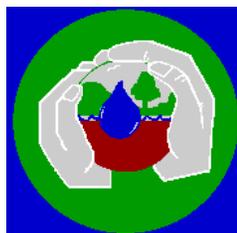


Chapter 6

A Brief Guide to Kentucky's Non-Native, Invasive Species, Common Weeds, and Other Unwanted Plants



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Chapter 6

A Brief Guide to Kentucky's Non-native, Invasive Species, Common Weeds and Other Unwanted Plants

What is an invasive exotic plant?

A plant is considered exotic, (alien, foreign, non-indigenous, non-native), when it has been introduced by humans to a location outside its native or natural range. Most invasive, exotic plants have escaped cultivation or have spread from its origin and have become a problem or a potential problem in natural biological communities.

For example, black locust, a tree that is native to the southern Appalachian region and portions of Indiana, Illinois, and Missouri, was planted throughout the U.S. for living fences, erosion control, and other uses for many years. Black locust is considered exotic outside its natural native range because it got to these places by human introduction rather than by natural dispersion. It has become invasive, displacing native species and adversely impacting ecosystems and several endangered native bird species that depend on other plants for food, as well as several endangered plant species.



Kudzu is an invasive exotic plant that has spread from Japan and China to become a large problem in much of the US. Local, state, and the federal governments spend millions of dollars per year to control the spread of kudzu. Even yearly control may not be enough to successfully remove kudzu. Seeds can remain dormant in the ground for 50 years or more.

The real issue is the impact that exotic plants have on native plant communities. Exotic plants have shown that they can alter ecosystem processes, displace native species, support populations of non-native animals, fungi, or microbes, hybridize with native species and alter gene pools. As a monetary issue, only fifteen species of nonagricultural weeds cost the US economy more than \$600 million annually. In some cases, just three exotic species—melaleuca, purple loosestrife, and witchweed—could cause losses of more than \$4.5 billion annually in crop damage to the US.

European settlers brought hundreds of plants to North America to their home lands for use as food, medicine, and for ornamental, sentimental, and other purposes. Introductions of exotic plants continue today and are increasing due to a large and ever-expanding human population, increased international and interstate travel, trade, and other factors. Most of us have introduced exotic plants to our garden or lawn. The common tulip bulb, native to European cultures, is an exotic plant in Kentucky, but has managed to not become invasive, due to weather, soil, and other geographic conditions. While many of us enjoy exotic plants in our yards and gardens, we must be sure that they do not become *invasive*.

Once an Exotic, Always an Exotic!

An estimated 3,500 species of exotic plants have escaped cultivation in the US and are able to reproduce in the wild, and have become established or 'naturalized'. These plants, however much a part of our current landscapes and ecosystems, are nonetheless exotic, since they were moved here by people. For centuries, horticulturists have imported and disseminated interesting exotic new plants. Unfortunately,

many of these have become invasive pests that are having serious impacts to native species and ecosystems. Exotic plant sales are still in practice today.

What Makes an Exotic Species Invasive?

Many non-native species exist in apparent harmony in environments where they were introduced. For example, a relatively small number of exotic plants, (some species of corn, wheat, rice, oats), form the basis of our agricultural industry and pose little to no known threat to our natural ecosystems. The most important aspect of an alien plant is how it responds to a new environment. An invasive species is one that displays rapid growth and spreads, establishes over large areas, and persists. Invasiveness is characterized by robust vegetative growth, high reproductive rate, abundant seed production, high seed germination rate, and longevity. Even some native plants can exhibit invasive tendencies in certain situations.

How Many Plants are Invasive?

According to the Plant Conservation Alliance' Alien Plant Working Group about 1,000 plant species have been reported as being invasive in natural areas in the U.S. This represents an astonishing one-third or so of the exotic plant species that are established and self-reproducing in the wild.

Some invasive species were planted intentionally for erosion control, livestock grazing, wildlife habitat enhancement, and ornamental purposes. Others have escaped from arboretums, botanical gardens, and our own backyards. Free from the complex array of natural controls present in their native lands, (including herbivores, parasites, and diseases), some exotic plants may experience rapid and unrestricted growth in new environments.



Queen Anne's Lace was introduced by European settlers in the 1600's. A form of wild carrot, it has a variety of medicinal uses.

Invasive species impact native plants, animals, and natural ecosystems by:

- ◆ Reducing biodiversity;
- ◆ Altering hydrologic conditions;
- ◆ Altering soil characteristics;
- ◆ Interfering with natural selection;
- ◆ Repelling or poisoning native insects;
- ◆ Competing for pollinators
- ◆ Displacing rare plant species;
- ◆ Increasing predation on native birds due to removal of natural habitat and food sources;
- ◆ Serving as reservoirs of plant pathogens;
- ◆ Displacing complex communities with single species monocultures; and
- ◆ Diluting the genetic composition of native plants through hybridization.

Plant Identification

Some of the plants listed here may require professional identification prior to treatment for control, in order to protect closely related native species. Contact your Cooperative Extension Council for help in identifying plants. In the Louisville/Metro area, you can contact the Jefferson County Cooperative Extension at 502-569-2344.

Remember: "Trash" Versus "Treasure"

"One man's trash is another man's treasure." In some cases, a plant that one person may consider to be an exotic plant or a weed, another person may see an herb valuable for medicinal purposes. Most of the exotic species have been rated with other factors in mind: nutritional values for wildlife, nutritional or other health uses for mankind, benefit as a landscaping plant, or other considerations. If you must use a plant that is listed as an exotic invasive, exercise extreme caution where it is planted, and watch to make sure it does not spread to invade more natural areas.

An example of an invasive exotic that is considered very valuable elsewhere is Hairy Jointgrass, (*Arthraxon hispidus*). This plant is considered to be highly invasive in Kentucky and in many of the surrounding states, but is listed as an endangered species in Australia and New Zealand. Many invasive plants were introduced purposefully to benefit the agricultural industry, the transportation industry, or to offer homeowner's hardy plants for landscaping, or to provide familiar foods for livestock and man. Other plants were brought to the US by accident, but the plants have managed to invade and destroy natural habitat, starve out existing native plants by competing for sunlight, water, and soil nutrients, and change native populations of wild birds and animals.

Some plants that are invasive are spread by wildlife. Many plants have a bad taste, an unpleasant odor, or are poisonous. Wildlife naturally selects the tastier plants to eat, further stressing the native population and allowing the invasive to spread. Some invasive species produces a chemical in the soil that keeps other plants from growing nearby. Others produce copious seeds that are easily spread, or are herbicide resistant.

As a homeowner, before you decide to landscape a lawn or plant a flower garden, make sure you limit the number of exotic invasive plants used in your design, and closely monitor exotic species to prevent infestation. Remove or kill invasive plants as quickly as they are identified, to prevent spreading, and use environmentally safe products.

In the agriculture industry, farming practices may enhance the ability of the species to proliferate. Extra caution must be used to prevent spreading of the invasive plants, and to maintain healthy, nutrient-rich soils. Contact your Cooperative Extension Agent for recommendations on non-chemical controls, and incorporate those practices wherever possible. A wide range of pre-emerging and post-emerging herbicides are available for use. However, some of these have a long hold-time in the ground, and it is easy to overuse these products. Contact your Cooperative Extension Agent for additional recommendations, and visit the EPA Website to determine if the chemical method of control you have selected is environmentally safe. EPA's Specific Chemical Fact Sheets are located at this web site: http://www.epa.gov/pesticides/factsheets/chemical_fs.

The Kentucky Exotic Pest Plant Council

The KY Exotic Pest Plant Council has categorized invasive exotic plants as severe, significant, or lesser threats. Plants listed in Table I have been listed within the severe categories. These plants have characteristics that allow them to easily invade native plant communities and displace vegetation. Plants in the significant category, Table II, have some invasive characteristics, but have less impact on native communities. They do, however, have the capacity to invade natural areas along disturbance corridors such as roads and spread into natural areas from disturbed sites. Scientific names have been given to facilitate identification for professionals, who may be contacted for control. Please refer to this list when selecting plants for landscaping, as many of them are available commercially. (See the Key for further explanation.)

Key to Type: T = Tree, S = Shrub, P = Flowering Plant, V = Vine, G = Grass

Table I Exotic Plants Listed as Severe Threats by the Kentucky Plant Council

Common Name, Scientific Name	T	Comments	Picture
Autumn Olive, Russian Olive <i>Elaeagnus umbellate, angustifolia</i>	S	Russian olive looks very similar to Autumn Olive, and is more invasive in the Midwest. Large deciduous shrub that can grow up to 20'. Leaves are alternately arranged and lance-shaped, which a smooth edge. Re-sprouts vigorously after cutting or burning. Young plants should be removed quickly. Glyphosate-based herbicide is recommended on cut stump for treatment in late summer. Use a 10-20% solution of glyphosate herbicide. ¹ Smaller patches may be removed by glyphosate-based herbicide on foliage also in the late summer, early fall.	
Bush Honeysuckles <i>Lonicera maackii, L. morrowi, L. tatarica</i>	S	Shrubs that range from 6' to 15' tall. 1"-2.5" leaves are egg-shaped and opposite from the stem. Older stems are often hollow, while native species do not have hollow stems. Flower color varies from white to pink or crimson. Fruit is red to orange, many-seeded berries. ² Identification is critical for treatment. Hand removal of seedlings or small plants may be possible. In shaded forest area, repeated clipping to ground may control. Seedlings may be controlled by cutting and application of glyphosate-based herbicide sprayed or sponged on foliage.	
Chinese Yam, Cinnamon Vine <i>Dioscorea oppositifolia</i>	V	Vines twine counterclockwise and are angled. Leaf shape is variable but is usually heart-shaped and oval. Leaf arrangement is usually opposite, but may be alternate. Reddish purple color at where the stem joins the leaf. Aerial tubers are usually present during summer months and resemble small potatoes. Often has a cinnamon fragrance. Manual or mechanical control possible with small populations. Herbicide application is most effective with repeated treatments. 30% Glyphosate usually prevents spread.	
Common Reed <i>Phragmites australis</i>	G	Very aggressive, upright perennial from 5'-13' in height. Long, narrow leaves alternate on tall stalks. Leaf blades are 1" wide, and are flat or rolled. Purplish, plume-like flower spikes are 6"-12" long, turn to gray and fluffy in late summer. Plant spreads through seeds and rhizomes, while knocked over stems will produce runners to spread plant. Stout rootstalks interlock to form a dense network that can withstand fires, mowing, and other forces. Herbicides are effective in the short term of 4 to 5 years. Use glyphosate specially formulated for wetlands, applied after plants have formed fluffy flower clusters. Combined cutting, in late summer, burning, herbicide application, and water management plans can help control the plants. Monitor because the plant has a high tendency to reinvade. Consult a licensed herbicide applicator before applying herbicides over large areas.	

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Common Name, Scientific Name	T	Comments	Picture
<p>Crown Vetch</p> <p><i>Coronilla varia</i></p>	V	<p>Low growing vine is commonly used throughout the U.S. for erosion control, roadside planting, and soil rehabilitation. Toxic to horses because of nitro glycosides. Creeping stem reaches 12"-20" in length. Compound leaves range from 2"-4" in length and have 9-25 leaflets. Leaflets are from 3/8"-3/4" in length with persistent stipules. 5-20 pea-like flowers are on a stalk that is from 2"-6" long. Flower color ranges from pink, rose, or lilac and appear from May to August. Accurate identification necessary. Hand pulling of mature plants can be effective when controlling small infestations. Mowing plants in the flower bud stage for 2 or 3 consecutive years may control further spread. Plants should be cut before seeds mature and as low to the ground as possible. Glyphosate has been shown to be effective, (1%-2% solution), during the vegetative stage prior to branching or flowering.</p>	
<p>Garlic Mustard</p> <p><i>Alliaria petiolata</i></p>	P	<p>Stalked, triangular to heart-shaped, coarsely toothed leaves close to the ground. Gives off an odor of garlic when crushed. Flowering plants reach heights of 2'-3.5' and produce button-like clusters of small white flowers, each with four petals in the shape of a cross. Seeds are produced in erect, slender pods beginning in May. Poses serious threat to butterflies. Seeds may remain viable in the soil for 5 years or more. Hand removal of plants is possible for light infestations; care must be taken to remove entire plant. Flowering stems can be cut at ground level to prevent seed reproduction. Glyphosate is also effective for large infestations.</p>	
<p>Japanese Stiltgrass</p> <p><i>Microstegium vimineum</i></p>	G	<p>Also called Nepalese Browntop. Annual grass with sprawling habit. 2'-3.5' in height, pale green, lance-shaped leaves, and a distinctive shiny midrib. Slender stalks of tiny flowers are produced in late summer. Well adapted to low light conditions. May have detrimental effect on several butterfly species. Glyphosate herbicide use is recommended, apply in late summer. May also be pulled by hand throughout growing season, providing that soil is moist and remains relatively undisturbed. In late summer, bag pulled plants and carry off-site. Hand pulling will be required for several seasons to deplete seed bank.</p>	

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Common Name, Scientific Name	T	Comments	Picture
<p>Japanese Honeysuckle</p> <p><i>Lonicera japonica</i></p>	V	<p>Perennial vine that climbs by twisting its stems around limbs, trunks of shrubs, fences, and small trees. Leaves are oblong to oval, may remain evergreen in warm areas. Flowers are tubular with five fused petals, white to pink, turning yellow with age, very fragrant, occurs in pairs along the stem at leaf junctures. Produces small black fruits for seeds. For small patches, repeated pulling of entire vines and root systems may be effective. Hand pull seedlings and young plants when soil is moist, hold low on the stem to remove entire plant with its roots. Cut and remove twining vines to prevent them from reaching the ground and reproducing from runners. Mow large patches and apply a 2% Glyphosate-based herbicide.</p>	
<p>Japanese Knotweed</p> <p><i>Polygonum cuspidatum</i></p>	S	<p>Upright, shrub-like perennial that can grow to over 10' in height. Stems are smooth, stout, and swollen at joints. Leaf size may vary, but are normally 6" long by 3-4" wide, broadly oval to somewhat triangular and pointed at the tip. Very small greenish-white flowers occur in branched sprays and are followed by small winged fruits. Small plants—dig to remove entire plant including all roots and runners. Juvenile plants can be hand pulled depending on soil condition and root development. Any portion of root system remaining will potentially re-sprout. Bag and remove from site. 2% Glyphosate solution to foliage in late summer, early fall.</p>	
<p>Johnson Grass</p> <p><i>Sorghum halepense</i></p>	G	<p>Tall, coarse, grass with stout rhizomes and white leaf vein. Leaves are smooth and 6"-20" long. Grows in dense clumps or nearly solid stands and can reach 8' in height. Stems are pink to rusty red near the base. Panicles are large, loosely branched, purplish and hairy. Spikelets occur in pairs or threes and each has a conspicuous awn. Seeds are reddish brown and nearly 1/8" long. Dense patches can be controlled by spraying the foliage with a 2% glyphosate solution during June. Apply herbicide while walking backwards to avoid walking through wet herbicide.</p>	
<p>Kudzu</p> <p><i>Pueraria lobata</i></p>	V	<p>Kudzu is a climbing, semi-woody, perennial vine in the pea family. Leaves are alternate and compound, with three broad leaflets. Leaflets may be entire or deeply 2-3 lobed with hairy margins. Individual flowers, about 1/2" long are purple, fragrant, and borne in long, hanging clusters. Flowering occurs in late summer and is followed by brown, hairy, flattened seed pods. Multiple treatments over 2-3 years are necessary. Cut vines just above ground level and destroy all cut material. Repeat as soon as re-growth is noticed. Late season cutting should be immediately followed by glyphosate to encourage transport to the root system.</p>	

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Common Name, Scientific Name	T	Comments	Picture
<p>KY 31 Tall Fescue <i>Festuca elatior</i></p>	G	<p>Tall Fescue is a deep rooted, cool season perennial grass. Does not produce short rhizomes, but has a bunch-type growth habit. Stems reach 3-4 feet high, and have broad, dark green basal leaves. Leaf blades are glossy on the underside and serrated on the margins. The panicle is 3-4" long with lance like spikelets ½" to 1" long. Flowers in spring and seeds mature in late summer. KY 31 is one of the oldest varieties. Carries fungus that infests other, more desirable grasses, and can be dangerous to livestock. Application of a 2% glyphosate-based herbicide is an effective means of control.</p>	
<p>Miscanthus <i>Miscanthus sinensis</i></p>	G	<p>Common names include Japanese or Chinese silvergrass, Pampas Grass. Showy flowers composed of many small individual flowers or spikelets. Extending from the spikelet is a needle-like awn, surrounding the spikelet are many hairs, beige, red, or pink in color. Hairs are about the same length of the spikelet. Forms a large clump. Many ornamental forms are grown in gardens and used for landscaping, and are not considered to be invasive, if properly maintained. Repeated applications of a 2% glyphosate solution, and continued application for re-growth.</p>	
<p>Multiflora Rose <i>Rosa multiflora</i></p>	S	<p>Thorny perennial shrub with arching stems, (canes), and leaves divided into five to eleven sharply toothed leaflets. The base of each leaf stalk bears a pair of fringed bracts. Beginning in May or June, clusters of showy, fragrant, white to pink flowers appear, each about an inch across. Small bright red fruits develop during the summer and remain on the plant all winter. Frequent, repeated cutting or mowing at the rate of three to six times per growing season for 2-4 years has been shown in achieving high mortality of multiflora rose. Cutting of individual plants is preferred to minimize habitat destruction. Application of a glyphosate-based herbicide to freshly cut stumps or to re-growth late in summer is the most effective control measure.</p>	
<p>Musk Thistle <i>Cardus nutans</i></p>	P	<p>Aggressive, biennial herb with showy, red-purple flowers and painful spiny stems and leaves. 1 ½' to 6' tall, with multi-branched stems. Leaves are dark green, coarsely lobed, with a smooth, waxy surface and a yellowish to white spine at the tip. Large, disk shaped flower heads containing hundreds of tiny individual flowers are 1 ½" to 3 ½" long and are at the tips of the stems. Plants can reach 4' in diameter. Foliar spraying is effective on established populations. Apply a 2% glyphosate solution plus a 0.5% surfactant wetting all leaves and stems. Use low pressure and a coarse spray, applied during rosette stage or prior to flowering.</p>	

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Common Name, Scientific Name	T	Comments	Picture
<p style="text-align: center;">Oriental Bittersweet</p> <p><i>Celastrus orbiculatus</i></p>	V, S	<p>Deciduous woody perennial climbing vine or trailing shrub. Leaves are alternate, glossy, round with finely toothed margins. There are separate fruiting, (female), and male plants. Female plants produce clusters of small greenish flowers in axillary clusters from most leaf axils. Fruits are 3-valved, yellow, globular capsules that split to reveal red-orange center. Apply glyphosate-based herbicide on freshly cut stems in temperatures above 60 degrees F, and no rain is expected for 1 day. Fall and winter applications will avoid or minimize impact on other plants. Subsequent foliar application may be necessary to control new seedlings. Cut vines should be removed from site.</p>	
<p style="text-align: center;">Poison Hemlock</p> <p><i>Conium maculatum</i></p>	P	<p>A member of the parsley family, growing from 3' - 8' tall. During the first year, poison hemlock forms a large rosette and usually remains in the vegetative state. The second year, it produces tall stems and flowers. Has a stout, extensively branched, erect stem with distinct ridges. Stems are hollow, except at the nodes, and the lower portions have purple spots. Leaves are large, up to 12" long and 4" round, while leaflets are shiny green, triangular, and highly dissected. Flowers are white and are arranged in an umbrella-like bunch. <u>All parts of the plant are extremely poisonous.</u> The lower portions of the plant are particularly deadly. Any cut, or pulled, parts of the plant must be bagged and removed from the site. Wear protective clothing. If you discover poison hemlock on your property, map and monitor areas of current populations and continually scout for new plants. You can use glyphosate in the early spring or late fall. May require repeated treatments to deplete the seed bank.</p>	
<p style="text-align: center;">Privet</p> <p><i>Ligustrum sinense, L. vulgare</i></p>	S	<p>Small, opposite, thickened leaves $\frac{1}{2}$" to $1\frac{1}{2}$" long. Branches are densely foliated; leaves are opposite and under mid-rib. Flowerettes occur on long stems with the tube shorter than the lobes. Berries are black when ripe and resemble small grape clusters. Trunk is usually forked near the base. Bark is smooth gray. Thoroughly wet all leaves with a 3% glyphosate solution. May cut large stems and immediately treat the stumps with a glyphosate herbicide as a 20% solution.</p>	

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Common Name, Scientific Name	T	Comments	Picture
<p>Purple Loosestrife</p> <p><i>Lythrum salicaria</i></p>	P	<p>Erect, perennial herb in the loosestrife family, with a square, woody stem and opposite or whorled leaves. Leaves are lance-shaped, stalkless, and heart-shaped or rounded at the base. Grow from 4' to 10' high and produce a showy display of magenta-colored flower spikes. Flowers have 5-7 petals. Mature plants can have from 30-50 stems arising from a single rootstalk. Small infestations of young purple loosestrife plants may be pulled by hand, preferably before seed set. Older plants require spot treatment of glyphosate-based herbicide, late in summer. However, it may be best to do a mid-summer treatment and a late-summer treatment in order to reduce seed production.</p>	
<p>Sericea Lespedeza</p> <p><i>Lespedeza cuneata</i></p>	G	<p>Also called Chinese Bush Clover. Shrubby deciduous perennial that grows 2' - 5' tall. Coarse stems are single or clustered with numerous branches. New growth each year comes from buds located on the stem bases about 1-3" below ground. Dense leaves. Leaves are club- or wedge-shaped $\frac{1}{2}$" - 1" long and $\frac{1}{16}$" - $\frac{1}{4}$" wide. Lower leaf surface has silky hairs. Flowers are yellowish-white with purple to pink markings. Best control is early detection, isolation of infected areas, and control of individual plants with glyphosate.. Mowing will reduce vigor of plants if cut close to the ground multiple times. Late growing season is best for mowing.</p>	
<p>Tree of Heaven</p> <p><i>Ailanthus altissima</i></p>	T	<p>Also known as Chinese Sumac, and Stinking Sumac, has large, compound leaves, 1'-4' long, with 11-25 smaller leaflets attached opposite each other. Flowers are clusters of small, yellow-green flowers near the end of the leaf branch. Seeds are produced on female trees in late summer to early fall, and may remain on the tree for long periods of time. All parts of the tree have a strong offensive odor. Large trees must be cut by professionals and the stump treated to prevent sucker or seedlings. Foliar applications are effective on small seedlings and trees, and a glyphosate-based herbicide is recommended.</p>	
<p>White Sweet Clover</p> <p><i>Melilotus alba</i></p>	P	<p>Very similar to yellow sweet clover. Second year plants grow 3'-5' high and are bush-like. Very fragrant. Leaves are alternate, divided into three finely toothed leaflets, middle leaflet grows on a short stalk. Flowers are crowded densely at top. Seeds stay viable in the soil for up to 30 years. Strong tap root. Hand pulling is effective on small infestations when soil is moist. May cut before flowers emerge. Spot treat with glyphosate-based herbicide before native plants emerge.</p>	

Table I Exotic Plants Listed as Severe Threats by the Kentucky Plant Council

Common Name, Scientific Name	T	Comments	Picture
Winged Euonymus <i>Euonymus alatus</i>	S	Also called "Burning Bush". Slow-growing, but can reach 4 ½'-6 ½' in height and width. Bright red fall foliage. Bark is gray with prominent corky wings running along sides. Leaves are opposite, elliptic, and have fine, sharp serrations on the margin. Caution when used in Urban environments. Seedlings up to 2' tall may be easily pulled if soil is moist. Larger plants and root systems can be dug out. Larger shrub can be cut and trunk treated with glyphosate immediately after cutting. Foliar spray with glyphosate solution is possible for large infestations, during early summer months.	
Winter Creeper <i>Euonymus fortunei</i>	V	Invasive, evergreen, woody vine. Plant can be a small shrub, growing in mats along the forest floor to 3' height, or can be a vine climbing trees to heights of 40'-70'. Flowers are small, yellow-green, and 5 petaled. Pull entire plant, including roots, leaves, and runners. Any remaining rootlets will probably lead to reinfestation. Bag and dispose of plants off-site. 4% glyphosate solution sprayed on leaves—wet thoroughly to run-off in early spring. You may injure leaves for improved herbicide intake.	
Yellow Sweet Clover <i>Melilotus officinalis</i>	P	Closely resembles White Sweet Clover, but has yellow flowers. See White Sweet Clover for description and control.	

Key to Type: T = Tree, S = Shrub, P = Flowering Plant, V = Vine, G = Grass, F = Fern

¹ Glyphosate is recommended for use by the US EPA because it quickly degrades into relatively harmless substances, usually within 10 days. Other pesticides may be used, but should be checked for hold time in the ground. EPA's Specific Chemical Fact Sheets are located at this web site: http://www.epa.gov/pesticides/factsheets/chemical_fs. Glyphosate products are sold under a variety of brand names. Read the label carefully to determine the percentage of glyphosate in solution, and follow all recommendations for its mixture and use. Exercise caution when using any pesticide, (insecticide, herbicide, fungicide, etc.) product.

² Proper identification is necessary to determine if plant is natural or exotic invasive.

³ Louisville Water Company does not advocate or endorse the use of any brand name product.

Other Invasive Exotic Plants

The Kentucky Exotic Pest Plant Council has also developed a list of invasive exotic plants that represent a significant threat to the State. A listing may be found in Table II. These plants have some invasive characteristics, but have less impact on native communities. They do, however, have the capacity to invade natural areas along disturbance corridors such as roads and spread into natural areas from disturbed sites. Several grass species have become "naturalized", such as Kentucky Bluegrass. While providing a beautiful turf grass, it has displaced many of the grass species that are native to the state.

Some of the plants listed as a severe or significant threat are used by many herbalists for medicinal purposes, or are planted as ornamentals. If you wish to use these plants in your yard, monitor them carefully, to make sure they do not invade the surrounding area. For example, mint is a plant that is used

in many medicines, to flavor iced tea, cocktails, etc. Yet, it is a highly invasive plant that can overrun other garden plants and lawns. It is a useful plant to grow in pots, but care must be taken that none of the mint stems or leaves touch the ground, or can enter the ground, as it propagates easily from the joints of the plant and from underground runners. Use and monitor the plant carefully to prevent spread.

Key to Type: T = Tree, S = Shrub, P = Flowering Plant, V = Vine, G = Grass, F = Fern

Table II Exotic Plants Listed as Significant Threats by the Kentucky Plant Council			
Common Name, Scientific Name	T	Comments	Picture
Akebia <i>Akebia quinata</i>	V	Also known as chocolate vine, a wood perennial plant that grows either as a twining vine or a ground cover. Leaves are dull blue-green and alternate along the stem. Each leaf is divided into five stalked leaflets that meet at a central juncture. Flowers are reddish to purple-brown, about 1" across, flowers in spring. Vines can grow 20-40' in a season. Repeated treatments of a glyphosate based herbicide. .	
Bicolor lespedeza <i>Lespedeza bicolor</i>	S	Branched, perennial shrub 3-10' in height with three leaflet leaves, many small purple to white pea flowers and single seeded pods. Flowers from June to September. Spread encouraged by burning. Still used as quail food plots. Thoroughly wet all leaves with a 2% glyphosate herbicide. Mowing 1-3 months before herbicide application can assist control.	
Chickweed <i>Stellaria media</i>	P	Commonly seen in gardens, lawns, and cool, shady places. Has shallow, fibrous, fragile roots with weak stems that trail along the ground for up to 16". Stems branch frequently and plant takes root at the leaf junctions. Continuously blooms and seeds-- up to 15,000 seeds per plant. Pull the plants out of the ground until the soil beneath it is exposed. You may notice a white film-like substance beneath the plants, which is what suffocated the grass or other vegetation. If present, the soil may be aerated, fertilized, (read the directions carefully and do not over-feed), and water the yard. Grass will fill in.	
Chinese Empress Tree <i>Paulownia tomentosa</i>	T	Also called Princess Tree. Small to medium sized tree that may reach 30-60' in height. Bark is rough, gray-brown and interlaced with shiny, smooth areas. Stems are olive brown to dark brown, flatted where stems and branches meet. Leaves are large, broadly oval and heart-shaped, arranged in pairs along stem. Showy, pale violet flowers open in spring. Hand pulling may be effective for young seedlings. Trees can be cut at ground level, prior to flowering time to prevent spread of seed. Apply a 2% glyphosate solution to freshly cut stumps. Solution may also be used on seedlings, but protect other plants nearby.	

Table II Exotic Plants Listed as Significant Threats by the Kentucky Plant Council

Common Name, Scientific Name	T	Comments	Picture
<p>Common Burdock</p> <p><i>Arctium minus</i></p>	P	<p>A short-lived perennial that grows for 2 or more years. The non-flowering life stage is called a rosette. Leaves are ovate to heart-shaped, large and hairy. Has a tap root up to 3' long. Flower heads are 1" across and appear on short-stalked clusters along stems. Mature flower heads form prickly burs that readily stick to clothing or animal fur. May also trap birds and small rodents. Similar to cocklebur, but rounder. Control efforts must be monitored for several years to make sure the remaining seeds to not repopulate, as they may remain in soil 10-12 years. When cut down or uprooted, any root fragment may become a new plant. Carefully apply a 20% glyphosate solution, wetting all the leaves, but not to dripping.</p>	
<p>Common Teasel</p> <p><i>Dipsacus sylvestris</i></p>	P	<p>Erect biennial with small prickles on the stem and distinctive spiny flower heads. May reach 6½' in height. Leaves are oval to round, and have rounded or 'scalloped' teeth, with an overall wrinkled appearance. Plants initially produce a basal rosette of leaves, while flowering stems are produced during the second year. In small areas, rosettes can be dug up, using a dandelion digger. Cutting may take several years for control. 2% - 12% solution of glyphosate may be applied to young rosettes, or after cutting on older plants.</p>	 <p>Rosettes remain green long into fall, making it an easy target for the glyphosate application.</p>
<p>English Ivy</p> <p><i>Hedera helix</i></p>	V	<p>Evergreen climbing vine that attaches to surfaces by way of small rootlike structures which exude a sticky substance. 3-5 lobed leaf, dark green with white veins, arranged alternately along stem. Older vines may have stems that are 1' in diameter. Under sufficient light conditions, small, pale, yellow-green flowers are produced in the fall. A combination of mechanical and chemical means is most effective in control. Ground cover vines may be pulled by hand, and bagged for off-site removal. For climbing vines, cut the vine near the ground. Use a screwdriver to pry roots from supports Pull rooted portions from ground and treat soil with glyphosate.</p>	
<p>Goosegrass</p> <p><i>Elyusine indica</i></p>	G	<p>Also called Wiregrass. Seed awns are splayed, like a goose' foot. Whitish silvery mat, forming a pale green clump with flattened stems in a low rosette. Produces seed even when closely mowed. May use physical removal of the plant, removing as many of the roots as possible. Chemical controls include the use of glyphosate on the plant, or on the area where roots were removed.</p>	

Table II Exotic Plants Listed as Significant Threats by the Kentucky Plant Council			
Common Name, Scientific Name	T	Comments	Picture
<p>Green Foxtail</p> <p><i>Setaria viridis</i></p>	G	<p>Annual grass that forms clumps up to 3' in height. Rough leaves are rolled into a bud and have hairs on the lower margins. Seedhead is fox-tail like and pale green. Seeds are green and about 1/16" long. Emerges in the early spring following periods of high rainfall. Grows in clumps or tufts. Can produce over 34,000 seeds per plant. Leaves alternate along stem. May use physical removal of the plant, removing as many of the roots as possible. Chemical controls include the use of glyphosate on the plant, or on the area where roots were removed.</p>	
<p>Ground Ivy</p> <p><i>Glechoma hederacea</i></p>	V	<p>Perennial with creeping stems that root at the nodes and foliage that emits a mint-like odor when mowed. Leaves are opposite, nearly round in outline or sometimes kidney shaped. Margins have rounded teeth and leaf veins arise from the same point in the leaf. Stems are square, trailing, rooting at the nodes. Difficult to hand pull. Best time to apply glyphosate when flowers are just beginning to bloom, towards the end of April. It may be necessary to treat the infested area twice before it is completely killed.</p>	
<p>Hairy Jointgrass</p> <p><i>Arthraxon hispidus</i></p>	G	<p>Creeping grass with branching, erect to semi-erect purplish stems. Leaf blades are 3/4" - 2 1/2" long, broad at the base and tapering abruptly to a sharp point. Long white hairs project around edge of the leaf. Seed heads are above the head in a long, fine stalk. Often occurs with Japanese stilt grass. Hand pull or mow before seed production. Use a glyphosate approved for wetlands. Repeat treatments may be necessary to reduce densities.</p>	
<p>Ivy-leaved Morning Glory</p> <p><i>Ipomoea hederacea</i></p>	V	<p>Annual vine that grows up to 6', branching occasionally. Round stems are light green to dull red, and are covered with white hair. Twine about surrounding vegetation or sprawl horizontally. Alternate leaves are up to 4" long and across, many deeply lobed. Flowering stalks develop from the axils of the leaves and are short 1/4" or less-- can be various shades of blue to purplish-pink. Difficult to control as seeds may germinate from 8" depth. Few methods of controls listed, but repeated treatments of glyphosate-based herbicides should remove the plant. Repeated treatments may be necessary.</p>	 <p>Comparison of Ivy-leaved Morning Glory leaves on the same plant.</p>
<p>Japanese Barberry</p> <p><i>Berberis thunbergii</i></p>	S	<p>Dense, woody shrub with numerous arching spine-bearing branches. Normally 3' high, but may grow to 6' height. A single spine grows off the stem beneath each cluster of small wedge-shaped leaves. Small yellow flowers are four-parted and can occur alone or in small clusters. Red berries in the winter. Cutting of shrubs is preferred because it is effective and may cause the least disturbance. Glyphosate herbicide should also be used on stump and roots.</p>	

Table II Exotic Plants Listed as Significant Threats by the Kentucky Plant Council

Common Name, Scientific Name	T	Comments	Picture	
<p>Japanese spiraea <i>Spiraea japonica</i></p>	S	<p>Also called Japanese Meadowsweet. Perennial, deciduous shrub grows to 4' -6' in height and about the same width. Slender erect stems that are brown to reddish-brown, round, sometimes hairy. Leaves are generally egg-shaped, 1"-3" long, have toothed margins and alternate along the stem. Clusters or rosy-pink flowers found at the tips of the branches. Small seeds contained in small lustrous capsules. Cutting or mowing may be effective for small initial populations, or in environmentally sensitive areas. Cut as close to the ground as possible at least twice per year, repeat as necessary. Apply a 2% solution of glyphosate, low pressure and coarse spray.</p>		
<p>Kentucky Bluegrass <i>Poa pratensis</i></p>	G	<p>Common on roadsides, many varieties used as a turf grass. Non-native to KY. One of the most important forage grasses for cattle and sheep, but crowds out other native species. Tufted with creeping underground stems. Stem leaves are flat, about 1/4" wide. Base leaves are often wiry and folded about the midrib. Not drought tolerant, and has poor soil stability features because of its shallow root system. Does not stabilize stream banks. A vigorous competitor, the grass probably preceded the early settlers in KY, but is not considered to be a native grass. Glyphosate effectively controls bluegrass.</p>		<p>Kentucky Bluegrass <i>Poa pratensis</i></p>
<p>Korean Lespedeza <i>Lespedeza stipulacea</i></p>	P	<p>Have broad, heart-shaped leaves that are distinctly veined, with a few small hairs slanting upwards. Flowers range from purple to pink. After flowering, leaves turn forward on around the seed pod, which are in clusters at the end of a branch. Bob-white quail and wild turkey will eat the seeds. Repeated mowing will reduce seed production and plant vigor. Controlled burning can also help control the spread of large patches, as will fertilization with cool season grasses. Individual plants may be treated with a glyphosate solution.</p>		
<p>Lady's Thumb <i>Polygonum persicaria</i></p>	P	<p>Annual plant is 1/2'-2' tall and more or less erect. Stems are usually light green and round; alternate leaves are p to 6" long and 1" across, though usually smaller. Leaves are lance-like, hairless, and smooth along the margins. Upper surface of the leaf has a centrally located dark smudge, (from black to barely seen). Flowers are 1/8" long, arranged in spikes, and pink greenish white, or purple. Often forms colonies in disturbed wetlands, but may occur as scattered plants in drier areas. Hand hoe or hand pull as the plant has shallow roots. If a large area is infested, a glyphosate-based solution can be applied. Different species from Smartweed or Oriental Lady's Thumb.</p>		

Table II Exotic Plants Listed as Significant Threats by the Kentucky Plant Council			
Common Name, Scientific Name	T	Comments	Picture
<p>Lesser periwinkle</p> <p><i>Vinca minor</i></p>	P, V	<p>Perennial plant has a vine-like habit, producing stems up to 3' long that sprawl across the ground. Slender stems are hairless and become woody with age. Leaves are ovate, blunt-tipped, and smooth along margins. Upper surface is dark green and shiny, with a leathery texture. Flowers are about $\frac{3}{4}$"-1" across, with a 5 angled "pin wheel" star that is white along the edge. Spreads through underground runners or from leaf nodes. Hand pulling in early spring is usually helpful, but use a glyphosate based herbicide on the remaining stems and root systems. May require several treatments to control.</p>	
<p>Mimosa</p> <p><i>Albizia julibrissin</i></p>	T	<p>Also called Silk Tree or Silky Acacia.. Small to medium-sized tree that can grow up to 20'-40' tall. Bark is light brown, and generally thin with lens shaped areas along the stem. Attractive fern-like leaves are finely divided 5"-8" long by 3"-4" wide, and alternate along stems. Showy and fragrant blossoms, about 1 $\frac{1}{2}$" long that resemble pom-poms at the ends of branches. Seeds can live for 50 years in storage. Very competitive, short lived, and has brittle wood. Cut tree at ground level and apply 2% glyphosate solution. Hand pull seedlings, or cut and treat stems with glyphosate solution. May require repeated treatments and vigilance to control.</p>	
<p>Miniature Beefsteak</p> <p><i>Mosla dianthera</i></p>	P	<p>The name Miniature Beefsteak is also the name of a variety of tomato, so use the scientific name to further investigate this plant. Annual growing to about 1' in height, flowers from June to September. Plant grows in nearly any soil. Forms a spike with leaves attached opposite on stem. Leaves are ovate, margins clean. This plant is a part of the mint family, so it spreads easily, and propagates through joints in the stem, and underground roots. Use a glyphosate solution to control or remove plant.</p>	
<p>Mint</p> <p><i>Mentha piperita,</i> <i>Mentha spicata</i></p>	P	<p>Also called Peppermint or Spearmint, all of whom are invasive to a degree. Stems are multiple from the base, stand erect, branch, and may be up to 3' in height. Leaves are opposite, lance shaped with serrated edges, with veins branching from a central line. Flower is in a spike, with tiny blooms. Loves wet to moist soil. <u>Grow in pots!</u> Mowing does not control this plant, although cutting plant and spraying stem with glyphosate solution may help. Using a glyphosate solution, spray leaves until wet, but not dripping. May require several applications for control. Often re-sprouts from underground runners.</p>	

Table II Exotic Plants Listed as Significant Threats by the Kentucky Plant Council

Common Name, Scientific Name	T	Comments	Picture	
<p>Ox-eye Daisy</p> <p><i>Chrysanthemum leucanthemum</i></p>	P	<p>Perennial, leaves are alternate, lance-like, with small rounded teeth or lobes on the margin. Plant forms from a basal rosette. Stems usually erect, unbranched, about 1' in height. Flower occurs singly at ends of stems. Flower heads range from 1 ¼" in diameter to 2" in diameter, with yellow center. Correct ID is essential, as is often confused with Shasta Daisy. Usually not touched by grazing because of disagreeable taste. Easily killed by intense cultivation in fields because of shallow root system. Do not mow, as it will stimulate growth. Minimize bare soil to prevent seed germination, pull young plants out by roots, and apply glyphosate solution to individual plants</p>		
<p>Purple Morning Glory</p> <p><i>Ipomoea purpurea</i></p>	V	<p>Entwines around structures with tiny stems, grows to a height of 6' - 9' tall. Leaves are heart shaped and the stems are covered with brown hairs. Flowers are trumpet shaped, predominantly blue to purple or white, 1 ¼" to 2 ½" in diameter. While considered to be a noxious weed, the plant is also grown for its beautiful purple flowers and has many varieties. Re-sprouts from underground runners. Vines can be severed at base and left to dry in canopy. Monitor area for re-growth. Large infestations may be controlled by cutting stems from a comfortable height, laying them on the ground, and spraying with a glyphosate solution.</p>		
<p>Queen Anne's Lace</p> <p><i>Daucus carota</i></p>	P	<p>Wild Carrot plant. Biennial that grows from 2'-4' in height. Leaves are finely divided. Stems are erect and branched; both stems and stems are covered with short coarse hairs. Compound flowerets with flat or slightly convex "head" and many flowers. Seeds are covered with little bristles arranged in 5 rows, and Flowerets turn upward. Do not hand pull plants as they are easily mistaken for other, poisonous plants. Mow when the population is 75% flowered, to prevent seed production. May also be controlled by spraying glyphosate solution on established plants.</p>		
<p>Smartweed</p> <p><i>Polygonum cespitosum</i></p>	P	<p>Also Oriental Lady's Thumb, Bristled Knotweed or Bunchy Knotweed. Annual that forms dense colonies in shallow water or moist soil, and can grow to 3' tall. Stems are jointed and have swollen leaf nodes that are surrounded by a tubular sheath. Roots can develop from the leaf nodes. Leaves are alternate, lance-shaped, and up to 4" long, but usually less than ½" wide. Flowers are on spikes on end of stems, often numerous spikes on the same plant. Flowers begin greenish, turning whitish or light pink as they mature. May be cut and roots dug up, but physical control is difficult and it may re-establish from seeds and rootlets. An application of a water-use approved glyphosate mixture is often a good control.</p>		

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Common Name, Scientific Name	T	Comments	Picture
<p>Spotted Knapweed</p> <p><i>Centaurea biebersteinii</i></p>	P	<p>Short-lived perennial, reproducing solely by seeds. Seeds are brownish, less than $\frac{1}{4}$" long, notched on one side of the base, which a short tuft of bristles at the tip. Seeds can germinate any time. Plant grows 2'-4' tall. Alternate pale green leaves which are 1" to 3" long, leaf margins of lower leaves are divided and smooth, while surface of the leaf is rough. Flowers are pink to light purple and are on tips of stems. Black mottling present on flower bracts. . When confined to small infestations, hand pull or dig up weeds, and remove from site. Treat disturbed soil with a glyphosate solution to prevent re-seeding. Carefully monitor area to control missed plants and seedlings.</p>	
<p>Star-of-Bethlehem</p> <p><i>Ornithogalum umbellatum</i></p>	P	<p>Rosette of basal leaves spanning about 1' across. Linear leaves are $6\frac{1}{2}$" long and about $\frac{1}{4}$" across. Leaves curve upward from base, and bend downward toward the middle. Often a white stripe I the middle of the leaf, which has smooth margins and parallel veins. Flowering stalks are about 6"-9" tall, terminating in white flowers. Each flower is about 1" in diameter when fully open, with 6 petals, 6 stamens, and a single pistil. Blooms in late spring with a pleasing fragrance. Often forms dense colonies. Surprisingly aggressive little plant with attractive flowers. Bulbs are most toxic, but entire plant has low to moderate toxicity. Use a glyphosate based spray to treat disturbed area. In late spring, use a glyphosate-based herbicide on leaves.</p>	
<p>Watercress</p> <p><i>Rorrippa nasturtium-aquaticum</i></p>	P	<p>Perennial, with submersed, floating, or prostrate stems, rooting at nodes. Many pinnate, alternate leaves, widely oblong to ovate, may be wavy-margined. Flowers are $\frac{1}{8}$" - $\frac{1}{4}$" long, and white. Grows near springs, marshes, lake margins, and has a peppery taste. Use an aquatic-environment approved form of glyphosate to kill.</p>	
<p>White Mulberry</p> <p><i>Malus alba</i></p>	T	<p>Broad, flat, alternate leaves, lance-like with fine, double teeth at margin. Not lobed, or with unbalanced lobes. Bark is yellowish brown in color, becomes divided into scaly ridges. Flowers are small green catkins. Fruit resembles blackberries and are cylindrical, 1" - $1\frac{1}{4}$" long. Pale pink to white, matures in late summer. Tree grows up to 40' tall, low branches and a wide spreading crown. Red mulberry is a native species. Large trees must be professionally removed, with stump treatment to prevent additional recurrence. Small trees may be cut close to the ground, and a glyphosate solution applied to the cut stem.</p>	

Table II Exotic Plants Listed as Significant Threats by the Kentucky Plant Council

Common Name, Scientific Name	T	Comments	Picture	
<p>White Poplar</p> <p><i>Populus alba</i></p>	T	<p>Also called Silverleaf Poplar. May reach 70'+ in height and 2' in diameter. Smooth greenish-white bark becomes dark and rough in an older tree. Cross-section of the stem shows five-pointed star-shaped pith. 2"-5" leaves are oval to maple-leaf in shape with 3-5 broad teeth or lobes, dark green on top with a dense white coat of hair on the underside. Flowers are borne in catkins and appear in March and April. Seeds have a cottony fluff that easily blown away. Tree propagates primarily with root suckers. Remove seedlings and young plants by hand to prevent further spread, pulling up the entire root system. Trees of any size should be cut to ground level. Apply a 2% glyphosate solution to young plants, and root area of pulled plants. Spray leaves until wet but not dripping. On cut stump, use 25% glyphosate.</p>		

Key to Type: T = Tree, S = Shrub, P = Flowering Plant, V = Vine, G = Grass, F = Fern

¹ Glyphosate is recommended for use by the US EPA because it quickly degrades into relatively harmless substances. Glyphosate products are sold under a variety of brand names. Read the label carefully to determine the percentage of glyphosate in solution, and follow all recommendations for its use.

² Proper identification is necessary to determine if plant is natural or exotic invasive.

³ Louisville Water Company does not advocate or endorse the use of any brand name product.

EPA's Specific Chemical Fact Sheets are located at this web site: http://www.epa.gov/pesticides/factsheets/chemical_fs

The Kentucky Exotic Pest Plant Council has also developed a listing of plants that are considered to be a lesser threat. These plants seem to principally spread and remain in disturbed corridors, (along road sides, power-line or pipe-line corridors, or in other disturbed areas). They do not readily invade natural areas. In addition, the Lesser Threat List contains some agronomic weeds. These plants are briefly described below in Table III. This list is still under revision. New additions and/or changes are added yearly.

Key to Type: T = Tree, S = Shrub, P = Flowering Plant, V = Vine, G = Grass, F = Fern

Table III Exotic Plants Listed as Lesser Threats by the Kentucky Plant Council

Common Name, Scientific Name	T	Comments	Picture	
<p>Barnyard Grass</p> <p><i>Echinochloa crus-gallii</i></p>	G	<p>Stout, tufted grass reaching 6"-64" tall. Grass blades are flat, 4"-20" long and $\frac{1}{4}$" - $\frac{3}{4}$" wide, smooth, with wavy-toothed margins and a conspicuous mid-vein. Seed awn is 3"-1" long, pale green to purplish and composed of 5-12 branches pressed together, as shown at right, or spreading. Usually found in moist, disturbed, open areas, and prefers fertile soils. Control by hand pulling when ground is damp, or by 2% glyphosate solution sprayed on leaves until wet.</p>		

Table III Exotic Plants Listed as Lesser Threats by the Kentucky Plant Council

Common Name, Scientific Name	T	Comments	Picture	
<p>Bitter Nightshade <i>Solanum dulcamara</i></p>	P	<p>Also called Dulcamara, Nightshade, Climbing Nightshade, Woody Nightshade, Fevertwig,, Violet Bloom, Blue Bindweed, Felonwort, Poisonberry, Poisonflower, Morel, Snakeberry, Wolfgrape, or Scarlet Berry. Found in low, damp grounds and moist river banks. Has a climbing, somewhat woody, branched stem about 2'-8' long. Leaves are from 2"-4" long, some entire, and some having three lobes at the base. Berries are oval, red juicy, and contain numerous seeds.</p>		
<p>Black Medic <i>Medicago lupulina</i></p>	P	<p>Shallow rooted with multi-branched, slender, prostrate, slightly hairy stems spreading 12"-24". Leaves are alternately arranged, dark green, and are compound with 3 oval leaflets. Center leaflet is stalked and side leaflets occur close to the stem. Leaves are sparsely hairy and the leaflets are 1/5" - 3/5" long. Flowers are 1/8" - 1/6" long bright yellow flowers clustered on short stems that emerge from the leaf axil. Each cluster is approximately 1/2" long and has up to 50 individual flowers. Use a 2% glyphosate solution on leaves, wet leaves thoroughly, or hand pull.</p>		
<p>Bulbous Buttercup <i>Ranunculus bulbosus</i></p>	P	<p>Long-growing perennial with divided leaves and distinctive yellow flowers. Common weeds of turf grass, lawns, pastures, landscapes. Roots form a corm, which is like a bulb, but not as prominent. Basal leaves are divided into 3 lobes. Stem leaves are generally smaller than basal leaves and arranged alternately along the stem. Stem leaves are also less distinctively lobed than basal leaves. Single flowers occur on flower stalks at the end of the stems. Flowers range from 1/2"-1 1/4" wide and consist of 5 - 7 bright yellow petals. Control by hand pulling, removing corm. Use a 2% glyphosate solution on leaves, wetting thoroughly.</p>		
<p>Canada Bluegrass <i>Poa compressa</i></p>	G	<p>Like KY Bluegrass, has a distinctive blue green color. Spreads by underground rhizomes and seeding. Well adapted to open, rather poor dry soils and may be better for pastures and lawns. Considered a 'cool season' grass, but has the shallow root system of Kentucky Bluegrass. Although well-naturalized throughout the Midwest, it is considered to be a non-native, invasive species, and should be controlled to prevent spreading. Use a 2% glyphosate solution on leaves, wetting thoroughly.</p>		

Table III Exotic Plants Listed as Lesser Threats by the Kentucky Plant Council

Common Name, Scientific Name	T	Comments	Picture
<p>Catnip <i>Nepeta cataria</i></p>	P	<p>Catnip is a perennial herb native to Eurasia, widely naturalized in North America. The plant has been used for ornamental, culinary, and medicinal uses for centuries. Heart-shaped, toothed leaves on an erect growing plant, up to 3' height. White flowers are purple flowered. Use a 2% glyphosate solution on leaves, wetting thoroughly for control.</p>	
<p>Chicory <i>Cichorium intybus</i></p>	P	<p>A perennial, whose name is often associated with coffee, chicory has a tap root like a dandelion. Stems are 2'-3' high, with numerous lateral branches that spread, with few leaves other than those at the bottom of the plant. Lower leaves are large and spreading—thickly covered with hairs, something like the form of a dandelion leaf, except that the leaves are at a nearly right angle from the stem. Coarsely toothed leaves. Flowers are blue and appealing to bumblebees. Can be invasive. Control with a 2% glyphosate solution on leaves.</p>	
<p>Cleavers <i>Galium pedemontanum</i></p>	G	<p>Also called Bedstraw. Found in forest thickets, grassy meadows and in agricultural fields. Erect plant grows up to 1 ½' tall. Leaf nodes spaced evenly, with whorled leaf attachment. Tiny yellow or yellowish white flowers at leaf nodes. Stems of plant are hairy. Plants may be pulled by hand, but make sure to get the thin tap root. Control by using a 2% glyphosate solution before bloom in May. Wet leaves thoroughly.</p>	
<p>Common St. John's Wort <i>Hypericum perforatum</i></p>	P	<p>Yellow flowering, rhizomatous, perennial herb. The name comes from the traditional flowering and harvesting on June 24, St. John's Day. Plant has small oil glands in the leaves that may be seen if held up to the light. Ingestion by livestock can cause toxic reaction up to death. Yellow, five petal flowers approximately ¾" to 7/8" in diameter. When flowers or seed pods are crushed, a reddish/purple liquid is produced. Control by using a 2% glyphosate solution before bloom in May. Wet leaves thoroughly.</p>	

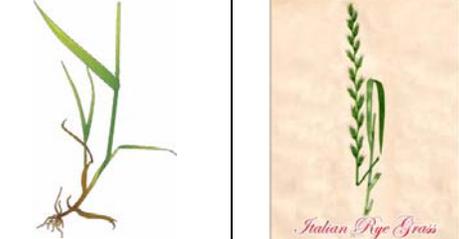
Table III Exotic Plants Listed as Lesser Threats by the Kentucky Plant Council

Common Name, Scientific Name	T	Comments	Picture
<p>Common Yellow Wood-sorrel</p> <p><i>Oxalis stricta</i></p>	P	<p>Also called Common Yellow Oxalis or Sour Grass. Leaves are a bright, light green, divided into three heart-shaped parts, (similar to clover). Leaves are often folded downward; flowers are a bright golden yellow, with five petals. Size and growth varies considerably. Plants are generally upright, but have weak stems and are difficult to pull by hand. Leaves, flowers, and seed pods are edible, but should not be consumed in large amounts as oxalic acid is toxic. Spreads quickly. Control by using a 2% glyphosate solution before bloom in May. Wet leaves thoroughly.</p>	
<p>Corn-gromwell</p> <p><i>Lithospermum arvense</i></p>	P	<p>Annual that grows from 4" to 28", simply or sparsely branched. It has one or several stems from the base, the central one usually the largest, with flat, stiff, short hairs. The leaves are alternate, the lowermost oblate, and soon withering, with the upper leaves oblong, lance-like and stalkless. The flowers are barely stalked, set in the axils of the upper leaves. Flowers are white or bluish white, with petals that are about 3/8" long, found in groups of five. Found in disturbed areas. Control by using a 2% glyphosate solution before bloom in May. Wet leaves thoroughly.</p>	
<p>Day Lily</p> <p><i>Hemerocallis fulva</i></p>	P	<p>Flowers open at sunrise and wither at sunset, possibly replaced by another one on the same stem the next day. Some species are night blooming. Popular for flower beds, over 60,000 registered types. Daylilies occur as a clump, including leaves, crown, and roots. Long, often linear lance-like leaves are grouped into flat fans with leaves arching out to both sides. Crown is the small white portion between the leaves and the roots, an essential part of the fan. Along the flower stem are small, leafy proliferations that are the clone of the parent plant. Flower has three petals, each with a midrib of a contrasting color. After pollination, the flower forms a pod. Easily crowds out native plants. The flowers are edible and often used in Chinese foods. Have medicinal uses. Control by digging, removing plant from site, or by using 2% glyphosate solution.</p>	
<p>Dayflower</p> <p><i>Commelina communis</i></p>	P	<p>Erect or prostrate creeping, 6" to 20" long, often takes root at the nodes. Leave are lance-like to ovate, Flower is 1/8" to 2" long. Upper two petals are larger and blue, lower petal is smaller and white. Found along stream beds and moist, shaded areas. Highly invasive. Control by using 2% glyphosate solution before bloom in early summer.</p>	

Table III Exotic Plants Listed as Lesser Threats by the Kentucky Plant Council

Common Name, Scientific Name	T	Comments	Picture	
<p>Deptford Pink <i>Dianthus armeria</i></p>	P	<p>1-2 ½" tall. Annual or biennial plant is slender and easy to miss until it blooms. Branches sparingly above widely-spaced pairs of leaves. Opposite leaves are up to 3" long and 1/8" across. Upper stems terminate into small clusters of pink flowers. Each flower is about 1/3" across, with 5 spreading petals. Likes full sunshine and dry conditions. Control by using a 2% glyphosate solution. Wet leaves thoroughly.</p>		
<p>Dock, Sheep Sorrel <i>Rumex acetosella</i></p>	P	<p>A medicinal herb in use today, Dock or Sheep Sorrel is seldom more than 18" tall. Alternative, arrowhead like leaves, very small flowers, and frequently reddish stems, (called Red Sorrel). Found in old fields and other disturbed areas. Primarily a weed of turf grass, lawns, roadsides, landscapes and some nursery crops. The plant has a large tap root and rhizomes. Flowers occur in clusters along the stems, yellowish-green in color, (male), red to maroon in color, (female). Control by using a 2% glyphosate solution. Wet leaves thoroughly, and protect surrounding vegetation.</p>		
<p>Field Bindweed <i>Convolvulus arvensis</i></p>	V	<p>A perennial trailing or climbing weed with white morning glory-like flowers that may reach 3 1/3' in length. Usually a weed of nurseries, cropland, and fencerows. Leaves are alternate and triangular, and leaf bases are pointed and have lobes that point outward. Flowers are white to pink in color, ¾" to 1" long. Control by using a 2% glyphosate solution. Wet leaves thoroughly, and protect surrounding vegetation</p>		
<p>Field Cress <i>Thlaspi perfoliatum</i></p>	P	<p>Also known as Pennycress. Small grayish plant with a cluster of white flowers at the top of the stem. The bottom of its distinctively pointed leaves completely encircle the flower stem. Grows on bare spaces or on old walls. Flowers from May to June, seeds ripen from July to September. Loves cultivated beds, but may be found in any type soil, with any type pH. Usually ½' to 1' tall. Leaves are heart-shaped with the point of the heart attached to the stem. Control by using a 2% glyphosate solution prior to blooming, if possible.</p>		
<p>Henbit <i>Lamium amplexicaule</i></p>	P	<p>Henbit is a winter annual with square stems and pink-purple flowers reaching 16" tall. Primarily a weed of Turfgrass, landscapes, and small grains. Leaves are opposite, up to 5" in length, with hairs on the upper leaf surfaces and along the veins of the lower surface. Leaves have rounded teeth on the margins. Stems lie on the ground but have tips that are green or often purple tinged. Plant has fibrous roots. Flowers occur as whorls in the upper leaves, are pink to purple in color and are fused into a tube approximately 2/3" long. Control with a 2% glyphosate solution.</p>		

Table III Exotic Plants Listed as Lesser Threats by the Kentucky Plant Council

Common Name, Scientific Name	T	Comments	Picture
<p>Indian Strawberry <i>Duchesnea indica</i></p>	P	<p>Perennial often found in shady locations. Primarily a weed of landscapes and Turfgrass. Leaves composed of three leaflets. Leaflets are ovate to elliptic $\frac{3}{4}$" to 3" long, $\frac{1}{3}$" to $1\frac{1}{2}$" wide, with rounded teeth along the margins. Flowers occur alone along the stalks as 5 yellow petals with large leafy sepals beneath. Fruit is a flashy red berry, similar to commercially produced strawberries. Similar in appearance to wild strawberry. Control with a 2% glyphosate solution.</p>	
<p>Italian Rye <i>Lolium multiflorum</i></p>	G	<p>Large, stout, densely tufted perennial that is 12" to 35" high. Flower head is flattened with the spikelets arranged alternatively along stem. Spikelets are awned. Becoming herbicide resistant. Leaves are rolled together when in bud, unlike regular rye grass. Control with a 2% glyphosate solution.</p>	
<p>Lamb's Quarters <i>Chenopodium album</i></p>	P	<p>Odorless, branching, annual herb, with stalked, opposite leaves, that are clammy feeling, unwettable, and have a whitish coating on the underside. Mature leaves are narrow and toothless, while early leaves are diamond-shaped and somewhat toothed. Edible. If it has no odor it may be eaten as a green, if it has a resinous smell, it is a spice. Red tracing in the leaf means that it has become infected with spinach leaf miner larvae. Grows 1' to 6' tall, large specimens have a bushy appearance. Flowers are in spikes with very small yellowish green flowers. May be an important source of food and cover for many kinds of insects and birds. Control with a 2% glyphosate solution.</p>	
<p>Lovegrass <i>Eragrostis cilianensis</i></p>	G	<p>Mostly erect stem; sometimes bent. Blades are rolled upward at tip, 2" to 12" long, less than $\frac{1}{4}$" wide, often hairy on upper surface near base. Densely flowered panicles, mostly 2" to 6" long, often reddish brown. Spikelets are numerous, short-stalked, strongly flattened. Occurs in dry pastures, prairies, and waste ground, in sandy soils. Control with a 2% glyphosate solution.</p>	
<p>Mexican Tea <i>Chenopodium ambrosioides</i></p>	P	<p>The Mexican Tea plant is a strong scented herb which may be annual or perennial. Its growth can be erect or ascending, up to 38" tall. The stems and branches may be smooth, or minutely hairy. The leaves are alternate, oblong to ovate, or even lance-like in shape contain varying numbers of small dots which are glands. The margins may either be wavy or smooth. The flowers occur in clusters on spikes. Plant has a very disagreeable odor, but is used as a spice in Mexican or Caribbean cooking—it is referred to as an "acquired" taste. Control with a 2% glyphosate</p>	

solution.

Table III Exotic Plants Listed as Lesser Threats by the Kentucky Plant Council

Common Name, Scientific Name	T	Comments	Picture
<p>Motherwort <i>Leonurus cardiaca</i></p>	P	<p>Also known as Throw-wort, Lion's ear, and Lion's tail. A member of the mint family, it has a square stem and opposite leaves. Basil leaves are wedge shaped with 3 points. Flowers appear in leaf axils on the upper part of the plant and bloom between June-August. Grows from 24" to 40" tall, but has report to grow up to 6 ½' tall. It has many medicinal uses. Control with a 2% glyphosate solution.</p>	
<p>Self-heal <i>Prunell vulgaris</i></p>	P	<p>Also known as Prunella, All-Heal, Hook-Heal, Slough-Heal, Brunella, Heart of the Earth, and Blue Curls. Grown for medicinal purposes. Low growing plant, commonly a turf weed. Flowers are thickly placed together at the top, framed by a pair of stalk-less leaves standing out on either side like a collar. Flowers arranged in tiers with six stalkless flowers per tier. Reproduces from seeds that ripen slowly through the summer, and by stem nodes lying on the ground. Control with a 2% glyphosate solution.</p>	
<p>Shrubby Lespedeza <i>Lespedeza thunbergii</i></p>	S	<p>Non-woody perennial shrub that grows up to 8' tall and spreads 8'. Dies back to the ground every winter. Has been used for erosion control in road construction. Provides food and cover for wildlife, but may be invasive. Leaves are alternate, compound with 3 leaflets, spirally arranged on stem; each leaflet is 2" long, elliptical, and dull to medium green. Flowers are pink to purple; each flower is ½" in diameter, pea-like. Produces black seeds that mature in late fall. Control by cutting and spraying glyphosate on cut stems prior to seed maturity.</p>	
<p>Speargrass <i>Poa annua</i></p>	G	<p>Also called Annual Bluegrass. Low-growing, cool-season grass which dies early in summer when the top layer of soil dries out. It can be distinguished from other grasses by its typical leaf tip, which is shaped by the bow of a boat. The leaf blade is often crinkled at the midsection. Mature plant grows as dense, low-spreading tufts, 3"-12" tall, and often roots at the lower nodes. Control with a 2% glyphosate solution. Difficult to control in turf grass.</p>	
<p>Sulphur Five-Fingers <i>Potentilla recta</i></p>	P	<p>Also known as Rough-fruited Cinquefoil, Sulphur Cinquefoil. Has medicinal value, and in past was felt to have magical powers. Erect perennial 16" to 32" tall, unbranched stem, branched for flowerets. Flowers pale yellow with bright yellow center, 5 petaled, with petals notched and heart-shaped. Blooms June to Aug. Leaf is palmately divided deeply toothed. Lower leaves are long-stalked. Grows in dry disturbed areas. Control with 2% glyphosate solution.</p>	

Table III Exotic Plants Listed as Lesser Threats by the Kentucky Plant Council

Common Name, Scientific Name	T	Comments	Picture	
<p>Thyme-leaf Sandwort <i>Arenaria serpyllifolia</i></p>	P	Lives on bare ground, in arable fields, walls, cliffs, etc. Annual or biennial growing to 12" tall. Flowers from June to August. Reproduces from pollination and is self-fertile. Entire plant is used as a pot-herb, and has medicinal uses, but can be invasive. Flowers are usually white, with yellowish-green centers, five sharply pointed petals. Leaves are small, sharply bladed, opposite on branched stem. Control by 2% glyphosate solution before blooming in early spring.		
<p>Velvet Grass <i>Holcus lanatus</i></p>	G	Also known as Yorkshire Fog, Old White-top, Feather Grass, and White Timothy. Gray-green, velvety hairy grass. Relatively broad gray leaves contrast with pure green, narrower blades of typical lawn grass species. Flower clusters are pink to pale purple, and in seed, can fade to ghostly white. Perennial, grows 1' to 3' tall. Blooms in May or June, and is very pretty in July. Prefers sunny sites, is drought tolerant, may be used as an ornamental grass. May be invasive. Forms in clumps and is not root-creeping. Control with 2% glyphosate solution.		
<p>White Morning Glory <i>Ipomoea lacunose</i></p>	V	Flower is petunia-like with 5 fused petals in a trumpet shaped corolla. Flower is small ½" to 1" in length and either white, pink, or lavender, commonly with lighter stripes. Leaves are either heart-shaped or with 3 triangular lobes. Found along roadsides, in fields, and thickets. Flowers from August to October. Seeds are not eaten by many birds, but flowers offer nectar for bees. Control by 2% glyphosate solution.		
<p>Willowleaf Lettuce <i>Lactuca saligna</i></p>	P	Leaves are whorled on stem, thin, spike-like with prominent mid-rib. Flowers are small, multi-petaled, and usually white to yellowish white. Considered to have low value to wildlife and is a weed. Control with 2% glyphosate solution.		
<p>Yellow Rocket <i>Barbarea vulgaris</i></p>	P	Mustard family plant that prefers moist fields, stream banks. Grows 1'- 3' tall. Flowers are ¼" to 3/8" across, in clusters, bright yellow in color, and flowers from April to August. Annual or biennial, has shiny green foliage. Primarily a weed of turfgrass, winter grains, and pastures. Leaves become toothed with maturity, are alternate along stem, and have a basal rosette the first year of growth. Control with 2% glyphosate solution.		

Key to Type: T = Tree, S = Shrub, P = Flowering Plant, V = Vine, G = Grass, F = Fern

¹ Glyphosate is recommended for use by the US EPA because in 10 days, it quickly degrades into relatively harmless substances. Glyphosate products are sold under a variety of brand names. Read the label carefully to determine the percentage of glyphosate in solution, and follow all recommendations for its use.

² Proper identification is necessary to determine if plant is natural or exotic invasive.

³ Louisville Water Company does not advocate or endorse the use of any brand name product.

EPA's Specific Chemical Fact Sheets are located at this web site: http://www.epa.gov/pesticides/factsheets/chemical_fs

Common Weeds

A **weed** is any plant, considered by the user, to be a nuisance, and is normally applied to unwanted plants in human-made settings, like a garden, lawn, agricultural area, parks, woods, or other natural settings. More specifically, the term is applied to describe **native or non-native plants that grow and reproduce aggressively**. Weeds may be unwanted because they are unsightly, or they limit the growth of other plants by blocking light or using up nutrients from the soil. They can also be considered a weed if they harbor and spread path pathogens that can infect and degrade the quality of a crop or horticultural plants. Weeds may be a nuisance because they have thorns or prickles, cause skin irritation, act as a poison to livestock, or parts of the plant may come off and attach to fur and clothes.

In a general sense, the term weed is a subjective one, without any classification value, since a weed is not a weed if it is growing where it is wanted or where it belongs. A number of "weeds" have been used in gardens or other cultivated-plant settings, such as wildflower gardens, herb gardens, or gardens designed to attract or sustain wildlife. The most important characteristic that most weeds share is their ability to reproduce often, quickly, and/or easily, have seeds that persist in the soil bank for many years, or have short life spans with multiple generations in the same growing season. Perennial weeds often have underground stems that spread out under the soil surface, or, like ground ivy, have creeping stems that spread out over the ground. A number of weedy species have developed allelopathy, which is a chemical way to prevent the germination or growth of neighboring plants.

The plants listed here as common weeds are but a sampling of the plants considered being 'weeds' that are common to Kentucky. Some plants that are desirable to promote wildlife growth and habitat are considered to be 'weeds' in the agricultural industry. Some plants previously listed are known to promote wildlife habitat and growth, but are listed as non-native, invasive threats by the Kentucky Plant Council. If cultivating a plant listed here as a 'weed' or non-native, invasive species for decorative purposes, to promote wildlife, for a wildflower garden, or for an herb garden, be careful that the plant does not spread and compete with native plants that are more nutritious and less invasive.

Key to Type: T = Tree, S = Shrub, P = Flowering Plant, V = Vine, G = Grass, F = Fern

Table IV Common Weeds Listed by the Kentucky Dept. of Agriculture

Common Name, Scientific Name	T	Comments	Picture
Bermudagrass <i>Cynodon dactylon</i>	G	Also called Couchgrass, Devilgrass, Wiregrass, or Dogtooth grass. A low-growing, wiry, perennial grass that is frequently used for lawns but also is a trouble weed in many gardens. Plant grows rapidly and forms dense mats with spreading and branching stolons that root at the nodes. Flowering spikes radiate from a single point at the tip of the stem. Rhizomes are shallow, but may be deeper. Leaves are generally smooth and pointed. Reproduces from creeping nodes. Control with a 2% glyphosate solution, wetting leaves thoroughly, and protecting neighboring plants. Repeat as needed.	

Table IV Common Weeds Listed by the Kentucky Dept. of Agriculture

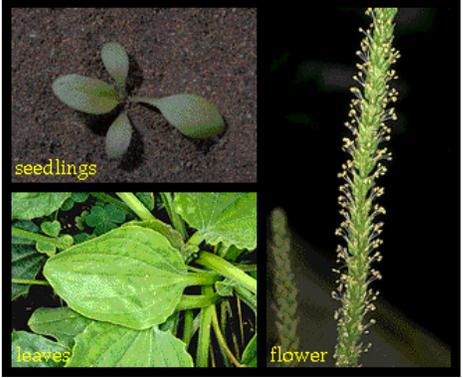
Common Name, Scientific Name	T	Comments	Picture
<p>Bigroot Morning Glory <i>Ipomoea pandurata</i></p>	V	<p>Stems are trailing or twining, purplish, smooth to slightly hairy 2' - 20' long. Leaves are alternate, entire, long-stalked, heart-shaped at base, sharp-pointed at tip. Flowers are showy white, funnel-shaped with purplish red centers. Fruit is a capsule that contains dark brown, wedge shaped flattened seeds. Found on roadsides, riverbanks, thickets, gardens, fencerows, fallow, and no-till fields. Control with 2% glyphosate solution.</p>	
<p>Blackseed Plantain <i>Plantago rugelii</i></p>	P	<p>Thin, erect stems that are leafless, 6"-13" tall. Leaves all basal, simple, broad, egg-shaped, distinctly veined, and purplish at base. Flowers are numerous, inconspicuous, in spikes at the end of the stems. Fruit is a cylindrical capsule that splits across the lower half of the flower. Found in turf, pastures, waste places, barnyards, gravelly paths, old fields, fallow, and no-till fields. Control with 2% glyphosate solution.</p>	
<p>Broadleaf Plantain <i>Plantago major</i></p>	P	<p>A perennial weed that grows in areas of inconsistent irrigation. Leaves develop in a rosette; are smooth and oval and the narrow at the attachment point on the stalk. Leaf blades are large, 3" to 6" long with prominent ribbed veins. Roots are fibrous and shallow, yet may be difficult to pull. Flowers are produced on stalks, 3" to 6" in length. Main growth from June through September. If pulling plants, be sure to remove all roots. Alkaline soils promote growth. Control with a 2% glyphosate solution, wetting leaves thoroughly, and protecting surrounding plants.</p>	
<p>Buckhorn Plantain <i>Plantago lanceolata</i></p>	P	<p>Perennial weed primarily of Turfgrass. Small plants resemble an emerging grass, so identification may be made later in the life cycle. Produces a stubby spike that is unbranched and leafless, and contains many inconspicuous flowers. Roots are fibrous with a short taproot. Leaves form in a basal rosette; linear to lance-like, 2" to 10" long by 1/4" to 1" wide; veins run the length of the leaf, and may be sparsely hairy or without hairs. Flower spikes are similar to Broadleaf Plantain. Control with a 2% glyphosate solution, wetting leaves thoroughly, and protecting surrounding plants.</p>	
<p>Burcucumber <i>Sicyos angulatus</i></p>	P	<p>Stems are hairy, ridged with forked tendrils at the side of the leaves. Leaves are alternate, 3-5 sharp lobed, and 4" - 8" wide. Flowers have male and female types on separate stalks from the same leaf axils, whitish-green, and 1/2" long. Fruit is rounding in outline, leathery, tapering into a sharp point, covered with hairs and bristles, even warty. Control with 2% glyphosate solution.</p>	

Table IV Common Weeds Listed by the Kentucky Dept. of Agriculture

Common Name, Scientific Name	T	Comments	Picture	
<p>Carolina Geranium <i>Geranium carolinianum</i></p>	P	<p>Basal leaves are 1"-3" wide with 5-8 deeply lobed segments, hairy and pinkish beneath. Stem leaves are similar. Flowers are sham, 5 petaled, pink to lavender in color. The fruit is a long pointed seed pod, splitting into five curled parts when mature. Control with a 2% glyphosate solution.</p>		
<p>Carpetweed <i>Mollugo verticillata</i></p>	P	<p>A late-germinating, much-branched summer annual that forms circular patches several feet in diameter. Leaves are smooth, in whorls, with 3-8 leaves at each node. Leaves are 3/8" to 1 1/4" long, widest in the center and tapering on both ends. Has a small, branched taproot. Stems are green, smooth and multi-branched, from 2" - 12" long. Flowers are in clusters of 2-5 flowerets, white, and only 1/4" wide. Forms a light green, mat-like growth. Control by using a 2% glyphosate solution.</p>		
<p>Clammy Groundcherry <i>Physalis heterophylla</i></p>	P	<p>Stems are hairy, glandular, sticky, branched, and from 1' - 3' tall. Leaves are alternate, broadly ovate, and hairy, with irregular wavy or bluntly toothed margins, 2" - 3" long. Flowers are produced along the leaf axils, solitary, wheel-shaped, drooping, with 5 petals and are dull yellow, with dark purple spots in the center. Produces a round, yellow berry, surrounded by an inflated calyx. Control by using a 2% glyphosate solution.</p>		
<p>Common Cocklebur <i>Xanthium strumarium</i></p>	P	<p>Stems are loosely branched, stout, and green with maroon flecks, hairy, grooved or ridged, 2' - 4' tall. Leaves are alternate, long stalked, 3 lobed, coarsely toothed, dull green and rough on both surface with three major veins. Flowers are in heads on different parts of the plant, male flowers are small, female flowers are found in clusters surrounded by bristles. The fruit is enclosed in a burr with hooked prickles. Control with a 2% glyphosate solution. See Cocklebur under Severely Toxic Plants.</p>		
<p>Common Mallow <i>Malva neglecta</i></p>	P	<p>Leaves are large, alternate, circular or heart-shaped, lobed, crinkled and distinctly veined. Stems are upright or close to the ground, and hairy. Flowers are small with 5 whitish-pink petals, and may appear funnel-like. Fruit is a flat disk, dividing into many parts. Control with a 2% glyphosate solution.</p>		

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Common Name, Scientific Name	T	Comments	Picture
<p>Common Milkweed <i>Asclepias syriaca</i></p>	P	<p>Stout stems, unbranched, covered with short downy hairs and contains a milky sap. Grows 2' - 5' tall. Leaves are opposite or whorled, oblong, 4" - 8" long, pale green above, whitish beneath and prominently veined. Flowers are purplish-pink to green, bell-shaped, in clusters, hanging from the tips of the branches and in the leaf axils. The fruits are a warty pod that contains brownish winged seeds with tufts of long silky hairs. Control with a 2% glyphosate solution.</p>	
<p>Common Ragweed <i>Ambrosia artemisiifolia</i></p>	P	<p>Stems are hairy, freely branched, 1' - 6' tall. Leaves are opposite near base, alternate near top of plant, deeply divided, hairy, and emit a strong odor when crushed. Flowers are male and female on different parts of the plant. Male flowers droop at the top, in saucer shaped clusters, while female flowers are found in the axils of the leaves. Common cause of hay fever, along with Giant Ragweed, (<i>Ambrosia trifida</i>). Control with a 2% glyphosate solution.</p>	
<p>Crabgrass <i>Digitaria ischaemum</i>, <i>D. sanguinalis</i></p>	G	<p>Also known as Crowfoot Grass, because of 5 fingered bloom. Two species of crabgrass are commonly found as weeds, smooth crabgrass and large crabgrass. Smooth crabgrass is a low-growing annual that spreads by seed and from rootings of the nodes that lie on the soil. Leaves are from 1/4" to 1/3" wide and up to 5" long. There may be a reddish tint at the bottom of the leaf. Large crabgrass may grow to heights of 2', with leaves that are similar to smooth crabgrass. A healthy lawn will help control crabgrass, but it may also be controlled with a 2% glyphosate solution, wetting leaves thoroughly, and protecting surrounding plants.</p>	
<p>Creeping Bentgrass <i>Agrostis palustris</i></p>	G	<p>A cool season perennial, Creeping Bentgrass reproduces by seeds and stem pieces. Spreads by vigorous above-ground stems and forms puffy, dense patches of fine-textured grass capable of forcing out other turf grasses. Blue-green leaves are flat, about 1/8" wide and usually rough on the sides and margins. Tip is pointed; veins are prominent. Purplish flowers are compressed, usually occurring in late spring or early summer. Control with 2% glyphosate solution.</p>	

Table IV Common Weeds Listed by the Kentucky Dept. of Agriculture

Common Name, Scientific Name	T	Comments	Picture
<p>Curly Dock <i>Rumex crispus</i></p>	P	<p>Stems are smooth, ridged, with enlarged nodes. Leaves are mostly found at the base, but the few grass-like leaves above the plant are alternately attached. Leaves are bluish-green, simple, narrow, and have a wavy margin. Flowers are in whorls crowded in dense clusters; 6 sepals with 3 larger ones above, that bear a grain. The fruit is a glossy, reddish-brown, triangular seed clump. Control with 2% glyphosate solution.</p>	
<p>Cutleaf Groundcherry <i>Physalis angulata</i></p>	P	<p>Stems are branched, erect, and smooth. Leaves are stalked, alternate, ovate in outline with coarsely toothed margins. Flowers are usually solitary, wheel-shaped, with 5 triangular sepals and 5 light yellow petals. No purple centers, like other groundcherry varieties. Fruit is a berry, enclosed by a papery lobe. Control with 2% glyphosate solution.</p>	
<p>Dallisgrass <i>Paspalum dilatatum</i></p>	G	<p>Perennial grass that creates an unsightly clump in turf grasses. Plants are easily bent over, escape mowing, and spring up to be noticed. Leaves are fairly wide, (1/4" -1/2"). If left unmowed, will grow outward and will reach 4" to 10" tall. Rhizomes look like they have concentric circles or rings on surface. As the clump matures, may have a different weed growing in the center. Produces abundant amounts of seed. Control with 2% glyphosate solution.</p>	
<p>Dandelion <i>Taraxacum officinale</i>, <i>T. densleonis</i>, etc.</p>	P	<p>Over 250 species known. A medicinal herb, now felt to be carcinogenic if ingested in large amounts. Leaves are 2" to 10" long, toothed, single, forming a rosette. Flowers are bright yellow, complex, grown on a hollow stem, and may have a sweet odor. If broken, flower stem exudes a milky sap. Flower heads mature into a puffball with seeds attached to the sepal, and are often spread by the wind. Flower is food for certain species of butterflies. Has large tap root, difficult to pull. Digging is a hard method of control. Easier control with 2% glyphosate solution.</p>	
<p>Eastern Black Nightshade <i>Solanum ptycanthum</i></p>	P	<p>Stems are slender, freely-branching, ridged, greenish-purple. Leaves are alternate, triangular to elliptical, sometimes purple-tinged on the underside, leaf margins entire to bluntly toothed. Flowers in clusters with each star-shaped flower having 5 sharp-pointed sepals, 5 whitish-yellow petals and 5 bright yellow anthers. The fruit is a green berry, turning purplish-black at maturity, less than 1/2" wide. Control with a 2% glyphosate solution.</p>	

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Common Name, Scientific Name	T	Comments	Picture
<p>Eclipta <i>Eclipta prostrata</i></p>	P	<p>Stems are low-growing and rooting, or upright. Stems are reddish-brown in color and ridged. Leaves are opposite, narrow, and toothed. Flowers are numerous in solitary heads at the ends of the branches, white with yellow centers. The fruit is widest at the top,, with short hairs at the base, warty on surface, and black-brown. Control with a 2% glyphosate solution.</p>	
<p>Entireleaf Morning Glory <i>Ipomoea lacunose</i></p>	V	<p>Very similar to Ivyleaf Morning Glory, but the leaves are entire, heart shaped, and unlobed. (See Ivy Leaf Morning Glory, page 13.) Control with a 2% glyphosate solution</p>	
<p>Field Pennycress <i>Thlaspi arvense</i></p>	P	<p>Leaves are alternate, simple, toothed, 1/2" - 2" long with the upper leaves clasping the stem. Flowers are numerous, small with 4 sepals and 4 white petals. The fruit is circular,, flattened, winged, and notched at the top, about 1/2" wide. See Fieldcress, (<i>Thlaspi perfoliatum</i>), for information on its close relative. Control with a 2% glyphosate solution.</p>	
<p>Field Pepperweed <i>Lepidium campestre</i></p>	P	<p>Basal rosette leaves are arrow-shaped to spatulate, often pinnately lobed or toothed; stem leaves are arrow-shaped with bases clasping the stem. Flowers are inconspicuous with 4 sepals and 4 whitish-green petals, in dense clusters at the top of the stem. The fruit is slightly longer than wide, and somewhat pointed at the top, 2-valved with 1 seed in each partition. Control with 2% glyphosate solution.</p>	
<p>Giant Ragweed <i>Ambrosia trifida</i></p>	P	<p>Stems are coarse, hairy, and erect, up to 10' tall or more on fertile, moist soils. Leaves are opposite, stalked, large, 3-5 lobed with toothed margins, coarse and slightly hairy. Plant produces both male and female flowers, the male flowers on the tips of the branches in a spike-like cluster, the female flowers that are small, few, and in the axils of the upper leaves. The fruit is a brown seed, cone-shaped, and surrounded by smaller, thicker spines with ribs leading downward. Control with 2% glyphosate solution.</p>	

Table IV Common Weeds Listed by the Kentucky Dept. of Agriculture

Common Name, Scientific Name	T	Comments	Picture
<p>Hairy Bittercress <i>Cardamine hirsuta</i></p>	P	<p>Leaves are mostly basal, forming a rosette of deeply divided lobes with the terminal lobe the largest; blades hairy on the upper surface and stalk. Flowers small with 4 sepals and 4 white petals. The fruit is very thin, more than 10 times as long as wide, stiffly ascending.</p>	
<p>Hairy Galinsoga <i>Galinsoga ciliate</i></p>	P	<p>Stems are erect, rough, and hairy. The leaves are opposite, spoon-shaped, coarsely toothed and veined. Flowers have very small heads, with yellow centers and white outer rays. The fruit is widest at the top, hairy, dark brown to black. Control with a 2% glyphosate solution.</p>	
<p>Hedge Bindweed <i>Calystegia sepium</i></p>	V	<p>Stems are smooth to hairy, twining or trailing, 3' - 10' long. Leaves are alternate, simple, long-stalked, and heart-shaped to triangular with 2 broad basal lobes. Flowers are produced on long angular stalks; showy, 1 1/2" - 2" wide, funnel shaped, white to rose-colored, with 2 bracts that are large, green, below the flowers. Fruit is a 3 angled capsule that contains 2-4 grayish-black seeds. Control with a 2% glyphosate solution.</p>	
<p>Hemp Dogbane <i>Apocynum cannabinum</i></p>	P	<p>Stems are slightly woody at the base, branched, 3' - 5' tall, with a milky sap. The leaves are opposite, simple, oblong to narrow, distinctly veined, dark-green above and pale underneath. Flowers are bell-shaped, greenish-white, small, and in dense terminal clusters. The fruits consist of 2 slender reddish-brown pods; that develop from each flower; seeds with silky hairs. Control with 2% glyphosate solution.</p>	
<p>Honeyvine Milkweed <i>Ampelamus albidus</i></p>	V	<p>Stems are twining, smooth, slender, without milky juice. Leaves are opposite, long-stalked, heart-shaped with a wide basal sinus, and prominent veins. Flowers are whitish green, star-shaped, borne in clusters on long stalks in the leaf axils. The fruit is a long, smooth, slender green pod that opens along one seam. Seeds are winged, tipped with silky hairs. Control with a 2% glyphosate solution.</p>	

Table IV Common Weeds Listed by the Kentucky Dept. of Agriculture

Common Name, Scientific Name	T	Comments	Picture
<p>Horsenettle <i>Solanum carolinense</i></p>	P	<p>Stems are erect, loosely branched, prickly, 1' - 4' tall. Leaves are alternate, oblong to ovate, coarsely toothed, with straw-colored prickles on the mid-rib and stalks. Flowers are in clusters on prickly stalks on the ends of the branches, with 5 sepals, 5 pale violet petals, and 5 yellowish-orange stamens. Fruit is a smooth, round orange berry with a juicy pulp.</p>	
<p>Horseweed <i>Conyza Canadensis</i></p>	P	<p>Stems are erect, much branched, to wand-like on top, with bristly hairs, 1'-6' tall. Leaves are alternate, crowded, narrow, stalkless at top, smooth or toothed along margins. Flowers are numerous with many small heads with white petals and yellow centers. Seeds are in a capsule that is narrow, yellowish with whitish bristles at the top. Control with a 2% glyphosate solution.</p>	
<p>Jimsonweed <i>Datura stramonium</i></p>	P	<p>Stems erect with widely spreading branches, stout, green or purple. Leaves are alternate, long-stalked, dark green above, unevenly toothed or lobed, emitting a strong odor when crushed. Flowers are large, white to purplish and, tubular, produced singly in the leaf axils, 2" - 5" long. Fruit is a capsule with 4 prickly valves that split open at maturity. Control with a 2% glyphosate solution.</p>	
<p>Mouse Ear Chickweed <i>Cerastium vulgatum</i></p>	P	<p>Spreading, mat-forming perennial with prominently hairy prostrate stems and leaves, resembling Common Chickweed. Leaves are opposite, dull-green, with prominent hairs on upper surface and veins. Flowers usually in clusters of three, with 5 notched petals, May-October. Roots at stem nodes. Control with 2% glyphosate solution.</p>	
<p>Nimblewill <i>Muhlenbergia shreberi</i></p>	G	<p>Warm season perennial, spreads by seeds and spreading stems. Forms dense patches in turf, often 1'+ in diameter. Fibrous roots. Short, glue-green flat leaves up to 2" long. Dormant from mid Fall to mid spring, when brown. Control by using 2% glyphosate solution when active.</p>	

Table IV Common Weeds Listed by the Kentucky Dept. of Agriculture

Common Name, Scientific Name	T	Comments	Picture	
<p>Orchardgrass <i>Dactylis glomerata</i></p>	G	<p>Recommended for use in dairy farm fields, is an invasive weed in turf grasses and homes. Perennial grass that is blue-green in color. Leaves are folded in the bud; clumps; and can tolerate close mowing. Remains green throughout the year; roots very fibrous and dense. Seed head is stiff-branched and occur from late spring through summer. Very competitive with other grasses. . Control by using 2% glyphosate solution.</p>		
<p>Pennsylvania Smartweed <i>Polygonum pensylvanicum</i></p>	P	<p>Stems, ascending, green or reddish, swollen at the leaf joints, plants 1' - 4' tall. Leaves are alternate, narrow to spoon-shaped, with a paper sheath surrounding the stem, 2" - 6" long. Flowers are small, pink, forming a dense spike.</p>		
<p>Pitted Morningglory <i>Ipomoea lacunosa</i></p>	V	<p>Stems trail over the ground or climb, ridged, and purplish in color. Leaves are alternate, heart-shaped with a long point at the tip, smooth margined, and with purplish stalks. Flowers are small, less than 2" long, white or pink, 2-3 clusters on stalks arising from the leaf axils; with 5 sepals, hairy, long and pointed. Fruit is a brown capsule containing dark-brown seeds shaped like an orange wedge. Control with a 2% glyphosate solution</p>		
<p>Poison Ivy, Poison Oak <i>Toxicodendron radicans, T. diversilobum</i></p>	V, S	<p>Both plants have many variations, and may be found either as a single plant, a vine, or may grow into a shrub. Leaf appearance can also vary. Causes a distinct rash in 85% of the people who come in contact with it. Leaves are in groups of three, with poison oak leaves being more lobate than poison ivy leaves. Distinguished from Poison Sumac by number of leaves; sumac has 7-15 leaflets. Stems are smooth. Wear protective clothing and glasses, wash separately immediately after contact. Control with 2% glyphosate solution. Poison can remain active for up to a year after treatment.</p>		
<p>Prickly Sida <i>Sida spinosa</i></p>	P	<p>Stems are erect with widely spreading branches, hairy, 2'-3' tall. Leaves are alternate, narrow to spoon shaped, toothed, on long stalks; a spine like process at the base of each leaf. Flowers are single in the leaf axils, yellow, short-stalked, about 1/2" across. Fruit is brown, ring-shaped, separating into 5 parts at maturity. Control with a 2% glyphosate solution.</p>		

Table IV Common Weeds Listed by the Kentucky Dept. of Agriculture

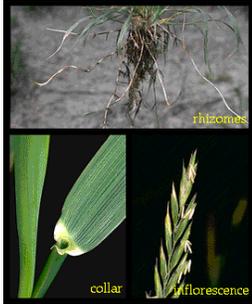
Common Name, Scientific Name	T	Comments	Picture
<p>Purple Deadnettle <i>Lamium purpureum</i></p>	P	<p>Leaves are opposite, palmately veined, spoon-shaped to heart-shaped with bluntly toothed margins, stalkless; lower leaves similar but on long stalks. The stem is square. Flowers are in whorls in the upper leaf axils, petals are purplish-white, tubular and 2 lipped. The fruit is a small, brownish nut, sharply 3 angled. Control with a 2% glyphosate solution.</p>	
<p>Purslane <i>Portulaca oleracea</i></p>	P	<p>More than 120 species known. Common Purslane is edible, with a sweet, yet acid-like flavor. Often used medicinally. A prostrate, succulent annual that often forms a dense mat. Reddish stems originate from a central rooting point, radiating out like spokes of a wheel. Stems vary in length, up to 12". Leaves are stalkless, oval, smooth, succulent, shiny, and vary from 12" to 2" in length. Small (3/8") flowers with 5 petals, yellow color, borne singly in leaf axils and open only in sunshine. Single plant may produce 240,000 seeds, active after 5-40 years. Fleshy stems can root for several days after cutting. Control with 2% glyphosate solution.</p>	
<p>Quackgrass <i>Agropyron repens</i></p>	G	<p>A perennial that has rhizomes that are easily spread when chopped up. Occurs mostly in the upper 6" of soil, rhizomes may reach a depth of 8" and spread laterally 3' to 5' from plant. Leaf blades are whorled around a collar that attaches to the stem. Can quickly invade home gardens, and is hard to eradicate. Grows from underground rhizomes to 1' - 4' tall. Had thin, flat, bright ashy green leaf blades. Seed spike grows from 3" - 8" long and remain viable for 3-5 years. Control with 2% glyphosate solution.</p>	
<p>Red Sorrel <i>Rumex acetosella</i></p>	P	<p>See Dock, Sheep Sorrel, KY Plant Council Lesser Threat, page 22.</p>	
<p>Roughstalk Bluegrass <i>Poa trivialis</i></p>	G	<p>Perennial bluegrass with stolons that may reach 1' - 3' tall. Plants go dormant through the summer; carry out life cycle during winter months. Stems covered with many small hairs with brown to purple bands surrounding nodes. Leaves folded in bud, have boat-shaped tip. Seed head typical of other bluegrass varieties. Fibrous roots, spreads above ground. Control with 2% glyphosate solution.</p>	

Table IV Common Weeds Listed by the Kentucky Dept. of Agriculture

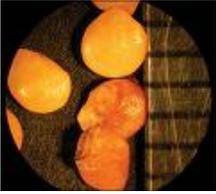
Common Name, Scientific Name	T	Comments	Picture	
<p>Shepherdspurse <i>Capsella bursa-pastoris</i></p>	P	<p>Leaves are in a basal rosette, variously toothed or lobed; stem leaves clasping with pointed lobes, 2" - 4" long. Flowers are at the ends of the branches, small, with 4 sepals and 4 white petals. Fruit is flat, heart-shaped or triangular, 2 parted, about 1/4" long. Control with a 2% glyphosate solution.</p>		
<p>Sibara <i>Sibara virginica</i></p>	P	<p>Leaves are deeply divided into narrow segments with a small protrusion near the base of the leaflet. Flowers are small with 4 sepals and 4 whitish-pink petals. The fruit is about 1" long, stiff, broad, flattened, and on stout ascending stalks. Control with a 2% glyphosate solution.</p>		
<p>Smooth Groundcherry <i>Physalis subglabrata</i></p>	P	<p>Stems are hairy when young, smooth when older, erect, slightly branching, and 1' - 3' tall. Leaves are alternate, thin, long-stalked, ovate to narrow, coarsely toothed, 2" - 3" long. Flowers are produced in the leaf axils, solitary, wheel-shaped, drooping, with 5 dull yellow petals with purplish spots in the center. The fruit is a round purplish berry enclosed by an inflated calyx. Control with a 2% glyphosate solution.</p>		
<p>Speedwell <i>Veronica officinalis</i></p>	P	<p>Medicinal plant. Great number of Veronica species, native, introduced, and cultivated. Perennial, with hairy stems that trail along the ground forming dense mats. Formerly considered to have been introduced, it may be native. Leaves are opposite; can reach 2" in length, elliptical, toothed margins. Flowers are irregular in shape up to 1/8" wide. Violet or lavender in color, blooms first appear in spring and continue to mid-summer. Control with 2% glyphosate solution.</p>		
<p>Spotted Spurge <i>Euphorbia maculate</i></p>	P	<p>Annual species that is native to the eastern US. May become at weed in turf or ornamental beds. Low-growing plant that forms a dense mat. Leaves are usually marked with a red spot midway down the center leaf vein. Each leaf has a short stem with a separate scale-like appendage at base. Exudes a milky juice when broken. Plant has a central taproot system that may reach more than 2' into the soil. Tiny, pinkish flowers consist of only stamens and pistils and grouped into flower-like cups. Difficult to control once established, control with 2% glyphosate solution.</p>		

Table IV Common Weeds Listed by the Kentucky Dept. of Agriculture

Common Name, Scientific Name	T	Comments	Picture
Tall Ironweed <i>Veronia altissima</i>	P	Stems are stout, loosely branched at the top, and 3' - 6' tall. Leaves are alternate, loosely spreading, narrow, sharply toothed, rough on the surface below. Flower heads are small, made up of many deep purple tubular flowers, 3/8" wide, that bloom from the center outward. Fruits are ribbed "crowned with a tuft of light brown hairs. Control with a 2% glyphosate solution.	
Tall Morning Glory <i>Ipomoea Purpurea</i>	V	Stems are climbing or low to the ground. Leaves alternate, long-stalked, hairy, and broadly heart-shaped with a pointed tip. Flowers are on long stalks from the leaf axils, with petals ranging in color from white to red, to purple, 2" or more long; the sepals are broad, sharp pointed and hairy at the base. The fruit is a brown capsule, containing brownish-black seed-shaped like an orange wedge. Control with a 2% glyphosate solution.	
Trumpet Creeper <i>Campsis radicans</i>	V	Stems are smooth, woody, vining, 20' - 40' long. Leaves are opposite, pinnate with 5-11 ovate leaflets, sharp-pointed and toothed. Flowers are showy 2 1/2" long, reddish orange, tubular with 5 spreading lobes. The fruits are cigar-shaped with 2 longitudinal ridges that split open along 1 seam. Also considered to be a native wildflower, but is known as Trumpet Vine, same genus and species. Control with a 2% glyphosate solution.	
Velvet Leaf <i>Abutilon theophrasti</i>	P	Stems are stout, slightly branched, velvety in texture, and up to 6' tall. Leaves are large, heart-shaped, long-stalked, and velvety. Flowers are solitary, yellow-orange, in the leaf axils, 3/4" wide. Fruit is in a ring of 10-17 beaked segments splitting apart at maturity. Control with a 2% glyphosate solution.	
Vernal Whitlow-grass <i>Draba verna</i>	G	Leaves are basal in a rosette, narrow, covered with hairs and sometimes purple-tinged. Flowers are at the top of the stems, small, with 4 sepals and 4 deeply clefted petals. The fruit is narrowly elliptic, and rounded out equally on both ends, about 1/2" long. Control with a 2% glyphosate solution.	

Table IV Common Weeds Listed by the Kentucky Dept. of Agriculture

Common Name, Scientific Name	T	Comments	Picture	
<p>Wild Garlic, Wild Onion</p> <p><i>Allium vineale, A. canadense</i></p>	P	<p>Closely related and hard to distinguish from one another from leaf growth. Wild onion is native to North America, Wild Garlic is not. Plants are edible but have pronounced garlic/onion flavor. Both produce bulblets, (mini-plants) instead of seed, but small flowers can produce seed, usually seen in mid-winter. Wild onion leaves occur from the base of the plant and tend to be flat. Wild garlic leaves are hollow and tend to form higher on the stem. Difficult to control by hand pulling, digging. Control with 2% glyphosate solution, protecting nearby plants.</p>		
<p>Wild violet</p> <p><i>Viola pradicola</i></p>	P	<p>Winter perennial, growing 2" - 5" tall. Has a tap root or fibrous root system. Leaves can vary, but are usually heart-shaped on long stems, with scalloped to shallow rounded margins. Flowers range from deep purple to white, lavender, or blue, and appear from March to June. Flowers are pansy-like with 3 lower petals and two lateral petals on long single flower stalks. Several closely related violets are native wildflowers. Control with a 2% glyphosate solution.</p>		
<p>Yellow nutsedge</p> <p><i>Cyperus esculentus</i></p>	P	<p>Stems are erect, triangular shaped, and yellow-green in color. Leaves are also yellow-green, wide (1/3" - 1/2"), with a thick mid-vein and waxy covering. Shallow fibrous root system often produces many nut-like tubers. Each tuber can germinate and produce new plants. Each new plant can produce rhizomes which can give rise to additional plants. Warm season perennial. Above ground foliage does not survive winters. Heavy infestations usually become readily apparent in July and August. Control with 2% glyphosate solution when plants are young.</p>		

Key to Type: T = Tree, S = Shrub, P = Flowering Plant, V = Vine, G = Grass, F = Fern

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Other Unwanted Plants

Many cities have developed lists of unwanted species as not being suitable for an urban environment. While this does not usually apply to homeowners who live outside city limits, or in country-side settings, the trees and shrubs listed were selected because they are messy, have a short life-span, are susceptible to disease, highly invasive, or are weak-wooded and often damaged by wind. Some of these trees and shrubs have been listed as an exotic invasive plant by the Kentucky Plant Council, as well. Trees and shrubs on this list may be difficult to buy at local nurseries and tree farms, and may be restricted by subdivision rules as well as the Louisville/Metro Zoning Regulations. The homeowner must remember that the trees and shrubs listed are viewed as undesirable from a human/municipal viewpoint, but may be desirable as offering nutritious food and plentiful cover from a wildlife viewpoint, or may be highly desirable to maintain from the viewpoint of protecting native species.

Key to Type: T = Tree, S = Shrub, P = Flowering Plant, V = Vine, G = Grass, F = Fern

Table V Unwanted Plants Listed by the Louisville/Metro Zoning Commission			
Common Name, Scientific Name	T	Comments	Picture
Almey Crabapple <i>Malus</i>	T	Many of the old varieties of crabapples are susceptible to disease and insects. There are many new clones which are highly resistant to the four major crabapple diseases.	
Autumn Olive <i>Elaeagnus umbellate</i>	S	See Autumn Olive under Plants Listed as a Significant Threat, page 4	
Box Elder <i>Acer negundo</i>	T	This tree is of poor quality and weak wooded with frequent wind damage. The plant is disease and insect susceptible, and has a particular insect known to destroy the trunk, the Box Elder Bug. Spreads by winged seeds.	
Callery or Bradford Pear <i>Pyrus calleryana</i>	T	This tree exhibits severe structural problems with main trunks splitting apart and has some serious disease problems. Over planting in some areas has increased pollen levels during the late spring, when the trees are in bloom, increasing the misery of seasonal allergy sufferers.	
Cherry Plum <i>Prunus cerasifera</i>	T	This tree has a serious disease problem and is pollution sensitive. Many cultivars have been developed, some favoring purplish blossoms. The fruit is edible, with some varieties sweet, while others are sour.	
Chinese Holly <i>Ilex cornuta</i>	S, T	The plant is susceptible to severe winter damage or death and is not hardy in the Louisville/Metro zone. Leaves resemble an American holly, but the central spine points downward while other spines point upward, giving the leaf a horned appearance.	
Common Apple <i>Malus pumila</i>	T	The tree is weedy and its fruit is too large to warrant the use of the tree to meet ordinance requirements. The Zoning Commission does not want these trees planted along thoroughfares, sidewalks, parking lots, etc.	

Table V Unwanted Plants Listed by the Louisville/Metro Zoning Commission

Common Name, Scientific Name	T	Comments	Picture
<p>Common Buckthorn <i>Rhamnus cathartica</i></p>	S, T	<p>This species is listed by some states as a highly invasive exotic plant. The fruit is especially messy for an urban environment.</p>	
<p>Common Honey Locust <i>Gleditsia triacanthos</i></p>	T	<p>This tree is too thorny for use in an urban environment and especially for meeting ordinance requirements. Blossoms have a pleasant odor, but tree sheds leaves for several months in the fall, and has long, messy seed pods, making cleanup difficult.</p>	
<p>Common Pear <i>Pyrus communis</i></p>	T	<p>Tree is extremely susceptible to fireblight and its large fruit makes it unsuitable for the urban environment.</p>	
<p>Coroaria Crabapple <i>Malus coroaria</i></p>	T	<p>Many of the old varieties of crabapples are susceptible to disease and insects. There are many new clones which are highly resistant to the four major crabapple diseases.</p>	
<p>Dorothea Crabapple <i>Malus dorothea</i></p>	T	<p>Many of the old varieties of crabapples are susceptible to disease and insects. There are many new clones which are highly resistant to the four major crabapple diseases.</p>	
<p>Dwarf Flowering Almond <i>Prunus glandulosa</i></p>	S, T	<p>The open habit of this plant does not meet code.</p>	
<p>Eastern Cottonwood <i>Populus deltoids</i></p>	T	<p>All of the listed poplars are weak wooded and their roots will clog drain tiles, storm, and sanitary sewers.</p>	

Table V Unwanted Plants Listed by the Louisville/Metro Zoning Commission

Common Name, Scientific Name	T	Comments	Picture
<p>Eley Crabapple <i>Malus eley</i></p>	T	<p>Many of the old varieties of crabapples are susceptible to disease and insects. There are many new clones which are highly resistant to the four major crabapple diseases.</p>	
<p>European White Birch <i>Betula pendula</i></p>	T	<p>This tree is highly susceptible to leaf miner and Bronze Birch Borer. The tree is also intolerant of urban stress and is short-lived.</p>	
<p>Fraser Photinia or Red Tip <i>Photinia x fraseri</i></p>	S	<p>This plant is not hardy in this region.</p>	
<p>Ginkgo, (female) <i>Ginkgo bilboa</i></p>	T	<p>The female of this species is unacceptable because of its fruit. The fleshy seed is extremely messy and malodorous.</p>	
<p>Glossy Buckthorn <i>Rhamnus frangula</i></p>	S	<p>This shrub experiences serious disease problems and can be a highly invasive exotic. It also has problems surviving in areas with heavy traffic, because of soil compaction.</p>	
<p>Golden Chain Tree <i>Laburnum x watereri</i></p>	T	<p>This plant is not reliably hardy in this zone. Seeds are poisonous.</p>	

Table V Unwanted Plants Listed by the Louisville/Metro Zoning Commission

Common Name, Scientific Name	T	Comments	Picture
Honeysuckle <i>Lonicera maackii</i> , <i>L. morrowii</i> , <i>L. tatarica</i>	S	See Bush Honeysuckles, Japanese Honeysuckle under Plants Listed as a Severe Threats, page 4.	
Hopa Crabapple <i>Malus hopa</i>	T	Many of the old varieties of crabapples are susceptible to disease and insects. There are many new clones which are highly resistant to the four major crabapple diseases. Trunk, leaves, flowers are all tinged red/pink.	
Ioensis Crabapple <i>Malus ioensis</i>	T	Many of the old varieties of crabapples are susceptible to disease and insects. There are many new clones which are highly resistant to the four major crabapple diseases.	
Japanese Knotweed <i>Polygonum cuspidatum</i>	P	See Japanese Knotweed under Plants Listed as a Severe Threat, page 6.	
Kentucky Coffee Tree, (female) <i>Gymnocladus dioica</i>	T	This tree produces six inch long, leathery pods with a sticky pulp which produce a messy condition unacceptable for urban situations. Relative of the Honey Locust, but without thorns.	
Lombardy Poplar <i>Populus</i>	T	All of the listed poplars are weak wooded and their roots will clog drain tiles, storm, and sanitary sewers.	
Mimosa Tree <i>Albizia julibrissin</i>	T	See Mimosa under Plants Listed as a Significant Threat, page 15.	

Table V Unwanted Plants Listed by the Louisville/Metro Zoning Commission

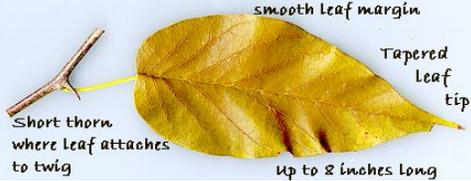
Common Name, Scientific Name	T	Comments	Picture
<p>Mountain Ash <i>Sorbus</i></p>	T	<p>These trees are susceptible to a host of diseases and pests. Not recommended as a street tree because it is not urban tolerant and it has ½" fleshy seed pods. Best used in open lawn areas for private use.</p>	
<p>Multiflora Rose <i>Rosa multiflora</i></p>	S	<p>See Multiflora Rose under Plants Listed as a Severe Threat, page 7.</p>	
<p>Oriental Photinia <i>Photinia villosa</i></p>	P	<p>The plant has a problem with disease, which limits its use to meet landscaping requirements.</p>	
<p>Osage Orange, (female) <i>Maclura promifera</i></p>	T	<p>The large fruit, 3" - 4" in diameter, makes this plant unacceptable to meet code.</p>	
<p>Paper Birch <i>Betula papyrifera</i></p>	T	<p>Susceptible to Bronze Birch Borer. Life expectancy in a site with some stress, like a street tree, is short in urban areas.</p>	
<p>Peach <i>Prunus persica</i></p>	T	<p>This tree has a serious disease problem and is pollution sensitive. Also, the fruit is messy.</p>	

Table V Unwanted Plants Listed by the Louisville/Metro Zoning Commission

Common Name, Scientific Name	T	Comments	Picture
<p>Persimmon, (female) <i>Diospyros virginiana</i></p>	T	<p>The fleshy fruit makes this a messy tree for pedestrian and parking environments.</p>	
<p>Princess Tree <i>Paulownia tomentosa</i></p>		<p>See Chinese Empress Tree under Plants Listed as a Significant Threat, page 11.</p>	
<p>Privets, (all) <i>Ligustrum</i></p>		<p>See Privet under Plants Listed as a Severe Threat, page 8</p>	
<p>Quaking Aspen <i>Populus</i></p>	T	<p>All of the listed poplars are weak wooded and their roots will clog drain tiles, storm, and sanitary sewers</p>	
<p>Radiant Crabapple <i>Malus</i></p>	T	<p>Many of the old varieties of crabapples are susceptible to disease and insects. There are many new clones which are highly resistant to the four major crabapple diseases.</p>	
<p>Red Elm <i>Ulmus fulva</i></p>	T	<p>These trees are of poor quality and week wooded with frequent wind damage. The plant has disease and insect problems as well.</p>	

Table V Unwanted Plants Listed by the Louisville/Metro Zoning Commission

Common Name, Scientific Name	T	Comments	Picture
<p>Red Silver Crabapple <i>Malus</i></p>	T	<p>Many of the old varieties of crabapples are susceptible to disease and insects. There are many new clones which are highly resistant to the four major crabapple diseases. Susceptible to Apple Scale.</p>	
<p>Rose of Sharon <i>Hibiscus syriacus</i></p>	S	<p>This exotic species seeds itself aggressively; therefore, it is unacceptable to meet long-term landscaping needs.</p>	
<p>Russian Olive <i>Elaeagnus angustifolia</i></p>	S	<p>The plant is a highly invasive exotic, (although not listed by the KY Plant Council), and is very short-lived. Closely related to Autumn Olive.</p>	
<p>Scarlet Firethorn <i>Pyracantha coccinea</i></p>	S	<p>This species fruit is very susceptible to scab, (disease). Superior clones of Pyracantha are available and should be used instead of the species.</p>	
<p>Siberian Elm <i>Ulmus pumila</i></p>	T	<p>These trees are of poor quality and weak wooded with frequent wind damage. The plant has disease and insect problems as well.</p>	

Table V Unwanted Plants Listed by the Louisville/Metro Zoning Commission

Common Name, Scientific Name	T	Comments	Picture
<p>Smoothleaf Elm</p> <p><i>Ulmus carpiniflora</i></p>	T	<p>These trees are of poor quality and week wooded with frequent wind damage. The plant has disease and insect problems as well.</p>	
<p>Spreading Euonymus</p> <p><i>Euonymus kiautschovicus</i></p>	S	<p>Susceptible to severe annual winter damage or death.</p>	
<p>Sweet Mockorange</p> <p><i>Philadelphus coronarius</i></p>	S	<p>The open habit of this plant does not meet code.</p>	
<p>Sylvestris Crabapple</p> <p><i>Malus</i></p>	T	<p>Many of the old varieties of crabapples are susceptible to disease and insects. There are many new clones which are highly resistant to the four major crabapple diseases.</p>	
<p>Tree of Heaven</p> <p><i>Ailanthus altissima</i></p>	T	<p>See Tree of Heaven under Plants Listed as a Severe Threat, page 9</p>	
<p>Weeping Willow</p> <p><i>Salix babylonica</i></p>	T	<p>Messy, (always losing small branches), week wooded, susceptible to canker (disease), taps sewer and water lines.</p>	

Table V Unwanted Plants Listed by the Louisville/Metro Zoning Commission

Common Name, Scientific Name	T	Comments	Picture
White Mulberry <i>Malus alba</i>	T	See White Mulberry under Plants Listed as a Significant Threats, page 17	
White Poplar <i>Populus</i>		See White Poplar under Plants Listed as Significant Threats, page 18.	
Winged Euonymus <i>Euonymus alatus</i>		See Winged Euonymus under Plants Listed as a Severe Threat, page 10.	
Winter Creeper Euonymus <i>Euonymus fortunei</i>		See Winter Creeper Euonymus listed under Plants Listed as a Severe Threat, page 10.	

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Toxic Plants

The plants listed here may be toxic to livestock, wildlife, pets, or humans to varying degrees, and have been listed as toxic by the Purdue University Department of Veterinary Medicine. It is not a complete listing of all of the toxic plants that may be found in Kentucky.

Reactions to toxic plants differ between species. For example, catnip, if eaten in large quantities by cats may be toxic to them, causing a severe reaction and even death. Yet, catnip tea is a commercial product sold for human consumption as a "natural", calming, herbal tea. Dried catnip may be also bought commercially for the cat's pleasure. A wise pet owner will try to keep their cat from consuming large quantities of the dried catnip to forestall an adverse pharmacological reaction. Dogs do not appear to be affected by eating catnip, nor do they derive pleasure from ingesting dried catnip.

Many of the toxic plants listed here affect farm animals, mostly grazing animals. While these plants may not be of interest to the average homeowner, if the property abuts grazing land, the property owner should take precautions to destroy and remove the plant. In many cases, wild grazing animals, such as deer, elk, or other berry/seed eaters may exhibit the same symptoms of toxicity as the farm animals. Therefore, the average homeowner should be interested in protecting wildlife from these potentially harmful plants as well, and destroy and remove them from the property.

Toxicity ratings listed here apply to wildlife, farm animals, pets, and humans. The homeowner should be aware that if these plants are growing on their property, they may be liable for any illnesses of humans or animals resulting from ingestion of the leaves, stems, seeds, fruit, or roots of the plant. Homeowners with children should be especially careful to prevent the child from ingesting any part of the toxic plant; homeowners with pets should take the same precautions.

The degree of toxicity is based not only on the amount ingested by the human or animal, but by the relative weight of the animal, as well as the type of the animal. As previously discussed, some plants are toxic only to certain animals, and are relatively non-toxic to others. In addition, if a plant is ingested by a baby or a juvenile animal, it may be highly toxic, but less toxic to an adult human or an adult of the animal species. If only a few berries of a moderately toxic substance is ingested by a toddler, the plant may

cause a severe illness or even fatal reaction, while an adult may eat the same amount and only become moderately ill. Treat these plants with caution. They may usually be controlled with a glyphosate solution, and the plants removed from the site once dead. Wear protective clothing during treatment and removal.

The Louisville Water Company does not assume any liability for the misuse or misidentification of these plants, or for not including a toxic plant that may be located on an individual's property. Please contact your veterinarian, your doctor, the National Poison Control Center, or the Kentucky Department of Agriculture for additional information.

Key to Type: T = Tree, S = Shrub, P = Flowering Plant, V = Vine, G = Grass, F = Fern

Table VI Severely Toxic Plants

Common Name, Scientific Name	T	Comment	Picture
<p>Castorbean <i>Ricinus communis</i></p>	P	<p>Death is likely with consumption of even small amount. All animals may be affected. The seeds are the primary source of the toxin, but the rest of the plant may be slightly toxic. The toxin is ricin, a water-soluble protein. (Humans and horses are most at risk.) Signs may not be seen for 18-24 hours. Animal first shows signs of depression and a mild increase in temperature. Later, gastrointestinal signs including vomiting in humans, profuse diarrhea, (which may be bloody), colic and severe abdominal pain. The affected animal may then go into convulsions and die, generally within 36 hours of consumption. If ingestion noticed, rush pets to veterinary, children and adults to hospital. To prevent, use glyphosate solution to kill existing plants, bag and remove off site. Wear protective clothing and prevent seeds from spreading.</p>	
<p>Cocklebur <i>Xanthium strumarium</i></p>	P	<p>See Common Cocklebur under Table IV, Common Weeds; page 28. A member of the daisy family, the cocklebur affects all animals, although horses and pets are usually not as apt to get into the plant. The seeds and seedlings contain the highest quantity of toxin, but the whole plant can be considered toxic. Seed burs may cause serious internal injuries. Plant causes gastrointestinal irritation, weakness, breathing difficulty, behavioral changes, cardiac abnormalities, death. Several types of toxins in plant including glycoside, carboxyatractyloside and a group of sesquiterpene lactones. Usually seen in late spring and early summer. If animal is seen ingesting, contact veterinarian immediately, and keep quiet until vet arrives. Control with a glyphosate solution, bag, and remove seedlings and burs from area.</p>	

Table VI Severely Toxic Plants

Common Name, Scientific Name	T	Comment	Picture
<p>Easter Lily <i>Lilium longiflorum</i></p>	<p>P</p>	<p>Toxic only to cats. The leaves are primarily toxic, but the stem and flowers may also be toxic. Upon consumption, cats begin to vomit within an hour or so. The cat will be depressed over the next half day, as the toxin affects its kidneys. Within 48-96 hours after consumption, the cat will show signs of clinical kidney failure. Death tends to occur within 5 days. If a cat is seen eating an Easter Lily, contact a vet immediately. If emergency treatment takes place within 6 hours, the chances are good that the cat will recover. Control with a glyphosate solution.</p>	
<p>Jimsonweed <i>Datura stramonium</i></p>	<p>P</p>	<p>Also called Thornapple. See Jimsonweed, Common Weeds, page 32. The plant and seeds are extremely toxic; is often abused as a hallucinogen in humans, and deaths in humans and animals have been reported. All animals, including pets and poultry may be affected. Ingestion causes dilated pupils, agitation, trembling, delirium, may appear to be hallucinating, violent convulsions, coma, and possible death. Animals will avoid eating the plant when possible, even when forage is scarce. For animals, the danger lies primarily in the seed consumption, after treatment by herbicides that may make the plant more palatable. Alkaloids in the plant act on the central nervous system as well as the autonomic nervous system within a few minutes up to several hours. Even the nectar is toxic. Control with glyphosate solution, remove dead plants from site.</p>	
<p>Johnson Grass <i>Sorghum halepense</i></p>	<p>G</p>	<p>See Johnson Grass, Table I, Exotic Plant, Severe Threat, page 6. Affects all animals, especially grazing animals. Cyanide is present in the leaves and stems, and is more toxic if trampled, wilted, herbicide treated or frost damaged, or in young plants. Young shoots are the most dangerous. After ingestion, the symptoms the signs will manifest quickly within an hour. Animals will breathe more rapidly and deeply; become anxious and stressed. Later, trembling, incoordination, attempts to urinate and defecate and collapse is seen, with can precede a violent death due to respiratory/cardiac arrest. Upon first clinical sign, call a vet immediately. There is an antidote, but it must be given at once.</p>	

Table VI Severely Toxic Plants

Common Name, Scientific Name	T	Comment	Picture
<p>Oleander <i>Nerium oleander</i></p>	<p>P</p>	<p>All animals can be affected, and all parts of plant are toxic. Causes gastrointestinal irritation, cardiac abnormalities, and death. Oleander is a shrub or sometimes a small tree. Leaves are lance-shaped, thick and leathery and grow opposite each other. Contains the toxins oleandrin and nerioside, similar to digitalis. Tropical plant often grown indoors or as ornamental. Will be eaten by hungry animals. 30-40 leaves can be fatal to a horse. Clinical signs develop quickly and animal may be found dead. Causes depression, vomiting, and bloody diarrhea, abdominal pain, with irregular or higher/lower heart rate. Extremities may turn cold and mucus membranes pale. Trembling and collapse, followed by death. Do not plant, or keep as a houseplant. Control with glyphosate.</p>	
<p>Redroot Pigweed <i>Amaranthus retroflexus</i></p>	<p>P</p>	<p>Cattle and swine are more likely to be affected, but goats and sheep may also be affected. Leaves, stems, and roots are the most toxic part of the plant. Plant grows to 5' tall, coarse, with red stems, and egg-shaped wavy, alternate leaves. Pigweed contains nephrotoxin that causes kidney failure, soluble oxalates, and can accumulate nitrates. Toxicity can be due to any combination of these toxicoses. 75% mortality rate. Animals must consume significant quantities to be affected, and will usually avoid pigweed if better forage is available. Onset of illness is 3 - 7 days after ingestion. Early signs include weakness, trembling, and incoordination. Progresses to an inability to stand and paralysis, coma, edema of the abdomen and legs, then death. Control with glyphosate, remove dead plants.</p>	
<p>Poison Hemlock <i>Conium maculatum</i></p>	<p>P</p>	<p>See Poison Hemlock under Severe Threat, page 8. All animals may be affected, but grazing animals are more at risk than pets, in spring. Toxic components include volatile alkaloids coniine and gamma-coniine. A lethal dose for a horse is 4-5 pounds of leaves; cattle may be poisoned with 1-2 pounds, sheep with ½ pound or less. Humans are often poisoned thinking the roots are parsnips, the leaves are parsley, and seeds are anise. Animals become nervous, then depressed, heart and respiratory rates slow, extremities become cold. Call vet immediately.</p>	

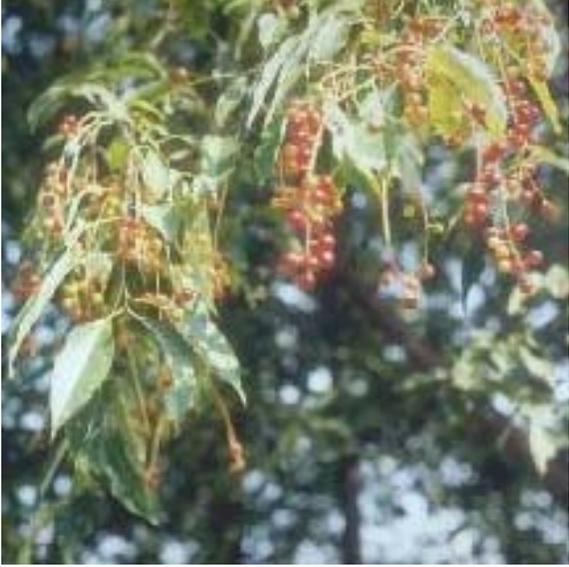
Table VI Severely Toxic Plants

Common Name, Scientific Name	T	Comment	Picture
<p>Red Maple <i>Acer rubrum</i></p>	<p>T</p>	<p>Affects horses only, but death is common. Leaves are the dangerous parts of the plant, especially when fallen, damaged, or wilted. Tree may be native or planted as an ornamental. Bark is a smooth gray color; older bark is dark and broken. Leaves are 3 - 5 lobed, with shallow notches between the lobes. Underside of leaves is white, and turns red in the fall. Buds, twigs, flowers, and petioles are red. Toxin thought to affect red blood cells, causing massive destruction of cells. Ingestion of 3 pounds of leaves is lethal; leaves are palatable. Wilted or dry leaves remain toxic for about a month. Clinical signs develop within 1 - 2 days, and can include depression, labored breathing, increased heart rate, jaundice, dark brown urine, coma, and death. Cut tree and treat stump with glyphosate.</p>	
<p>Ragwort <i>Senecio sp.</i></p>	<p>P</p>	<p>Very toxic fresh, or as a dried plant. Affects all grazing animals, but horses and cattle are particularly susceptible. Young, growing animals are more susceptible and fetuses may be affected <i>in utero</i>. All above ground parts are toxic. Symptoms include weight loss, poor hair coat, anorexia, behavioral changes, sunscald, gradual loss of liver function, liver failure, jaundice, death. Several species of Ragworts, all about 1' tall. Top of the plants have clusters of yellow, composite, daisy-like flowers with yellow ray petals. Basal leaves are spoon-shaped; stem leaves are alternate and pinnately cut into narrow segments. Blooms in early spring. Chronic form of poisoning more common. In horses, symptoms may not exhibit for several months after eating infested hay. Control with Glyphosate solution, remove dead plants from site.</p>	

Table VI Severely Toxic Plants

Common Name, Scientific Name	T	Comment	Picture
<p>Water Hemlock</p> <p><i>Cicuta maculata</i></p>	<p>P</p>	<p>Also called Spotted Water Hemlock, Spotted Cowbane. All animals can be affected, cattle are at higher risk. Roots contain highest concentration of toxin, but all parts are toxic. Symptoms include nervousness, breathing difficulties, muscle tremors, collapse, convulsions, and death. Up to 7' tall, from a cluster of 2 - 8 fleshy or tuberous roots. Stems are smooth, purple striped or mottled, hollow except at junction of the root and stem. Leaves are alternate, fronded, small white flowers may be found in flat-topped clusters. One of the most toxic plants in the US. Humans have been killed after one or two bites of "parsnip"-like root. Animals may be poisoned if water hemlock is plowed under and root exposed. Toxicity decreases through season, roots are always toxic. Animals have been poisoned by drinking water that has been contaminated with trampled roots. 8 ounces will kill a horse. Signs develop in 10-15 minutes, syndrome very violent within 30 minutes of the onset of the symptoms. Control with glyphosate and remove dead plants and roots. Wear protective clothing.</p>	
<p>White Snakeroot</p> <p><i>Eupatorium rugosum</i></p>	<p>P</p>	<p>If available, plant will be eaten in late summer and fall, and is often lethal. Affects cattle, horse, goat, sheep, swine, nursing animals and humans at risk because toxins are passed in the milk. Leaves, stems, and possibly flowers are toxic, roots less so. Symptoms include labored or shallow breathing, trembling, sweating, depression, stiff gait, heart failure, jaundice, toxic milk, and death, which may be sudden. Death occurs from 1 day - 3 weeks, horses typically succumb in 1 - 3 days. Toxic dose is 1% - 10% of total body weight. Effects are cumulative. Humans who drink raw milk from affected animals can be poisoned, sometimes fatally. (Called Milk Fever, killed Nancy Hanks Lincoln.) Plant grows from fibrous matted roots as a smooth, erect, perennial herb, 1' - 3' tall, with opposite, oval, pointed leaves with sharply toothed edges. Upper surfaces of the leaves are dull, under part is shiny with 3 prominent main veins. Small white flowers in compound clusters. Control with glyphosate and immediately remove dead plants. Do not allow animals to feed on sprayed plants.</p>	

Table VI Severely Toxic Plants

Common Name, Scientific Name	T	Comment	Picture
<p>Wild Black Cherry <i>Prunus serotina</i></p>	<p>S, T</p>	<p>All animals may be affected, especially cattle, sheep, goats, deer; dogs, cats, and pigs; horses are not as at risk. Birds affected. Damaged leaves pose the greatest risk, but all parts are potentially toxic. Symptoms include anxiety, breathing problems, staggering, convulsions, collapse, death, which may be sudden. Bark of young branches and twigs is scaly and brown with prominent cross-marks. Leaves are alternate, simple, lance-like, leathery in texture, and with finely toothed margins. Flowers are showy, fragrant, and white, hang in drooping clusters and have fruit that are dark-red to black. Contains cyanide that will release when leaves are damaged. As little as 2 ounces of damaged leaves can cause toxicity. If an affected animal is alive 2-3 hours after ingestion, it will likely live. Cut down shrubs and trees, treat stumps with glyphosate solution, and remove damaged leaves from site immediately. Fruit is safe for consumption. Wear protective clothing.</p>	
<p>Yew, English or Japanese <i>Taxus baccata, T. cuspidata</i></p>	<p>S</p>	<p>Affects all animals. Several species of yew are planted as ornamental shrubs or hedges. Woody perennials with flat ½" - 1" long evergreen leaves, lighter green on the underside and broader than pine needles. "Berry" is grape-sized, juicy, with a hole in the end that makes it look cup-like. English Yew has red berries, Japanese Yew has orange berries. Sudden death is a typical sign; occasionally the owner is forewarned by the animal's breathing problems, trembling, weakness, heart problems, stomach upset. One mouthful will kill a horse or a cow within 5 minutes. Many animals are poisoned accidentally by eating trimmings. Infrequent reports of dogs eating yew resulted in gastroenteritis, seizures, and aggressive behavior. As little as 0.1% - 0.5% per body weight is lethal. Never allow Yew plants around livestock or birds. Although frequently used in ornamental gardens, and not usually a hazard to pets, but birds may be affected. "Berries" may be safe to eat, but plant portions are deadly.</p>	

Key to Type: T = Tree, S = Shrub, P = Flowering Plant, V = Vine, G = Grass, F = Fern

¹ Glyphosate is recommended for use by the US EPA because in 10 days, it quickly degrades into relatively harmless substances. Glyphosate products are sold under a variety of brand names. Read the label carefully to determine the percentage of glyphosate in solution, and follow all recommendations for its mixing and use.

Plants that are moderately toxic are listed in Table VII, Moderately Toxic Plants. Children, pets, livestock, or birds may ingest these commonly available plants, but usually don't eat enough to cause serious problems or death. The risk increases with small children, hungry, or bored animals in close proximity to these plants, or when other, more palatable forage is not available.

Key to Type: T = Tree, S = Shrub, P = Flowering Plant, V = Vine, G = Grass, F = Fern

Table VII Moderately Toxic Plants			
Common Name, Scientific Name	T	Comments	Picture
<p>Azalea, Rhododendron</p> <p><i>Rhododendron ssp.</i></p>	S	<p>Rhododendrons and some azaleas grow wild and can cause significant poisoning problems to wildlife, livestock, and pets. All parts of the plants are toxic, especially the leaves. Symptoms include stomach irritation, abdominal pain, abnormal heart rate and rhythm, convulsions, coma, and death. Has been used by people to commit suicide. Animals may recover, depending on amount ingested, but it usually requires 0.2% body weight for toxic signs to appear. Shrubs have a tough, glossy, smooth-margined, evergreen leaf. Large showy flowers are in terminal clusters. Often used as an ornamental shrub. Pets do not normally eat the leaves. Nectar is toxic, so be careful when planning the placement of beehives.</p>	
<p>Black Locust</p> <p><i>Robinia pseudo-acacia</i></p>	T	<p>Horses are particularly at risk, but all animals may be affected. Wilted leaves, young shoots, pods, seeds, and inner bark are toxic. Symptoms include depression, poor appetite, weakness, paralysis, abdominal pain, diarrhea, and abnormalities of the heart rate or rhythm, and death with high ingestion. Usually manifests within one hour after consumption. Call vet immediately. Mid-size tree with rough bark usually has two short spines at the base of the leaf frond. Leaves are alternate, produces long seed pod. Fragrant flowers are creamy white, arranged in long drooping clusters. Cut trees if around horse pastures, mow and treat seedlings with glyphosate. Remove plants when dead. Do not leave dead branches in field.</p>	
<p>Black Nightshade</p> <p><i>Solanum nigrum</i></p>	P	<p>See Bitter Nightshade, Exotic Plant, Lesser Threat, page 19. Also called Carolina Horsenettle, Bull Nettle, Bitter Nightshade, and Climbing Bittersweet. Plant is unpalatable, so most animals will not ingest enough to have a toxic reaction. Low-branching annual, 1' - 2' tall, triangular stems that bear oval, thin-textured, alternate leaves. Berry fruit is green, and then ripens to purplish-black. Bitter nightshade has upper stems that climb. Symptoms include gastrointestinal irritation and/or effects on the central nervous system. Pets may eat berries and be poisoned. Death has occurred in humans who have abused the plant. Control with glyphosate, prior to fruit formation. Remove dead plants.</p>	

Table VII Moderately Toxic Plants

Common Name, Scientific Name	T	Comments	Picture
<p>Black Walnut <i>Juglans nigra</i></p>	T	<p>Moderately toxic, depending on length of exposure. Affects horses, dogs, possibly other animals. Symptoms include laminitis in horses, breathing problems, gastroenteritis in dogs and horses. Large forest trees planted as an ornamental. Leaves are alternate, fronded, with 13-23 pointed leaves. The fruit is a very rough nut enclosed in a husk 2" - 4" in diameter. Horses are most often affected. When horses are bedded on shavings with 20% or greater of tree bark, clinical signs of laminitis are noted within 12 - 18 hours of contact. Horses in pasture may show mild respiratory symptoms. Dogs may eat husks, causing stomach upset and diarrhea. Walnuts are lethal to earthworms. Limit access to pastures with trees for horses.</p>	
<p>Brackenfern <i>Pteridium aquilinum</i></p>	F	<p>Affects any grazing animal. All parts of the plant are poisonous, especially the roots. Symptoms include weight loss, weakness, gait abnormalities, abnormal heart rate and/or rhythm, inability to rise, and death. Fronds of this fern rise 1' - 3' tall from a thick, brown or black, horizontal rootstock. Each frond divides into three main parts, and each of these are subdivided. Picture is of one subdivided frond. Edges of fronds usually turn under. Late in summer, spores may be found along the lower edges of the leaflets. Poisoning is usually in late summer. Not palatable, but grazing animals will eat it if no other forage is available. Control with glyphosate solution, remove dead plants from site.</p>	
<p>Buckeye <i>Aesculus glabra, A. hippocastanum</i></p>	T	<p>Also called Horse Chestnut. All animals may be affected, especially grazing animals and those consuming the nectar. Buds, nuts, leaves, bark, seedlings, and nectar are poisonous. Symptoms include gastrointestinal irritation, excessive salivation, staggering, trembling, breathing difficulty, dilated pupils, collapse, paralysis, coma, and death. Medium sized tree with glistening buds in Spring. Has opposite leaves composed of five leaflets in a finger-like arrangement. Prickly fruit contains 1-3 nut-like seeds, glossy and leather brown with a pale scar. Among the first to leaf out in the spring, and hungry animals may eat this if no other forage is available. Provide adequate forage to prevent hunger. May remove tree, mow seedlings and treat stems with a glyphosate solution. Remove "nuts" from area.</p>	

Table VII Moderately Toxic Plants

Common Name, Scientific Name	T	Comments	Picture
<p>Dwarf Larkspur <i>Delphinium tricorne</i></p>	P	<p>Also called Stagger Weed, Poison Weed. Primarily affects cattle, but can also affect other grazing animals. All parts of the plants are poisonous, especially seeds and young leaves. Symptoms include nervousness, incoordination, staggering, salivating, bloating, abnormal heart beat, breathing difficulty, paralysis, convulsion, death. Occurs within a few hours of ingestion. Short annual or perennial herb $\frac{1}{2}$' - 4' high, bear alternate, deeply lobed, "crowfoot" leaves, and elongated clusters of spurred white, blue, or purple flowers. Roots grow in tuberous clumps. Plant is palatable. In cattle $\frac{1}{4}$ pound per 100 pounds of body weight may be lethal. Call vet immediately if symptoms noted. Control with glyphosate, allow plant to die, remove dead plants from site.</p>	
<p>Green Falsehellebore <i>Veratrum woodii</i></p>	P	<p>Also called White Hellebore, Indian Poke. Lily family. Primarily affects sheep, but chickens and cattle may also be a risk. All parts of the plant are poisonous, especially the roots. Symptoms include gastrointestinal irritation, salivating, weakness, trembling, heart problems, and breathing difficulties. Birth defects frequent. Perennial has stout, erect, unbranched, 1' - 8' tall stem arising from short, thick rootstock. Clusters of broad, alternate leaves that resembles cabbage leaves, parallel veined, pleated. Green to greenish white flowers in large terminal clusters. Cut or mow the plant, remove from site, treat stump with glyphosate.</p>	
<p>Horsetail <i>Equisetum arvense, E. hyemale</i></p>	P	<p>Also called Scouring Rush. Toxicity is high for horses, moderate for other species. All parts of plant are poisonous, both fresh and dried. Symptoms include weight loss, weakness, gait abnormalities, abnormal heart rate and/or rhythm, inability to rise, death. Two type of shoots 1' - 3' tall merger from horsetail's underground rootstock. Both types are round, hollow, stiff, and jointed. One type of shoot is tan, appears in early spring, and forms a cone-shaped structure. This dies and a green, sterile shoot bears whorls of pine-needle-like branches and looks like a horse's tail. Scouringrush sends up long, tapering cone-like shoots 1' - 6' tall that terminates into a spore producing cone. Control by cutting and treating stem with glyphosate. Remove plant from site. Picture is of Scouring Rush, but stem resembles that of horsetail.</p>	

Table VII Moderately Toxic Plants

Common Name, Scientific Name	T	Comments	Picture
<p>Lupine <i>Lupinus polyphyllus,</i></p>	P	<p>Also called Bluebonnet, Quaker-bonnets. Different species of Lupine have different toxicities. Sheep are primarily affected, but all animals are at risk. All parts of the plant are poisonous, especially pods with seeds. Symptoms include breathing problems, behavioral changes, trembling, birth defects, coma, and death.</p> <p>Perennials grown in gardens. Several stems often grow from one creeping root; reach 12" - 30" in height. Leaves are alternate and palmate, with 7 - 11 spear-tips, softly hairy segments. Elongate spikes of blue, purple, white, magenta, or bi-colored pea-like flowers in early summer are followed by 1" - 2" fuzzy pea-like pods. Control with glyphosate solution.</p>	
<p>Milkweed <i>Asclepias spp.</i></p>	P	<p>See Common Milkweed, Common Weed, page 28. Unpalatable, death not likely unless large quantities consumed. All animals may be affected. Sheep are most at risk, but other grazing animals and pets are also at risk. The stems, leaves, and roots of the plant are poisonous. Symptoms include gastrointestinal irritation, incoordination, tremors, heart problems, respiratory difficulty, and death.</p>	
<p>Mustard <i>Brassica spp., Thlaspi spp., Lepidium spp.</i></p>	P	<p>See also Fieldcress, page 22, and Yellow Rocket, page 25. Most wild and cultivated members of the mustard family are toxic if eaten in large quantities. Wild species include Black Mustard, Tansy Mustard, Peppergrass, and Pennycress. Cultivated species include Cabbage, Rape, Broccoli, Turnip, Rutabaga, Horseradish, and Radish. All members have a pungent, sulfurous odor or taste. Animals affected include cattle, horses, sheep, and poultry. All parts of the plants are poisonous, especially the seeds. Symptoms include oral and gastrointestinal irritation. Plants are not palatable and will be ignored if other food is available. Other symptoms of increased toxicity include head shaking, salivating, colic, abdominal pain, and vomiting. Control with glyphosate solution, prior to the formation of seeds.</p>	
<p>Oats <i>Avena sativa</i></p>	G	<p>Despite being used as a feed for many species, oats can accumulate excessive amounts of nitrates in the field, especially when heavily fertilized. Oats can induce a photosensitivity in animals, causing sunburn. Moldy or smutty oats can cause paralysis, convulsions, and death. All parts of the plants may be poisonous to grazing animals and poultry. Prevention of illness can be achieved by careful fertilization. Throw away moldy or smutty oats. Remove oat straw from sick animals.</p>	

Table VII Moderately Toxic Plants

Common Name, Scientific Name	T	Comments	Picture
<p>Red Oak <i>Quercus rubra</i></p>	T	<p>All animals may be potentially affected, but the primary risk is to cattle. Fall buds, young shoots, sprouts, and acorns are the dangerous parts of the plant. Symptoms include poor appetite, weight loss, diarrhea or constipation, increased drinking, increased urination, edema, and death is possible. Leaves turn brown but hang onto tree during winter. Large tree of well-drained woodlands, parks, and home plantings, with broad bladed leaves, with deep lobes ending in bristle tips. Cattle younger than 2 years of age succumb to oak toxicosis more than older animals. Sheep and deer are also at risk. Pets rarely consume quantities to do harm. Most dangerous in spring when little forage is available; fall is another risk period when leaves and acorns are on the ground and forage is limited. Manage forage and provide plenty of food to animals at risk.</p>	
<p>Tall Fescue <i>Restuca arundinacea</i></p>	G	<p>Often cultivated in wet pastures for forage or turf, this is a 3' - 4' tall clump grass with medium wide leaves that are rough ribbed on top. Heads are open and many branched. Toxicity is the result of a fungus, passed in the seed. Affects horses, cattle, possibly other grazing animals. Dangerous parts of the plant are the seed head, stem, and leaf sheath. Symptoms include a wide host of birth problems in mares, and a wide variety of ailments in cattle, (summer slump, fescue foot, abdominal fat necrosis). May accumulate excessive nitrates and cause nitrate poisoning. Control with glyphosate.</p>	
<p>Tobacco <i>Nicotina ssp.</i></p>	P	<p>All animals may be affected by this plant, but pets that are in contact with tobacco products and pigs allowed to forage on harvested tobacco fields are at greatest risk. Humans may also be affected if harvesting the plant. Leaves are the dangerous parts of the plant. Symptoms include gastrointestinal irritation, trembling, staggering, weakness, breathing problems, heart problems, collapse, birth defects, and death. Rarely is a lethal dose ingested. Control with glyphosate.</p>	
<p>Yellow Sweet Clover, White Sweet Clover <i>Melilotus officinalis, M. alba</i></p>	P	<p>See White Sweet Clover, Yellow Sweet Clover, Severe Threat, pages 9 and 10. All animals that eat hay may be affected. All above ground parts are poisonous, especially when present in moldy hay. Symptoms include bruising and spontaneous bleeding. Toxic ingredient is Coumarin, used in medications for humans. Must be consumed for two weeks or more for signs to be noted. Animals may have pale mucous membranes, increased respiratory rates, rapid and weak pulse. Control with glyphosate.</p>	

Table VII Moderately Toxic Plants			
Common Name, Scientific Name	T	Comments	Picture
Ergot <i>Claviceps purpurea</i>		<p>Fungus that may be present in field grains. Pasture poisoning is the most likely source for toxicity. Any animal consuming grain or grass seeds primarily swine, cattle, sheep, and goats, are at risk. Poultry and horses may also be affected. Fungal bodies found in seed heads of grains and grasses are the most dangerous part. Symptoms include behavioral changes, lameness, abortions, convulsions, gangrene, and death.</p> <p>Ergot is a fungal parasite of the heads of grasses. Entire grains may be replaced by the black, hardened bodies of the fungus. Each body is up to 1" long, larger than the normal grain and protrudes conspicuously from the head. When grain is harvested, ergot bodies may fall on the ground to infest the next year's crop. Control with controlled burning, or removal of plants prior to ripening of seeds. Remove pulled plant from field. Contact your Cooperative Extension for additional measures. Be sure to check the EPA Specific Chemical Fact Sheet about the use of a chemical or fungicide in environmentally sensitive areas.</p>	

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¹ Glyphosate is recommended for use by the US EPA because in 10 days, it quickly degrades into relatively harmless substances.

Glyphosate products are sold under a variety of brand names. Read the label carefully to determine the percentage of glyphosate in solution, and follow all recommendations for its mixing and use.

² Proper identification is necessary to determine if plant is natural or exotic invasive.

³ Louisville Water Company does not advocate or endorse the use of any brand name product.

EPA's Specific Chemical Fact Sheets are located at this web site: http://www.epa.gov/pesticides/factsheets/chemical_fs

A list of minimally toxic plants is provided below in Table VIII. These plants are toxic only if ingested in large quantities, and only if ingested by specific animals or humans. Some of these plants have been previously discussed, which is noted.

Key to Type: T = Tree, S = Shrub, P = Flowering Plant, V = Vine, G = Grass, F = Fern

Table VIII Plants of Low Toxicity			
Common Name, Scientific Name	T	Comments	Picture
Alsike Clover <i>Trifolium hybridum</i>	P	<p>May affect all grazing animals. All green parts of the plant may be slightly toxic when dewy. Symptoms, gastrointestinal irritation, sunburn or sunscald. Large amounts must be consumed for symptoms to appear.</p>	

Table VIII Plants of Low Toxicity

Common Name, Scientific Name	T	Comments	Picture
<p>Bouncing Bet <i>Saponaria officinalis</i></p>	P	<p>All animals may be affected. Also called Soapwort. All parts of the plants may be slightly toxic. Symptoms include mouth, stomach, and intestinal irritation. Contains saponins; when mixed with water will produce foam. Flowers range from white to pink in color.</p>	
<p>Buttercup <i>Ranunculus spp.</i></p>	P	<p>See Buttercup, under Lesser Threat, page 19. All animals that chew on or ingest plant may be affected, but only fresh leaves and stems have low toxicity. Symptoms include oral and gastrointestinal irritation, salivation, of diarrhea.</p>	
<p>Common Burdock <i>Arctium minus</i></p>	P	<p>See Common Burdock, under Significant threat, page 12. Burs can cause local irritation and possibly intestinal hairballs. Most animals avoid eating them. Serious illness and death are rare. Symptoms include skin, eye, mouth, and nose, and ear irritation, stomach irritation, hairballs.</p>	
<p>Common St. John's Wort <i>Hypericum perforatum</i></p>	P	<p>See Common St. John's Wort, under Common Weeds, page 20. Also called Klamath Weed. Affects cattle, sheep, goats, horses, and swine. All parts of the plant are mildly toxic. Symptoms include sunburn, skin slough, and eye irritation. Animals must consume a large amount of the herb for 4 to 5 days before symptoms occur.</p>	
<p>Dutchman's Breeches <i>Dicentra cucullaria</i></p>	P	<p>Also called Staggerweed, (another common name for Dwarf Larkspur, page 56), Squirrelcorn, and Bleeding Heart, (cultivated). Cattle are primarily affected, but sheep and horses may also be affected. Leaves, stems, and roots are considered to be dangerous. Symptoms include salivating, breathing difficulty, abdominal pain, collapse, convulsions, neurologic signs, (running with head up).</p>	
<p>English Ivy <i>Hedera helix</i></p>	V	<p>See English Ivy, under Significant Threat, page 12. Very rare toxicity, mainly to cats, dogs, birds, or other pets. Leaves and berries are slightly toxic, causes oral irritation, stomach irritation, diarrhea, breathing problems, and, in rare cases, coma, and death.</p>	

Table VIII Plants of Low Toxicity

Common Name, Scientific Name	T	Comments	Picture
<p>Foxtail Barley <i>Hordum jubatum</i></p>	G	<p>All animals can be affected, but grazing animals and outdoor dogs are more at risk. Symptoms include skin, mouth, ear, nose, eye irritation, stomach irritation, and abscesses. The awns of this plant are slightly toxic, and each bristle bears small teeth or barbs that point backwards like tiny fishhooks.</p>	
<p>Jack-in-the-Pulpit <i>Arisaema triphyllum</i></p>	P	<p>All animals may be affected. Bulbs, stems, and leaves are the dangerous parts of the plant. Symptoms include oral and gastric irritation, mouth and throat swelling or rare occasions may be severe enough to affect breathing.</p>	
<p>Marijuana <i>Cannabis sativa</i></p>	P	<p>All animals, pets as well as horses, and livestock may be affected, but most animals tend to avoid this plant. The dangerous parts of the plant are the leaves, stems, flowers, and seeds. Symptoms include behavioral changes, trembling, incoordination, gastrointestinal distress, sometimes breathing difficulties.</p>	
<p>Poinsettia <i>Poinsettia pulcherrima</i></p>	P	<p>All animals can be affected, but pets are more likely to come into contact with poinsettia than livestock. The leaves and stems are primarily the toxic portions of the plants, but all parts may be toxic. Symptoms include skin, mouth, eye, and stomach irritations. The milky sap, (latex), is irritating to the skin eyes, and mucous membranes. Wash sap from animal and call vet if eyes are affected, or if signs do not resolve themselves in a few minutes. Rarely deadly.</p>	
<p>Pokeweed <i>Phytolacca americana</i></p>	P	<p>All animals and humans may be potentially affected. All parts of the plant, especially the roots and seeds are mildly toxic. Stems of plant are purple, with white berries that turn dark purple to black. Symptoms include gastrointestinal irritation, rarely anemia. Birth defects and tumors may also be possible. Grazing animals do not exhibit vomiting, as in pets and humans. Signs usually resolve in a day or two, unless large quantities are consumed.</p>	
<p>Rhubarb <i>Rheum rhaponticum</i></p>	P	<p>All animals may be affected, especially those being fed garden trimmings. Symptoms include staggering, trembling, breathing difficulties, weakness, and diarrhea, increased drinking and urination, death. Large amounts must be consumed to kill animals.</p>	

Table VIII Plants of Low Toxicity

Common Name, Scientific Name	T	Comments	Picture
<p>Star-of-Bethlehem</p> <p><i>Ornithogalum umbellatum</i></p>	P	See Star-of Bethlehem, Significant Threat, page 17. Cattle, sheep, horses, and potentially other grazing animals may be affected. All parts of the plants, especially bulbs. Symptoms include stomach and intestinal irritation, abdominal pain, irregular heart rate, and rarely, death.	
<p>Stinging Nettle</p> <p><i>Urtica dioica</i></p>	P	Local irritation is the most common symptom, which usually resolves on its own. Any animal that brushes against or consumes the plant can be affected. Short-haired hunting dogs and other dogs that run through the underbrush are more likely to encounter this plant. Stems and leaves are dangerous. Symptoms include facial, skin, and oral irritation, salivation, pawing at the mouth, possible eye irritation.	
<p>Tansy</p> <p><i>Tanacetum vulgare</i></p>	P	All animals may be affected, especially if the leaves and stems are ingested. Old-fashioned garden plants are found in old gardens, roadsides, creek banks, and waste areas. Not a commonly reported toxic plant. Illness and death in humans have been reported due to attempts at medicinal concentrations and uses. Toxic signs may include salivating and abdominal pain, with the possibility of convulsions, and abortions occurring.	

Key to Type: T = Tree, S = Shrub, P = Flowering Plant, V = Vine, G = Grass, F = Fern

¹ Glyphosate is recommended for use by the US EPA because in 10 days, it quickly degrades into relatively harmless substances.

Glyphosate products are sold under a variety of brand names. Read the label carefully to determine the percentage of glyphosate in solution, and follow all recommendations for its mixing and use.

² Proper identification is necessary to determine if plant is natural or exotic invasive.

³ Louisville Water Company does not advocate or endorse the use of any brand name product.

EPA's Specific Chemical Fact Sheets are located at this web site: http://www.epa.gov/pesticides/factsheets/chemical_fs

Plant Identification

All plants listed in this Chapter have been indexed within the Guide, for your convenience. Remember, this is only a partial list of the more common unwanted plants. In some cases, the plant will not be listed here, or you may wish to consult your local Cooperative Extension Agent, or other professional, for identification purposes.

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