lines and open wooded areas.

**Life cycle:** Biennial or herbaceous plant.

**Growth habit:** 8-15 ft tall

**Leaves:** Are lobed, deeply incised and up to 5 ft. across.

**Stem:** Hollow, ridged, 2-4 in. in diameter, 8-14 ft. tall, with purple blotches and coarse white hairs. The hairs are especially prominent that circle the stem at the base of the leaf stalks.

**Flower:** Numerous small white flowers in June – July, borne in a large flat topped, umbrella-like cluster up to 2 1/2 inches across.

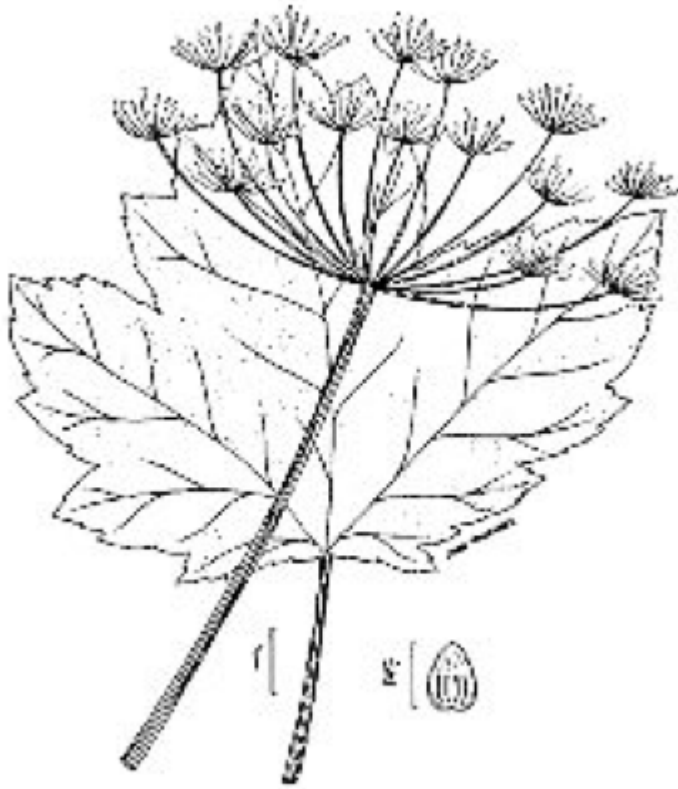
**Fruit:** (Containing the seed) is dry, flattened, oval, about 3/8 in. long and tan with brown lines.

**Roots:** Forked or branched taproot.

**Similar Plants:** Cow parsnip, Angelica, and Poison hemlock. Giant hogweed is much larger than Angelica and Poison Hemlock. It is similar sized as compared to Cow Parsnip, but Giant Hogweed has spots on the stem.



**The Problem is.....** This tall majestic plant is a public health hazard because of its potential to cause severe skin irritation in susceptible people. Plant sap produces painful, burning blisters within 24 to 48 hours after contact. Plant juices also can produce painless red blotches that later develop into purplish or brownish scars that may persist for several years. For an adverse reaction to occur, the skin, contaminated with plant juices, must be moist (perspiration) and then exposed to sunlight.



**Gallery 5.1 Giant hogweed, *Heracleum mantegazzianum***



*Seedling*



*Leaves*



*Entire plant*



# Grapevines



*Vitis* spp., grapevines

**Family:** Grapevine, Vitaceae.

**Habitat:** Woods, abandoned sites.

**Life cycle:** Woody perennial.

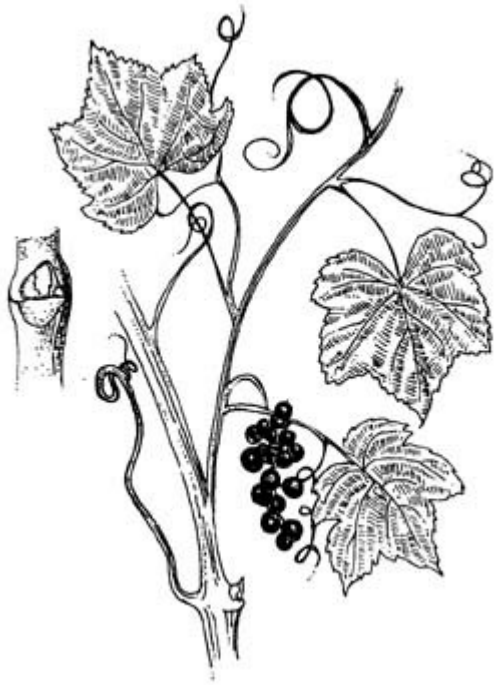
**Growth Habit:** Vining growth habit.

**Leaves:** Large, rounded, lobed leaves.

**Stem:** Green and smooth in young plants, but later becomes brown and woody, twisting with peeling bark. Look for woody or green tendrils which can coil around other vegetation.

**Fruit:** Small grapes in clusters. If the vine has been abandoned for some time, there will probably be no fruit.

**The problem is....** These stout vines can smother trees and forest vegetation. Grapevines are only considered a noxious weed if they are growing in groups of 100 or more and are not maintained for two consecutive years.



Grapevines are stout, woody vines.



Grapevines are smothering this young tree.

#### Gallery 6.1 Grapevines, *Vitis* spp.



*Seedling*





Leaves

# Japanese knotweed



*Polygonum cuspidatum*, Japanese knotweed

**Family:** Smartweed, Polygonaceae.

**Habitat:** The species occupies a wide variety of habitats in many soil types and a range of moisture conditions. It is most common along roadsides and on stream banks, but is also found in low-lying areas, utility rights-of-way, old home sites and along woodland edges and openings. The species requires a high light environment and grows poorly under full forest canopies. In Ohio this species is primarily found in the eastern part of the state.

**Life cycle:** Semi-woody perennial.

**Growth habit:** Semi-woody perennial that grows in large clumps reaching heights of 3-10 feet.

**Leaves:** Alternate and egg-shaped (4-6 inches long and 3-4 inches wide) narrowing to a point at the tip.

**Flower:** Tiny (1/8 inch) flowers are creamy white to greenish white and are borne in plume-like clusters in the upper leaf axils. The species is dioecious, producing male and female flowers on separate plants, however male plants are rare, flowers bloom in August – September.

**Root:** Fibrous, spreads primarily by its extensive rhizomes creating dense thickets.

**Stem:** Stout, hollow stems are reddish brown and the nodes are swollen giving them a bamboo-



like appearance. Typical of the smartweed family, nodes are enclosed by a modified leaf-life structure. Stems die back in the winter and new ones are produced each spring.

**Similar Plants:** Resembles bamboo because of the robust hollow stems with distinct nodes and internodes; however, true bamboo is a grass.

**The problem is...**Japanese knotweed grows quickly and aggressively by extensive rhizomes and forms dense thickets that exclude native vegetation and reduce wildlife habitat. This species represents a significant threat to riparian areas where it can spread easily as small pieces of rhizome are washed downstream and deposited to create new colonies. Transfer of soil containing rhizome or seed may also cause the establishment of new colonies. Establishment can be prevented with careful monitoring and eradication of small patches when they first develop.



**Gallery 7.1 Japanese knotweed, *Polygonum cuspidatum***



*Alternate,  
egg-shaped leaves*



*Red stem and  
swollen node*



*Infestation*



# Johnsongrass



*Sorghum halepense*, johnsongrass

**Family:** Grass, Poaceae.

**Habitat:** Rich soils, cultivated fields throughout Ohio.

**Life cycle:** Perennial, spreading by rhizomes and seed.

**Growth Habit:** 3-6 feet or more.

**Leaves:** 0.5 -1 inch wide, smooth blades with a prominent white midvein.

**Flower:** July – October. Can be up to 1 foot or more in length; panicles are loosely branched, purplish, and hairy. spikelets occur in pairs or threes.

**Roots:** Fibrous. Rhizomes are found close to the soil surface. They are stout with purple spots and scales at the nodes.

**Stem:** Smooth, pink to rusty red near the base.

**Similar plants:** Look for rhizomes to distinguish johnsongrass from shattercane (*Senecio bicolor*).

**The problem is....** Johnsongrass is very competitive with crops, spreading rapidly by rhizomes. It was initially introduced to the US as a forage crop, but its aggressive growing habit quickly made it undesirable. It is listed as a noxious weed in numerous states.



The rhizomes of johnsongrass help distinguish it from shattercane, and allow the plant to survive tillage.



Johnsongrass has established itself along the edges of this cultivated field.



Note the prominent white mid-veins on the leaves.

### **Gallery 8.1 Johnsongrass, *Sorghum halepense***





*Seedling*



*Young plant*



*Entire plant*



# Kochia



*Bassia scoparia*, kochia

**Family:** Goosefoot, Chenopodiaceae.

**Habitat:** Agronomic crop fields, pastures, and roadsides.

**Life cycle:** Summer annual.

**Growth habit:** Erect with much branching.

**Leaves:** Occur alternately along the stem. Leaves are linear to lanceolate in outline, ranging from 1 to 2 inches in length, and taper to a point. Leaves do not occur on petioles (sessile) and usually only have hairs along the leaf margins.

**Stem:** Erect, ranging from 1 to 4 feet in height. Stems are much branched and often have a reddish tint.

**Flower:** Occur in clusters at the ends of stems (terminal panicles) and also in the position between the leaf bases and stems (leaf axils). Flowers are relatively inconspicuous, green in color, and approximately 5 to 10 mm long. Flowers have distinctive hairy bracts beneath which tends to give the flowering stems a 'prickly' appearance.

**Roots:** A taproot and fibrous root system.

**Similar Plants:** Young kochia seedlings may be confused with common lambsquarters.

**The Problem is.....**Kochia is a highly adaptable plant that invades a wide variety of habitats. It provides a significant challenge to right-of-way maintenance professionals because of its ability to develop resistance to many herbicides. This plant has been reported to reduce crop yields in cereal grain by 100% in severe infestations. It is also an alternate host for beet yellows and tobacco mosaic virus.



**Gallery 9.1 Kochia, *Bassia scoparia***



*Seedling*





*Young plant*



*Entire plant*



# Kudzu



*Pueraria Montana var. lobata*, kudzu

**Family:** Legume, Fabaceae.

**Habitat:** Woodland edge, roadsides, rights-of-way, abandoned fields, fencerows.

**Life cycle:** Herbaceous to semi-woody perennial that dies back to ground each year in its northern range.

**Growth Habit:** An aggressive, high-climbing or sprawling vine that may grow 30m in a single season.

**Leaves:** Leaves are trifoliate, with the center leaflet poised on a longer stalk. Leaflets may be lobed or unlobed. Leaves are hairy beneath and along the margins, and are alternately arranged on the stem.

**Stems:** Young stems are densely hairy and gold in color.

**Flower:** Clusters of pink pea-like flowers with a grape aroma; produced occasionally in late summer in full sun. Fruit is a brown pod.

**Roots:** Deep, tuberous roots cluster from a large root crown. First year roots densely hairy.

**Similar plants:** May be confused with other rapidly growing vines such as mile-a-minute weed, wild grape, poison ivy, Virginia creeper. Of these, only poison ivy has a trifoliate leaf, but differs



from kudzu in that new leaves and stems are usually smooth and shiny and its woody perennial stems cling tightly to trees with air rootlets.

**The problem is.....**Kudzu is an extremely aggressive vine that smothers, girdles, and shades out desired vegetation. The weight of the vines can break limbs and power lines. Alternate host for soybean rust and Kudzu bug, also a pest of soybean. Very difficult to eliminate once established.

**Gallery 10.1 Kudzu, Pueraria Montana var. lobata**



*Seed pods*



Leaf



*Infestation*



# Marestail



*Conyza Canadensis*, marestail

**Family:** Composite, Asteraceae.

**Habitat:** Thin turf, agronomic crops, pastures, orchards, fallow fields, waste areas, and roadsides.

**Life cycle:** Summer or winter annual.

**Growth habit:** Seedlings develop a basal rosette and mature plants erect are reaching 6 1/2 ft in height.

**Leaves:** The mature plant has leaves that are entirely without petioles (sessile). Leaves are 4 inches long, 10 mm wide, alternate, linear, entire or more often toothed, crowded along the stem, and hairy. Leaves become progressively smaller up the stem.

**Stem:** Erect, solid, hairy, reaching 6 1/2 ft in height.

**Flower:** Many small inconspicuous flower heads occur at the top of the central stem. Individual flowers are 5 mm in diameter with white or slightly pink ray flowers and yellow disk flowers.

**Roots:** A short taproot with a secondary fibrous root system.

**Similar Plants:** In the rosette stage of growth, horseweed might resemble other weeds that have this rosette habit, such as Shepherd's-Purse or Virginia Pepperweed.

**The Problem is.....**Marestail, also called horseweed, has continuous germination, is highly



competitive, fast moving and wide spreading with wind dispersal. Many plants are also Glyphosate tolerant, and some populations have ALS and PPO-inhibitor resistance.

**Gallery 11.1 Marestalk, *Conzya canadensis***



Seedling



Young rosette



Entire plant







*Flower*



# Mile-a-minute



*Polygonum perfoliata*, mile-a-minute

**Family:** Smartweed, Polygonaceae.

**Habitat:** Nurseries, roadsides, wet meadows, wood borders, other sunny, moist areas. Not yet common in Ohio, but has spread rapidly through the northeastern states.

**Life cycle:** Annual.

**Growth Habit:** Persistent vine that can extend 20 feet.

**Leaves:** Unique, triangle-shaped leaves with saucer-shaped sheathes near the base of stems. 1-3 inch leaves are light green, turning reddish-brown in winter, and have sharp, curved prickles on the petioles and leaf veins.

**Stem:** Numerous sharp, backward-curving prickles.

**Flower:** White, inconspicuous, borne on short spikes.

**Fruit:** Pea-size, berrylike, fleshy, iridescent blue fruits.

**The problem is....** This troublesome annual can grow six inches per day, suffocating other vegetation in its path. Seeds spread easily through waterways or by birds and animals. The weed was introduced accidentally with nursery stock from Asia. Mile-a-minute is not yet common in Ohio, but can be found through northeastern states.



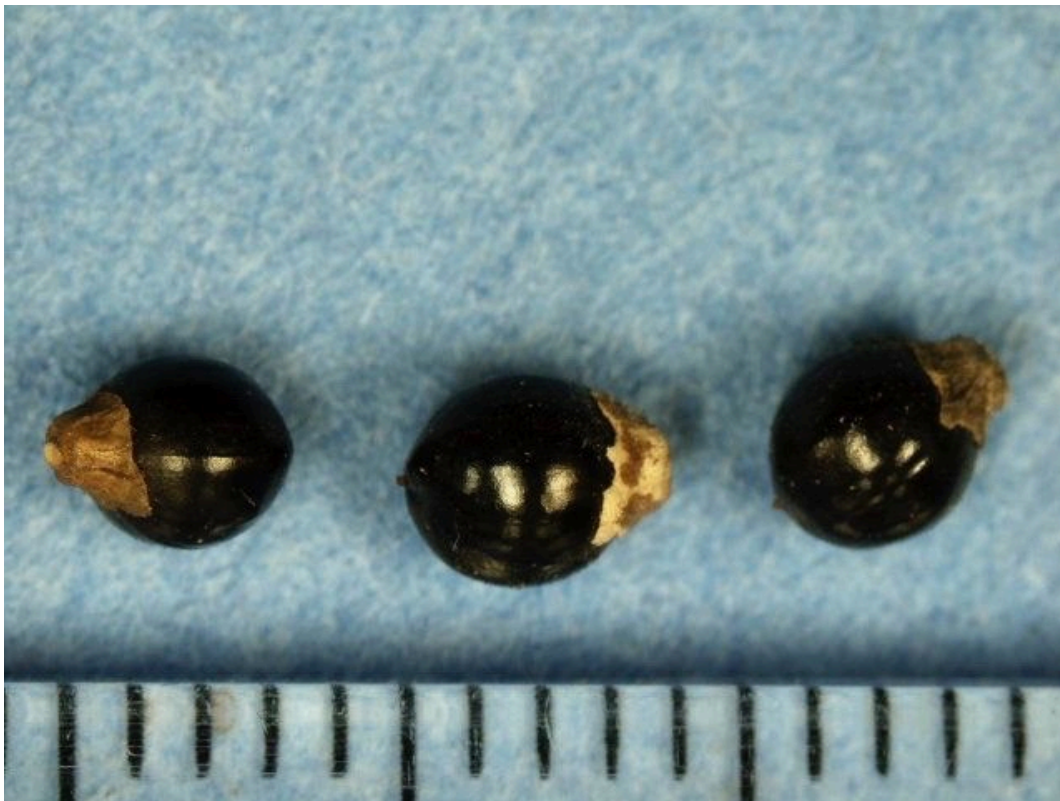


Birds and animals that eat these blue berries have spread mile-a-minute weed into new areas.



The unusual triangular leaves of mile-a-minute weed, combined with jagged prickles, make identification easy. Note the saucer-like sheathes near the base of petioles.

**Gallery 12.1 Mile-a-minute, *Polygonum perfoliatum***



Seeds



*Seedling*



*Saucer-shaped  
sheath near stem  
base*





*Entire plant*



# Musk thistle



*Carduus nutans*, musk thistle

**Family:** Composite, Asteraceae.

**Habitat:** Pastures, meadows, wasteland, and roadside ditches. Found sporadically throughout Ohio.

**Life cycle:** Biennial, forming a rosette the first year and producing flowers and seed in the second.

**First Year Growth Habit:** A basal rosette. Leaves are waxy and pale green with few hairs.

**Second Year Growth Habit:** Large, coarse, branched plant that can grow up to 9 feet.

**Leaves:** 3-6 inches long, alternate, spiny, deeply lobed, long and narrow.

**Stem:** Stems covered with dense, short hairs and spines.

**Flower:** June – October. Purple thistle-like flower heads, 1-2” wide borne singly on stems; spiny-tipped bracts surrounding flower head. Often the flower heads droop or nod, hence the other common name of Nodding thistle.

**Fruit:** Seeds borne in white or tan feathery structures, similar to dandelion, spread by wind.

**Similar plants:** In the first year of growth, musk thistle may resemble bull thistle (*Cirsium*

vulgare). However, the leaves of bull thistle are covered with hairs. Musk thistle is also referred to as nodding thistle.

**The problem is....**This prickly weed reduces the quality of grazing land. It has spread quickly throughout much of the Midwest, but is not yet common in Ohio. Avoid handling without gloves.



The spines that cover nearly every part of this plant make it truly worthy of the Identifying Noxious Weeds of Ohio “noxious.”





The flower of musk thistle is 1-2 inches in diameter.

**Gallery 13.1 Musk thistle**, *Carduus nutans*



*Seedlings*



*Young plants*





*Entire plant*



*Flower head*

# Oxeye daisy



*Leucanthemum vulgare*, oxeye daisy

**Family:** Composite, Asteraceae.

**Habitat:** Meadows, roadsides, old pastures, and areas low in fertility.

**Life cycle:** Perennial; spreads by rhizomes and seeds.

**Growth Habit:** Erect, 1-3 feet high.

**Leaves:** 1-3 inches long; alternate, dark green, simple, lobed – especially the larger basal leaves. Basal leaves have large petioles.

**Stem:** Smooth; may or may not be branched.

**Flower:** June – August. Typical daisy-like flowers with white outer petals and yellow centers which are depressed in the center. Flowers are 1-2 inches in diameter and solitary on the stem.

**Root:** Rapidly spreading root system.

**Similar plants:** Oxeye daisy may resemble some species of asters. However, asters typically have unlobed leaves. Fleabanes have similar flowers that are much smaller than oxeye daisy and occur in clusters.

**The problem is....**Oxeye daisy can establish itself quickly in uncultivated areas, and can readily replace forage grasses in pastures. Its early blooming habit and rapid seed maturation allow it to become established early in the season. Seeds may mature even if flower stalks are mowed or cut down. Oxeye daisy is often included in wildflower seed mixtures. Avoid these mixtures; this aggressive weed will quickly out-compete more desirable wildflower species.





Oxeye daisy was introduced from Europe. It has an attractive flower and is sometimes recommended for meadow plantings in other states.

**Gallery 14.1 Oxeye daisy, *Leucanthemum vulgare***



*Seedling*

Leaves





# Palmer amaranth



*Amaranthus palmeri*, palmer amaranth

**Family:** Pigweed, Amaranthaceae.

**Habitat:** Crop fields, pastures, and roadsides.

**Life cycle:** Summer annual.

**Growth habit:** Erect up to 6 ft. high.

**Leaves:** Prominent white veins on the undersurface unlike redroot pigweed, not pubescent, alternate, without hairs (glabrous), and lance or egg-shaped. Leaves are 2 to 8 inches long and 1/2 to 2 1/2 inches wide with prominent white veins on the undersurface. Leaves occur on relatively long petioles.

**Flower:** Small, green, inconspicuous flowers are produced in dense, compact, terminal panicles that are from 1/2 to 1 1/2 feet long. Smaller lateral flowers also occur between the stem and the leaf petioles (leaf axils). Male and female flowers occur on separate plants. Each terminal panicle contains many densely packed branched spikes that have bracts that are 3 to 6 mm long; can produce 500 thousand to 1 million seeds per plant.

**Roots:** Taproot that is often, but not always, reddish in color

**Stem:** One central stem occurs from which several lateral branches arise.

**Similar Plants:** Loosely resembles many other pigweed species. Palmer's petioles are as long or longer than the actual leaf. This plant is hairless and has elongated seed heads. Leaves are typically

more diamond shaped than other pigweed species, and occasionally has one hair at the tip of the leaf.

**The Problem is.....**Palmer amaranth is one of the most difficult weeds to control in agricultural crops. It developed a major glyphosate resistance problem in the southern US from 2006-2010, and has been spreading in the midwestern US since, causing crop loss and increases in weed management costs. Characteristics that make it a successful annual weed include: rapid growth rate; wide window of emergence (early May through late summer); prolific seed production (upwards of 200,00 seeds/plant); tendency to develop herbicide resistance; and tolerance to many post-emergence herbicides when more than 3 inches tall.

**Gallery 15.1 Palmer Amaranth, *Amaranthus palmeri***



*Seedling*



*Young plant*





*Seed head*

# Poison hemlock



*Conium maculatum*, poison hemlock

**Family:** Parsley, Apiaceae.

**Habitat:** Wet sites, gardens, roadsides, wastelands, pastures, and meadows.

**Life cycle:** Biennial, forming a rosette the first year and producing flowers and seed in the second.

**First Year Growth Habit:** Basal rosette of finely divided leaves with a pungent odor.

**Second-Year Growth Habit:** 2-7 feet tall, branched plant with flowers.

**Leaves:** Alternate, pinnately compound, finely divided, toothed, and glossy green.

**Stems:** Branched, waxy with purple blotches; hollow between nodes and grooved.

**Flower:** June – August (second year). Clusters of small white flowers with 5 petals in a loose, umbrella-like cluster, 2-7" across.

**Root:** Fleshy taproot.

**Similar plants:** During the first year, poison hemlock resembles wild carrot, but has a strong, pungent odor. Further, young leaves of wild carrot are more finely divided and its stem is hairy. At maturity, poison hemlock can be difficult to distinguish from water parsnip and water hemlock. Look for purple blotches on the stem to identify poison hemlock. Water hemlock (*Cicuta*

maculata), which is also highly poisonous, has a magenta-streaked stem and lanceolate leaflets with sharply-toothed edges. Water parsnip (*Sium suave*) is not poisonous and has toothed lanceolate leaflets.

**The problem is....**This plant is highly poisonous to both humans and animals. Poison hemlock is a large and impressive plant which has been planted as an ornamental in some areas. It grows quickly in fertile soils.



The stems of poison hemlock are typically covered with purplish blotches. The stems are also hollow between the nodes.





Poison hemlock, allegedly the plant used to poison the Greek philosopher Socrates, is a common sight along Ohio roadsides. All parts of this plant are highly toxic.

**Gallery 16.1 Poison hemlock, *Conium maculatum***



*Seedling*



*Leaves*



*Spotted stem*





*Entire plant*







# Purple loosestrife



*Lythrum salicaria*, purple loosestrife

**Family:** Loosestrife, Lythraceae.

**Habitat:** Wet meadows, flood plains, wetlands, ditches.

**Life cycle:** Perennial.

**Growth Habit:** Usually 2- 4 feet tall, but may reach up to 10 feet in nutrient-rich habitats.

**Leaves:** Opposite or whorled, 1.5-4 inches long with smooth margins, lacking petioles. Lower leaves have downy hairs and clasp the stem.

**Stem:** Stiff, 4-sided, woody at the base.

**Flower:** July to early September. Long spikes of rose or purple flowers, each with 4-7 wrinkled petals.

**Similar plants:** Flowers of native loosestrife are more widely spaced along the stem than those of purple loosestrife.

**The problem is....** Purple loosestrife is a strikingly beautiful plant that has escaped from cultivation. (It is an introduced species.) This plant invades wetland habitats, crowding out native plants that are important food sources for wildlife. A single stalk of purple loosestrife can produce 300,000 seeds. Purple loosestrife also spreads vegetatively. This species and its cultivated varieties are noxious weeds in Ohio. Related species are allowed to be sold in Ohio, but some states ban the entire genus.



Purple loosestrife crowds out native plants that provide food for wildlife.

**Gallery 17.1 Purple loosestrife, *Lythrum salicaria***





*Seedling*



*Entire plant*





*Flowers*



# Russian thistle



*Salsola iberica*, Russian thistle

**Family:** Goosefoot, Chenopodiaceae.

**Habitat:** Dry wastelands or spring-sown field crops during dry seasons. Not common in Ohio.

**Life cycle:** annual.

**Growth Habit:** 1-2 feet high, multi-branched.

**Leaves:** Under 1 inch long, sharp-pointed, awl-shaped, dull-green or grayish. Early leaves are soft and elongated, leaves formed later are short, stiff and prickly-pointed, often turning red. A unique and easy-to-identify weed.

**Stem:** Becomes stiff and woody with age. At maturity this plant breaks from its root and becomes a tumbleweed, scattering seed across open fields.

**Flower:** Small inconspicuous flowers with red or pink sepals located in the upper branches; note that the bottom left picture (Figure 25) is magnified.

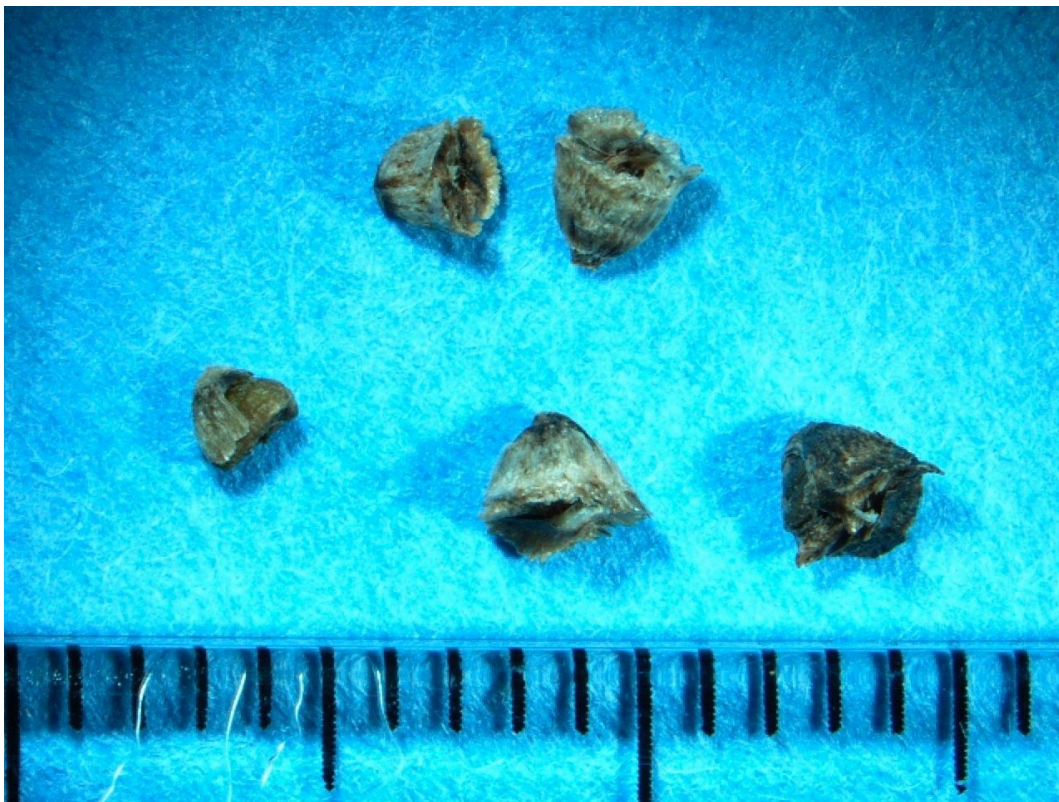
**The problem is....** Seeds are spread by windblown tumbleweeds. It frequents dry habitats and is found more commonly in the west central states.





Russian thistle, a pest of drier areas, has yet to become an established problem in Ohio. \*photos courtesy of Arlyn W. Evans, Memphis, TN.

**Gallery 18.1 Russian thistle**, *Salsola iberica*



*Seeds*





*Seedling*



*Young plant*



*Entire plant*



# Shattercane



*Sorghum bicolor*, shattercane

**Family:** Grass, Poaceae.

**Habitat:** Cultivated fields – especially cereal crops.

**Life cycle:** Annual.

**Growth Habit:** 4-8 feet tall; resembles corn, but smaller.

**Leaves:** 1-2.5 inch wide blades with white midveins.

**Flower:** July – October. Large panicles of rounded shiny black or red seeds that shatter easily.

**Stem:** Smooth.

**Root:** Fibrous root system; often forms brace roots as well.

**Similar plants:** Shattercane resembles forage sorghum and corn. It is also similar to johnsongrass (*Sorghum halepense*), but lacks rhizomes and has tighter panicles and wider leaf blades. Shattercane is an annual, while johnsongrass is a perennial.

**The problem is....** Aggressive, rapid growth. Competitive with crops.





Brace roots provide support for shattercane. This weed has a growth habit very similar to corn.



Shattercane seed heads shatter easily; seed can remain viable in the soil for 2-3 years.

**Gallery 19.1 Shattercane, *Sorghum bicolor***



*Seedlings*



*Young plants*





*Entire plant*

# Wild carrot



*Daucus carota*, wild carrot

**Family:** Parsley, Apiaceae.

**Habitat:** Dry fields, wastelands, pastures, and no-till field crops.

**Life cycle:** Biennial, forming a rosette the first year and producing flowers and seed in the second.

**First Year Growth Habit:** A basal rosette.

**Second Year Growth Habit:** 1-3 feet tall, branched and erect.

**Leaves:** Alternate, pinnately compound, finely divided and hairy.

**Flowering Stem:** Tall, hairy, stout, and branched.

**Flower:** June – October (second year). Small, lacy white 5-petaled flowers in flat-topped, umbrella shaped clusters with one dark reddish-brown flower in the center. Flower closes up and turns brown as it matures.

**Root:** Fleshy taproot.

**Similar plants:** Leaves have the appearance and odor of a garden carrot. Wild carrots taproot is not as large as the garden carrot. The plant also resembles poison hemlock (*Conium maculatum*). However, wild carrot has a hairy stem while poison hemlock has a smooth stem with purple blotches. The dark floret in the center of the inflorescence in second year and a distinctive carrot smell in the first year will also help distinguish this common weed.

**The problem is....** Prolific seed production and a large, fleshy taproot that is difficult to pull. Because the weed is attractive it has been allowed to spread in many areas.



The flower of wild carrot has a reddish-brown floret in the center, which can aid in its identification.





First-year leaves of wild carrot (left) and poison hemlock (right) may appear similar.

### Gallery 20.1 Wild carrot, *Daucus Carota*



*Seedling*



Young plant





*Leaf*



*Entire plant*





*Flower*

# Wild mustard



*Brassica kaber* var. *pinnatifida*, wild mustard

**Family:** Mustard, Brassicaceae.

**Habitat:** Wasteland, roadsides, grain and other fields crops, primarily in northern Ohio.

**Life cycle:** Annual annual or summer annual.

**Growth Habit:** 1-2 feet high, branched and erect.

**Leaves:** Alternate, 2-7 inches long. Lower leaves have petioles and are irregularly lobed and toothed with bristly hairs; upper leaves are smaller and may not be lobed; petioles lacking or short.

**Stem:** Branched near top, bristly.

**Flower:** June - October. 1/2 inch, bright yellow, four-petal flowers borne in small terminal clusters.

**Fruit:** Slender, slightly curved, smooth seedpod about 1 inch long; borne on upper branches.

**Similar plants:** The yellow rocket looks similar but has rounded lower leaves that are more heart shaped.

**Root:** Short taproot.

**The problem is....**Seeds live in the soil for many years. Very common in cultivated fields. Cultivation brings seeds to the surface where they germinate.







Wild mustards bright yellow flowers may be seen during most of the growing season in Ohio.

**Gallery 21.1 Wild mustard, *Brassica kaber***



*Seedling*





*Young plant*



*Entire plant*





*Flower*

# Wild parsnip



*Pastinaca sativa*, wild parsnip

**Family:** Parsley, Apiaceae.

**Habitat:** Wastelands, wet sites, roadsides and pastures, undisturbed ground.

**Life cycle:** Biennial, forming a rosette the first year and producing flowers and seed in the second.

**First Year Growth Habit:** Rosette of basal leaves. Large, three-lobed leaves resemble celery.

**Second Year Growth Habit:** 2-5 feet, branched, flowering plant.

**Leaves:** Alternate, pinnately compound with coarse saw-tooth edges; deeply lobed and not hairy. Up to 18 inches long.

**Stem:** Hairy and grooved.

**Flower:** May-August (second year). Many small flowers with five yellow or white petals borne in umbrella shaped terminals – gives rise to yellow seed clusters, 2-6 inches across.

**Root:** Fleshy taproot.

**Similar plants:** Second-year plant is somewhat similar to poison hemlock (*Conium maculatum*). The leaves of poison hemlock are usually more finely divided and its stems are hollow and purplish.

**The problem is....** Wild parsnip produces huge amounts of seed, allowing it to persist and spread.  
**NOTE:** Although wild parsnip has edible roots, it should be avoided because of the possibility

of confusion with poison hemlock. Additionally, the leaves of wild parsnip cause a painful and potentially serious rash on some people. Skin sensitivity is greatest at flowering time.



The leaves of wild parsnip are not as finely divided as poison hemlock, however, and its stem is ridged and green.





Wild parsnip in its first year of growth.



Usually wild parsnip has yellow umbels, as in this picture, but it may also have white flowers, resembling poison hemlock.

**Gallery 22.1 Wild parsnip**, *Pastinaca sativa*



*Seedling*



*Leaf*





*Young plant*





*Entire plant*

# ADDITIONAL WEED REGULATIONS IN OHIO



## Chapter 3

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### Additional Weed Regulations in Ohio



# Additional Weed Regulations in Ohio



*Rose multiflora*, multiflora rose

**Purple Loosestrife** *Lythrum salicaria*

Currently, this species and all of its cultivars are considered noxious weeds in Ohio. In Ohio, certain related species of *Lythrum salicaria* are allowed to be sold; whereas some states ban the entire genus. Contact the Ohio Department of Agriculture for details. All laws and regulations concerning noxious weeds are subject to change.

**Multiflora Rose** *Rose multiflora*

Multiflora rose may be used by licensed nurseries as rootstocks for other rose species. To use this plant for any other reason, a special permit is needed from the Ohio Department of Agriculture. Multiflora rose is a thorny and invasive woody plant. It is difficult to eliminate once established. Note: multiflora rose can be distinguished from other roses by the presence of fringe-like stipules at the leaf bases.

**Ohio Noxious Seed Law**

Ohio also has a noxious seed law, enforced by the Ohio Department of Agriculture. It prohibits certain weed seeds from being present in crop seed. Most of the prohibited species are troublesome perennials that spread quickly and weeds that have not yet been introduced to Ohio.



For a list of weeds prohibited in commercial seeds, contact the Ohio Department of Agriculture's Division of Plant Industry. Lists are available of weed seeds which are prohibited in crop seed (primary noxious weeds), and weed seeds which are not allowed to exceed 0.25% of a crop seed's weight (secondary noxious weeds). No crop seed may contain weed seed of any kind exceeding 2.5% by weight.

### **Extension Guides to Weed Control**

These guides are available from your county OSU Extension office. Many are also available online at Ohioline, Extension's website:



<http://ohioline.osu.edu>

Weed Control Guide for Ohio Field Crops, Bulletin 789

Corn, Soybean, Wheat and Alfalfa Field Guide, Bulletin 827

Ohio Agronomy Guide, Bulletin 472

Controlling Weeds in Nursery and Landscape Plantings, Bulletin 867

Control of Turfgrass Pests, Bulletin L 187

The Ohio Vegetable Production Guide, Bulletin 672

Midwest Small Fruit Pest Management Handbook, Bulletin 861

Ohio Christmas Tree Producers Manual, Bulletin 670

### **OSU Weed Management**

<https://u.osu.edu/osuweeds/>

### **Quick Guide to Weed Regulations in Ohio Law**

**ORC 907.10** – outlines the duties of the Director of Agriculture, one of which is to establish primary and secondary noxious weeds.

**ORC 731.51 – 731.53** – gives municipal corporations the authority to eliminate noxious weeds from properties.

**ORC 927.681** – regulates multiflora rose.

**ORC 927.682** – regulates purple loosestrife.

**ORC 4959.11** – gives managers of toll roads or railroads authority to destroy certain listed weeds and brush.

**ORC 5579.04 – 5579.08** – gives highway departments and township trustees authority to control noxious weeds.

**OAC 901:5-37-01** – lists prohibited noxious weeds.