

Pests of Ornamentals and Turfgrass

Weeds

Weeds are plants that are growing where they are not wanted. Usually, they cause minimal problems in healthy, vigorously growing turf. However, weeds can out-compete desirable turf due to poor management practices: irrigation, fertilization, mowing, turf diseases, insects, or from heavy use. Weed free turf is not practical in most cases but a balanced management program can keep them to a minimum.

A typical weed has one or more of the following characteristics:

- Produces lots of seed
- Populations establish rapidly
- Seeds can lie dormant for a long time
- Have vegetative reproductive structures
- Adapted for easy spread
- Plant development stages

Plant Development Stages

Most plants undergo four stages of growth and development.

1. **Seedlings** emerge from the soil soon after germination.
2. Leaves, stems, and roots grow rapidly during the **vegetative** stage, water and nutrient demands are relatively high.
3. After a period of vegetative growth, the plant enters the **reproductive** stage where most of the energy production in the plant is devoted to seed formation. Seed production is critical for survival of annual and biennial species.
4. Little or no energy production occurs during **maturity** when seed production is nearly finished. During this stage, the plant typically sheds its seeds and dies.

Plant Life Cycles

Annual plants complete their life cycle in one growing season, often in as little as 45 days. **Biennials** require two seasons. **Perennials** grow for three or more years.

Annuals that grow from **spring to fall** (large crabgrass and goosegrass) are **summer or warm-season annuals**. These are often problems because their life cycle is the same as many crops. Those that grow from **fall to spring** (common chickweed and henbit) are **winter or cool-season annuals**.

Biennial plants complete their life cycles over **two growing seasons**. Most start from seed in the fall or spring and grow through the summer, fall, winter, and following spring. They overwinter as rosettes. In the second summer, biennials flower and die. Examples include wild carrot and musk thistle.

Perennials often are the most difficult weeds to manage. Woody species generally go dormant in the winter and begin growth in spring from aboveground stems. Aboveground parts of herbaceous perennials may die back, but their underground storage organs survive the winter. Many are deep rooted so they continue to grow during summer droughts. Perennials can spread from seed and often from roots, tubers, bulbs, and rhizomes. White clover and yellow nutsedge are examples. Dandelions can be annual or perennial.

Many weeds produce large quantities of seeds that are easily carried by wind, rain, machinery, animals, and people. Weed seeds can germinate after being dormant for long periods of time. They also can tolerate extremes in weather such as temperature and moisture. **It is best to control weeds before they produce seeds.**

Plant Classification

Weeds can be grouped into the following categories:

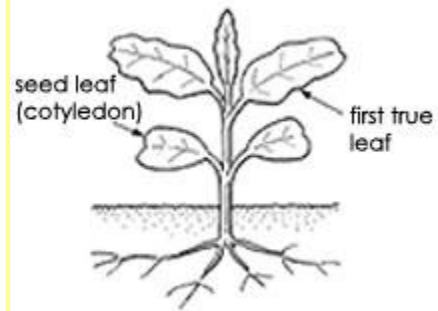
- grasses
- sedges
- lilies
- broadleaves.



Grasses have only one leaf as they emerge from the soil. Their leaves are two-ranked and typically upright, narrow with parallel veins. Grass stems are round and hollow. The root system of a grass is fibrous with the growing point located at or below the soil surface (surrounded by several layers of leaves). Perennial grasses can produce new shoots from growing points located on rhizomes (belowground) and/or stolons (aboveground).

Sedges resemble grasses but they have triangular stems with three rows (ranks) of leaves. Typically, sedges are listed under the grass section of an herbicide label. They prefer moist, poorly drained soils, but can grow in fertile, well-drained soils. Yellow nutsedge, is a perennial that reproduces by tubers and rhizomes. It is the principle sedge found in Kentucky.

Lilies resemble grasses and sedges but they have long, linear leaves and reproduce from underground bulbs. Two common species found in Kentucky are wild garlic and Star-of-Bethlehem.



Broadleaf seedlings have two leaves (cotyledons) as they emerge from the soil. The leaves are generally broad with net-like veins. Broadleaves typically have a taproot surrounded by a relative coarse root system. Actively growing broadleaf plants have exposed growing points at the end of each stem and in each leaf axil.

Perennial broadleaves may have growing points on roots and stems above and below the surface of the soil.

Summer Annuals



photo: Lynn Sosnoskie, Univ. of Georgia, Bugwood.org

Crabgrass

From seed and roots at lower joints; encouraged by alternating wet, dry soil surface in spring; germination begins mid-April; 3 to 10 finger-like branches at top of stem; thrives in sparse turfgrass stand; low mowing; heavy traffic area; full sun



photo:University of Minnesota

Foxtail

Bright green clumping grass; heavy traffic areas; bushy, cylindrical seed head at top of stem; full sun; low mowing



photo: Michigan State University

Goosegrass

Germinates May to June; prostrate growth; white center with wagon-wheel appearance; sparse turfgrass stand; low mowing; grows well in compacted soil



photo: Lynn Sosnoskie, Univ. of Georgia, Bugwood.org

Common knotweed

Germinates in early spring; prostrate growth; alternate, oblong, pointed leaves; heavy traffic; along roads or driveways

Winter Annuals



photo: University of Maryland

Annual bluegrass

Germinates from fall to early spring; light green bunch-type grass with flattened stems; can produce seed heads even with low mowing heights; irrigated turf and moist shade



photo:Michigan State University

Common chickweed

From seed in autumn and creeping stems; pairs of smooth, egg-shaped leaves; small star-shaped white flowers



photo:Oklahoma State University

Henbit

From seed and roots form lower joints; square stem that branches close to ground; almost circular opposite leaves with rounded teeth or lobes; prefers moist soil in shade

Perennials



photo:Purdue University

Broadleaved Plantain

From seeds and new shoots from taproot; leafless stem; egg-shaped leaves; seeds along half length of seed stalk; thrive in weak, thin turf



photo:Kansas State University

White clover

From seed and creeping stems; creeping growth; white blossoms; leaves with 3 leaflets; survives close mowing



photo: Missouri Botanical Garden

Wild garlic

From underground bulbs and aboveground bulblets; round slender leaves are hollow; poorly maintained or thin turf



photo: Mark Czamota, Univ. of Georgia, Bugwood.org

Yellow nutsedge

From seed, rhizomes, and tubers; fast growing; yellow-green triangular stem; often in wet soil



photo: msuturfweeds.net

Nimblewill

Warm season perennial, stolons root at nodes producing dense stands. Leaf blades gray-green with loose-spreading growth. Especially common in Kentucky bluegrass. Mowing is not an effective control measure.

Perennial or Annual



Common dandelion

From seeds and root shoots; stems contain a milky juice and arise from a long, thick, fleshy taproot



photo: Rob Routledge, Sault College, Bugwood.org

Wild violet

From seed and underground root; heart-shaped leaves; often grow in shade