Successful weed identification is a combination of timing and user-friendly data. Timing in relation to the maturity of the plant (the older, the easier) and user-friendly data, meaning an identification guide that is designed to facilitate the identification process. Both were considered in the design of this guide.

**Timing:** When identifying either monocot (grassy) weeds or dicot (broadleaf) weeds, studying a mature or flowering sample is very important. All of the most easily identifiable traits—flowers, seeds, leaves and roots—are present then, so take some time to find a mature specimen to examine.

**User-friendly data:** For ease of use, this guide concentrates on those plant characteristics that differentiate one species from another rather than those traits each has in common. These differences are represented visually with added text to refine the distinctions between similar plants.

**Understanding the terms used in this guide**
Understanding the parts of a grass plant are essential to accurately identify monocot weeds. In the example shown, pay particular attention to the seedhead, the ligule and the collar. They are the plant parts which have the most differentiating traits.

**Abbreviations**
aka = “also known as” (different common names are popular in different parts of the U.S.)

**Further help**
The use of this guide was designed to help managers substantially reduce the number of possible weed species identifications. However, variations in a plant’s vegetative characteristics or distribution may require that managers forward samples to their local extension service for confirmation. BASF’s local technical representatives can also be contacted for further help at 800/545-9525 or on the Web at www.turffacts.com.

**Sources**
Monocot weeds

Because of natural variations within grasses and differences that occur under varying environments, the illustrations included herein are meant to be representative but not definitive. Users need to consider all of the information—seedhead, in-bud, ligule, collar, descriptive text, tips and distribution—to accurately identify a weed.

As you proceed, keep in mind that you should not rely on an individual characteristic to be conclusive, rather total the number of similar characteristics between the sample and the guide to help narrow the number of possibilities.

The monocot weed species illustrated herein were selected for their likelihood of appearing in turf and their latest reported distribution.

Identifying a monocot weed

Once a mature sample has been selected, check each of the listed plant parts as follows:

- seedhead—size, shape, openness and number, size and shape of branches and seeds
- in-bud—cut through a leaf stem and determine if it is folded or rolled
- ligule—remove a leaf from its stem and with a hand lens check the size, shape and texture
- collar—lay the leaf flat, underside up and check the size, shape and top and bottom edges
- tips—check for additional vegetative plant characteristics
- distribution—confirm that this weed species has been identified in your state

ANNUAL BLUEGRASS
aka Poa annua, poa

DIAGNOSTIC TIPS:
Very persistent self-seeding winter annual or biennial
Short, narrow leaf blades with parallel edges and boat-shaped tip
Some leaf blades wavy
Germinates in late summer/early fall
Shallow-rooted, dying under heat or moisture stress

STRUCTURAL CHARACTERISTICS:

Leaf in bud: folded
Collar: narrow top pinched
Ligule: medium pointed

DISTRIBUTION:

Indigenous states
**MONOCOTS**

**Annual**

---

**FOXTAIL BARLEY**
aka squirreltail barley

**DIAGNOSTIC TIPS:**
A narrow-leafed prostrate summer annual

Leaf blades coarse to touch, often with sparse, stiff hairs

Seedhead is a single tufted spike

Seed has a 2-3-inch-long hair at pointed end

---

**SANDBUR**

**DIAGNOSTIC TIPS:**
A mostly prostrate, narrow-leaved summer annual that likes sandy soils

Distinctive yellow seedhead contains 6-20 large, sharply-burred seeds

Burred seeds can cause painful injury to unprotected feet or ankles

---

**STRUCTURAL CHARACTERISTICS:**

- **Leaf in bud:** folded
- **Collar:** broad, bottom pinched
- **Ligule:** hairy

---

**DISTRIBUTION:**

- **Indigenous states**

---

**STRUCTURAL CHARACTERISTICS:**

- **Leaf in bud:** folded
- **Collar:** broad, bottom pinched
- **Ligule:** tall, toothed

---

**DISTRIBUTION:**

- **Indigenous states**

---
**GOOSEGRASS**
aka silver crabgrass

A narrow-leaved dense prostrate summer annual
Leaf color is darker green than most annual monocots
Collar area has sparse long hairs
Seedhead has 2-13 branches which are white to silver in color

**STRUCTURAL CHARACTERISTICS:**
- **Leaf in bud:** folded
- **Collar:** broad continuous
- **Ligule:** short toothed & divided

**DISTRIBUTION:**
- Indigenous states

---

**BARNYARDGRASS**
aka billion dollargrass, watergrass

A very wide-bladed semi-prostrate summer annual
Stems may be branched at nodes and frequently bent upright
Seedhead has multiple short perpendicular branches
Seeds are coarse with short burrs

**STRUCTURAL CHARACTERISTICS:**
- **Leaf in bud:** rolled
- **Collar width:** broad
- **Ligule height:** absent

**DISTRIBUTION:**
- Indigenous states
CHEATGRASS
aka chess, rye bromegrass

A narrow-leafed, mostly erect winter annual

Underside of leaf is often hairy

Seedhead is open with multiple semi-erect branches carrying 1-4 seed clusters

Seeds look like cultivated wheat or rye

STRUCTURAL CHARACTERISTICS:

Leaf in bud: rolled
Collar: broad bottom pinched
Ligule: short toothed

DISTRIBUTION:

GREEN FOXTAIL
aka green bristlegrass

A wide-leafed mounded summer annual

Leaf blades are limp, bright green and sharply pointed

Stems bent upright at nodes

Seedhead cylindrical with tufted pale green seeds

STRUCTURAL CHARACTERISTICS:

Leaf in bud: rolled
Collar: narrow continuous
Ligule: hairy

DISTRIBUTION:
**LARGE CRABGRASS**  
aka hairy fingergrass

A wide-bladed prostrate summer annual

Leaves are hairy on both surfaces with a prominent midrib

Older nodes are often branched and rooted where contacting soil

Seedhead open with 4-6 slender branches

**STRUCTURAL CHARACTERISTICS:**

- Leaf in bud: rolled
- Collar: broad top pinched
- Ligule: tall toothed & pointed

**DISTRIBUTION:**

Indigenous states

---

**RESCUEGRASS**  
aka prairiegrass, rescue brome

A wide-leafed winter annual or biennial

Leaves are hairy at edges and on upper surface

Seedhead is open with bending slender side branches

Seed clusters look like cultivated wheat or rye

**STRUCTURAL CHARACTERISTICS:**

- Leaf in bud: rolled
- Collar: broad bottom pinched
- Ligule: tall toothed & pointed

**DISTRIBUTION:**

Indigenous states
**SMOOTH CRABGRASS**  
aka fingergrass  
A narrow-leaved prostrate summer annual  
Leaves are not hairy except sparsely haired in collar area  
Stems branch at nodes, but do not root  
Seedhead has 2-6 slender upright branches

**STINKGRASS**
A narrow-leaved annual  
Leaves are dull on upper surface and glossy on underside  
Collar area has sparse long hairs  
Plant has a very disagreeable odor when cut or damaged

**STRUCTURAL CHARACTERISTICS:**
- **Leaf in bud:** rolled  
- **Collar:** broad bottom pinched  
- **Ligule:** tall rounded

**STRUCTURAL CHARACTERISTICS:**
- **Leaf in bud:** rolled  
- **Collar:** narrow continuous  
- **Ligule:** hairy

**DISTRIBUTION:**
- **Indigenous states**

**DISTRIBUTION:**
- **Indigenous states**
**WITCHGRASS**

An erect wide-bladed summer annual

Leaves are densely haired on both surfaces

Emerging seedhead is fountainlike

Mature seedhead is large and very open with slender branches carrying single seeds

**STRUCTURAL CHARACTERISTICS:**

- **Leaf in bud:** rolled
- **Collar:** broad continuous
- **Ligule:** hairy

**DISTRIBUTION:**

[Map showing indigenous states]

---

**YELLOW FOXTAIL**

An erect wide-bladed summer annual

Upper leaf surface has long hairs in collar area

Leaves are often slightly twisted in an open spiral

**STRUCTURAL CHARACTERISTICS:**

- **Leaf in bud:** rolled
- **Collar:** narrow top pinched
- **Ligule:** hairy

**DISTRIBUTION:**

[Map showing indigenous states]
DOWNY BROME
aka drooping bromegrass

An erect narrow-bladed winter annual

Leaves have dense soft hairs on both surfaces

Seedhead is open with drooping branches

Seed clusters are tufted and look like cultivated wheat or rye

STRUCTURAL CHARACTERISTICS:

Leaf in bud: rolled
Collar: narrow bottom pinched
Ligule: medium toothed & pointed

DISTRIBUTION:

MONOCOTS Annual

FALL PANICUM
aka smooth witchgrass

A very wide-bladed mostly prostrate summer annual

Leaves may be hairy on upper surface, are glossy beneath and sharply pointed

Stems branched at nodes and bent upright

Seedhead is open with multiple very slender branches

STRUCTURAL CHARACTERISTICS:

Leaf in bud: rolled
Collar: broad continuous
Ligule height: hairy

DISTRIBUTION:
**WILD OAT**
aka wild oats

An erect wide-bladed annual

Plant often turns brown in summer as seed matures

Collar area has sparse short hairs

Stems are stiff

Seedhead is open with multiple branches carrying many single drooping seeds

**STRUCTURAL CHARACTERISTICS:**
- **Leaf in bud:** rolled
- **Collar:** narrow bottom pinched
- **Ligule:** tall toothed

**DISTRIBUTION:**

![Indigenous states map](image)

**SOUTHERN CRABGRASS**
aka summergrass

A wide-bladed prostrate summer annual

Leaves may be hairy on upper surface

Stems will root at nodes

Collar area has sparse long hairs

Seedhead has 2-9 slender branches

**STRUCTURAL CHARACTERISTICS:**
- **Leaf in bud:** rolled
- **Collar:** broad
- **Ligule:** medium toothed & pointed

**DISTRIBUTION:**

![Indigenous states map](image)
**DALLISGRASS**
aka paspalum

A warm-season coarse semi-erect spreading perennial

Collar area has hairs on upper leaf surface and at leaf edges

Seedhead has 3-7 right-angled slender branches

Roots may have short rhizomes

**STRUCTURAL CHARACTERISTICS:**

- **Leaf in bud:** rolled
- **Collar:** broad
- **Ligule:** tall

**DISTRIBUTION:**

- Indigenous states

---

**BROOMSEDGE**

A very narrow-leafed erect perennial

Collar area has hairs on upper leaf surface and on leaf edges

Seedhead is upright with white feather-like tufts

**STRUCTURAL CHARACTERISTICS:**

- **Leaf in bud:** folded
- **Collar:** narrow continuous
- **Ligule:** short with hairs

**DISTRIBUTION:**

- Indigenous states
QUACKGRASS

An erect narrow-leafed aggressive perennial
Leaf is rough on upper surface
Collar area has claw-like fleshy appendages (auricles) that clasp stem
Plant develops multiple rhizomes from base of plant
Seedhead is a single slender spike

JOHNSONGRASS

A very wide-bladed aggressively spreading prostrate perennial
Collar area has short hairs on upper surface near ligule
Spreads by multiple \( \frac{1}{4} \)-inch-thick rhizomes

STRUCTURAL CHARACTERISTICS:

**Leaf in bud:** rolled
**Collar:** broad continuous
**Ligule:** short

**Leaf in bud:** rolled
**Collar:** broad bottom pinched
**Ligule:** tall with hairs

DISTRIBUTION:

Indigenous states
**NIMBLEWILL**

A very short-leafed stemmy spreading perennial herb

Leaves are short

Spreads by very slender stolons

On frequently mowed sites, plant often looks stemmy in fall

Turns off-white during winter

Collar area has long hairs at leaf edge

Seedhead has single, very slender spike

**STRUCTURAL CHARACTERISTICS:**

- **Leaf in bud:** rolled
- **Collar:** medium top pinched
- **Ligule:** short

**DISTRIBUTION:**

- **Indigenous states**

---

**KNOTGRASS**

A prostrate spreading perennial

Collar area has short hairs at leaf edges and near ligule

Seedhead has two slender upright branches

**STRUCTURAL CHARACTERISTICS:**

- **Leaf in bud:** rolled
- **Collar:** broad bottom pinched
- **Ligule:** tall rounded

**DISTRIBUTION:**

- **Indigenous states**
**YELLOW NUTSEDGE**  
aka yellow nutgrass

A very rapidly growing erect perennial herb
Spreads by rhizomes with underground tubers
Leaves are v-shaped with a prominent midrib tapering to a sharp point
Stems are triangular
Seedhead is semi-open, carrying yellow seeds

**PURPLE NUTSEDGE**  
aka purple nutgrass

Rapidly growing erect perennial herb
Spreads by rhizomes with underground tubers
Stems are triangular
Leaves are v-shaped, tapering to a sharp point
Seedhead is open, carrying dark or purple seeds

**DISTRIBUTION:**

![Yellow Nutsedge Distribution Map]

![Purple Nutsedge Distribution Map]
**MONOCOTS Perennial**

**KIKUYUGRASS**
A low growing perennial that creeps with both stolons and rhizomes.

Flat leaf blades on light green leaves

Seedhead has 2 to 4 spikelets in upper sheath

Seeds are dark brown with large scars at the rounded base

**STRUCTURAL CHARACTERISTICS:**
- **Leaf in bud:** folded
- **Collar:** medium w/ fine hairs
- **Ligule:** hairy

**DISTRIBUTION:**
- Indigenous states

---

**TORPEDOGRASS**
Aquatic grass with small leaves 1/16- to 1/4-in. wide

Leaves have hairs on top and often roll inward

Stems are stiff; often 1- to 3-ft. tall

Grows from underground rhizomes with hard, pointed tips

**STRUCTURAL CHARACTERISTICS:**
- **Leaf in bud:** rolled
- **Collar:** narrow (a pale band)
- **Ligule:** hairy

**DISTRIBUTION:**
- Indigenous states
DICOT WEEDS

In a universe of hundreds of dicot weeds, a limited number can tolerate repeated mowing of managed turf sites. In order to provide a broader representation of turf weeds, we have included a select number of these dicot weeds. Those presented herein were chosen for their ability to survive in turf, often as a continuing pest. Several of the species can persist even at fairly short mowing heights; others are active in cool weather.

Identifying a dicot weed

Unlike the prototypical size and shape of monocot weeds, the shape and vegetative growth habits of many dicot weed groups are visually unique. Also, the distinctive traits of monocots—seedheads, ligules and collars—are not always present, making visual identification more important.

We suggest the following process for identifying dicot weeds:

- Look for a sample flower if available
- Leaves: check for identifying characteristics (size, shape, notches, venation or coloration)
- Stems: check how the leaves are held (opposite or alternate), shape and color
- Flowers: check color, size and composition (single, double or compound)
- Location: take note of the conditions in which the weed is growing (shade, compacted soil, etc.)
- Distribution: confirm that this weed species has been identified in your state

Dandelion

aka common dandelion

A large rosette-type perennial herb

Leaves growing from plant base are long, narrow and deeply notched

Points of leaf lobes point backward toward base of plant

Has large, slightly mounded yellow flowers on hollow stems

Mature seedhead is a round puffball with seeds that are easily dislodged

Distribution:

Indigenous states

Henbit

aka dead-nettle

A mostly erect winter annual or biennial

Leaves are similar to mint: rounded, toothed, heavily veined with soft hairs on top, held opposite on square stems

Single flowers are trumpet-shaped, pale purple and project from ends of stems

Seen primarily in spring, dying with heat

Distribution:

Indigenous states
**KNOTWEED**
aka prostrate knotweed

- A persistent low-growing summer annual
- Prefers compacted soil of pathways and along drives
- Leaves are blue-green, up to 1 inch long and ¼-inch wide
- Small single white to pink flowers are found at the junction of the leaves and the stem

**PURSLANE**
aka common purslane

A prostrate, succulent summer annual

- Leaves are shiny green, wedge-shaped, thick and up to 1 inch long
- Stems are thick, fleshy and purple to brown in color
- Plants are very drought-resistant
- Small, single yellow flowers may appear in the leaf clusters at end of stems

**DISTRIBUTION:**

- Indigenous states

---

**DICOTS**

---
COMMON CHICKWEED  
aka starwort, winterweed

A low-growing winter annual

Plant prefers shaded moist sites

Opposite small leaves are carried on tender stems

Stems may root at leaf nodes

Small compound flower composed of 5 pairs of two pale purple petals

Plants die back with summer heat, but can survive year round at cool sites

DISTRIBUTION:

| Indigenous states |

SPOTTED SPURGE

A prostrate fleshy summer annual herb

Leaves are opposite, oblong, and up to ¾-inch long

Upper leaf surface has a purple to brown blotch along center vein

Hairy stems produce a milky-white sap when broken

DISTRIBUTION:

| Indigenous states |

ACKNOWLEDGMENTS

This guide was written and compiled by Chris Sann of Turf Information Group, Inc., Wilmington, Delaware and the editors of Landscape Management and Golfdom. Graphic design, execution and illustrations by graphic designers Lisa Bodnar, Jeff Landis and Dan Beedy. This guide presented as a service to the green industry by BASF Corporation of Research Triangle Park, NC and Landscape Management and Golfdom magazines, Cleveland, OH. © 2001