

# MU Guide

## Home Lawn Weed Control

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Weed-free turf beautifies and adds greater usefulness to home landscapes, recreational areas, and public and industrial grounds. Proper management is the most effective factor in weed control, but unfavorable climate, insects, diseases or abuse permits weeds to invade your lawn. Under such conditions, careful use of appropriate herbicides permits the turf to recover its original value. Figure 1 shows identifying characteristics of a number of weeds frequently found in lawns (crabgrass and dandelion are omitted because they are well known). See MU publication IPM 1009, *Turfgrass and Weeds*, for further information on weed identification and for a discussion of integrated weed management strategies.

### Weed control principles

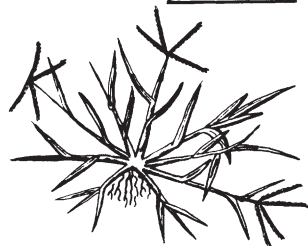
A dense stand of healthy grass provides the best weed control. Because most weeds are "opportunists" that invade weakened lawns, the fight against weeds starts with good turf management. Cultural practices such as mowing, fertilizing and watering should be



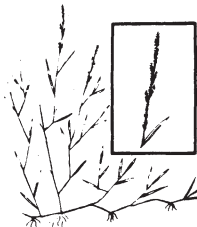
**Henbit** — upright squarish stems, blue and lavender flowers; winter annual.

**Plantain, (narrow or buck-horn)** — long narrow leaf, seedhead atop wiry stem; perennial.

**Plantain, (broadleaf or Rugels)** — thick oval leaves, long seedhead; perennial.



**Goosegrass** — coarser than crabgrass, leaf base flat whitish; summer annual.



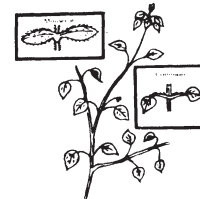
**Nimblewill** — fine wiry stems, frail inconspicuous seeds, winter dormant; perennial.



**Yellow nutgrass (nutsedge)** — triangular stems, yellowish green; treat as perennial.



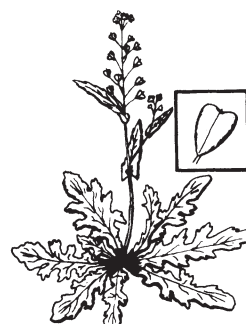
**Mallow** — upright stem, five-point leaf; summer annual or biennial.



**Chickweeds** — common — light green delicate vine; winter annual; *mouseear* — dark green hairy leaves; perennial.



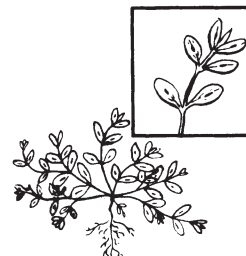
**Ground ivy** — creeping stems mostly square, leaves mostly circular; perennial.



**Shepherd's-purse** — young leaf like dandelion, triangular seed pod; winter or summer annual.



**Knotweed** — tough viny stems, leaves small and single; spring-germinating annual.



**Spurge (prostrate or mat)** — plant sap milky, stems often matted, summer annual.



**Bindweed** — creeping vine, leaf like arrow-head, flower white or pink; perennial.

Figure 1. Identifying common lawn weeds.

**Table 1. Chemical control of broadleaf weeds.**

ANNUAL BROADLEAF WEEDS		ANNUAL BROADLEAF HERBICIDES	
		Trade name	Common name
Henbit Deadnettle Common chickweed Shepherd's-purse Peppergrass	<b>Winter annuals.</b> Can be controlled with Gallery preemergence herbicide applied in late September or with a three-way premix postemergence herbicide applied in late fall or early spring on a warm day.	<b>Preemergence</b> Gallery	isoxaben
Knotweed Speedwell (Veronica) Lambsquarters Ragweed Kochia Pigweed Spurge, spotted Carpetweed Puncturevine Purslane Vervain Mallow Black medic Yellow wood sorrel	<b>Summer annuals.</b> Knotweed and speedwell germinate very early in the spring. Mallow is a biennial weed. Black medic and yellow wood sorrel can be perennials. Applications should be made early in the weeds' development for best control.	<b>Postemergence</b> Cool Power Dissolve Horsepower Power Zone Speed Zone  Super Trimec Three-Way Triamine Trimec Classic Triplet Tri-Power Turflon II Amine Turflon Ester	MCPA + triclopyr + dicamba 2,4-D + MCPP + dichlorprop MCPA + triclopyr + dicamba carfentrazone + MCPA + MCPP + dicamba carfentrazone + 2,4-D ester + MCPP + dicamba 2,4-D + 2,4-DP + dicamba 2,4-D + MCPP + dicamba 2,4-D + MCPP + dichlorprop 2,4-D + MCPP + dicamba 2,4-D + MCPP + dicamba MCPA + MCPP + dicamba 2,4-D + triclopyr (amine formulation) triclopyr ester
Preemergence herbicides for annual grass control will provide preemergence control of many winter and summer annual broadleaf weeds. Apply in the spring for summer annuals; early fall for winter annuals. Please refer to the labels for information.			
PERENNIAL BROADLEAF WEEDS		PERENNIAL BROADLEAF HERBICIDES	
		Trade name	Common name
Bindweed Mouseear chickweed Red sorrel Dandelion Yarrow Plantains Docks Thistles Violets Ground ivy White clover Poison ivy	Applications in the spring or fall while weeds are active will give control. Best control is achieved in the fall when weeds are translocating food reserves from tops to roots in preparation for winter.	<b>Postemergence</b> Cool Power Dissolve Horsepower Power Zone Speed Zone  Super Trimec Three-Way Triamine Trimec Classic Triplet Tri-Power Turflon Ester	MCPA + triclopyr + dicamba 2,4-D + MCPP + dichlorprop MCPA + triclopyr + dicamba carfentrazone + MCPA + MCPP + dicamba carfentrazone + 2,4-D ester + MCPP + dicamba 2,4-D + 2,4-DP + dicamba 2,4-D + MCPP + dicamba 2,4-D + MCPP + dichlorprop 2,4-D + MCPP + dicamba 2,4-D + MCPP + dicamba MCPA + MCPP + dicamba triclopyr ester
NOTE: Postemergence herbicides containing dicamba can damage ornamental trees, shrubs and flowers. Use label recommendations and precautions when ornamentals are in the area.  Advantages of fall applications of postemergence broadleaf herbicides — 1. Less risk of injury to desired plants. 2. Both perennial and winter annual seedlings can be controlled. 3. Perennials weakened by herbicide may be killed by winter weather. 4. Bare spots left by dead weeds will be filled sooner by bluegrass and other cool-season grasses.		NOTE: Always read container label before pesticide use and apply only as directed. To use product in any way that is inconsistent with the label is a violation of the Federal Environmental Pesticide Control Act of 1972.	

done in a manner and time that will favor the grass rather than the weeds. Height of mowing influences competition against weeds such as crabgrass — the higher the cut, the lower the infestation. Frequent light sprinkling encourages shallow-rooted weeds and seed germination. Less frequent “deep-soak” watering that maintains a dry surface layer provides the grass with a competitive advantage.

Temperature, light, soil moisture and other factors determine the time and extent of weed germination and development. Some weeds germinate in early spring while others sprout in summer or fall. If conditions are favorable, a weed may be particularly abundant in a

given year, but under different conditions the next year, it may be little in evidence.

Weeds that germinate in the spring from seed and mature in summer or fall each year (crabgrass and knotweed, for example), are designated as summer annuals. Chickweed, henbit and others germinate in fall or late winter and mature in late spring. These are called winter annuals.

*Preemergence* herbicides (chemicals applied before germination of weed seeds) must be applied in spring to control summer annuals, but in fall to control winter annuals (see Tables 1 and 2). After weeds appear, post-emergence herbicides must be used.

**Table 2. Chemical control of grasses and miscellaneous weeds.**

ANNUAL GRASS WEEDS		ANNUAL GRASS HERBICIDES	
		Trade name	Common name
Annual bluegrass	<b>Winter annual.</b> Annual bluegrass does not compete with dense, well-maintained lawns.	<b>Preemergence</b> Balan Barricade Dimension Pendulum Pre-M Ronstar Team Tupersan Weedgrass Control	benefin proflaminate dithiopyr pendimethalin pendimethalin oxidiazon benefin + trifluralin siduron pendimethalin
Crabgrass Goosegrass Foxtail Barnyard grass Fall panicum	<b>Summer annuals.</b> Preemergence applications should be made by April 1st in southern Missouri and April 15th in central and northern Missouri. Preemergence herbicides should be watered in for best results. Postemergence herbicides should be applied when annual grasses are in a 1- to 3-leaf stage for best control. Make sure the desirable grass species is not under stress. Note any temperature restrictions on the label.	<b>Postemergence</b> Acclaim Extra Daconate 6 Dimension Drive Millenium Ultra Plus Trimec Plus	fenoxaprop-ethyl MSMA dithiopyr quinclorac 2,4-D clopyralid + dicamba + MSMA MSMA + 2,4-D + MCPP + dicamba
PERENNIAL GRASS WEEDS		PERENNIAL GRASS HERBICIDES	
Bermudagrass Bluegrass Tall fescue Quackgrass Johnsongrass Nimblewill Ryegrass Smooth brome	Nonselective herbicides can be used as a spot treatment to kill patches of perennial grasses before renovating to a desirable grass species. Corsair will control tall fescue in Kentucky bluegrass. Revolver will control bluegrass, ryegrass and tall fescue in zoysiagrass and bermudagrass.	<b>Postemergence</b> Corsair Finale Quik Pro Roundup Pro Revolver Scythe	chlorsulfuron glyphosate-ammonium diquat + glyphosate glyphosate foramsulfuron pelargonic acid
MISCELLANEOUS		MISCELLANEOUS HERBICIDES	
Yellow nutsedge	Repeat applications will be required for some herbicides. Make sure desirable grass species are not under stress. Note any temperature restrictions on the label. Yellow nutsedge does not compete well with dense, well-maintained lawns.	<b>Yellow nutsedge</b> Basagran T/O Daconate 6 Manage	bentazon MSMA halosulfuron-methyl-5
Wild garlic	Use low volatile 2,4-D esters in combination with dicamba. Several applications may be required.	<b>Wild garlic</b> Vanquish + 2,4-D Ester 2,4-D Ester	dicamba + 2,4-D ester 2,4-D ester
Algae and moss	Usually grows when conditions are unsuitable for desirable grass species. Causes include soil compaction, excess moisture and shade, acid soils, low fertility. Correction of cause often eliminates moss. Apply lime regularly, aerify and improve soil drainage, air circulation and sunlight.	<b>Algae and moss</b>	See text at left.

Perennial broadleaf weeds live more than two years but may produce seeds for new plants each year. Like biennials, which require two years to complete a life cycle, they store food in fleshy roots for next year's growth. Generally, postemergence herbicides are required for control of biennials and are more effective during the first year's growth. Fall often may be a good time to apply such herbicides (see Table 1).

## Herbicide application

Although most herbicides are formulated with reliable safety factors, application rates higher than those recommended may cause injury to turf and ornamental plants. Many people overapply herbicides, especially when using fertilizer-herbicide combinations. The user needs to follow instructions on containers carefully to avoid overdoses.

*Preemergence* treatments are applied before weeds sprout from seeds. Apply two weeks ahead of germination. Less effective control may be expected if applied more than a month before germination. Applications should not be made until excess lawn clippings and leaf litter are removed. Homeowners will find many over-the-counter preemergence products at local garden centers for control of summer annual weeds. Many are often referred to as "crabgrass preventor." These products should be applied by April 15 in the northern half of Missouri; by April 1 in the southern half. Be sure to follow label recommendations for application rates and irrigation requirements. Crabgrass preventors, for control of summer annual grasses, require irrigation or rainfall to activate.

*Postemergence* herbicides containing such materials as 2,4-D, MCPP, dicamba, triclopyr, clopyralid, MCPA, MSMA and dithiopyr are applied after weeds appear. Liquid sprays can be more effective than dry materials, especially on hard-to-kill weeds. Apply postemergence materials when weeds are growing vigorously. Tough, old weeds are hard to kill, and if mature seeds are already formed, the lawn is likely to be infested again next year. Amine forms are safest because they give off fewer vapors that might damage other plants. Volatile ester formulations should not be used around ornamental plants. However, many granular products now have formulations that offer excellent control of target weeds. Select a time when winds are calm to prevent spray drift.

Using granules impregnated with herbicides near ornamentals will minimize such hazards.

Fertilizer-herbicide combinations are extremely popular because they combine two operations. Combinations with preemergence chemicals are generally effective since both fertilizer and herbicide action are dependent on contact with the soil (requiring rainfall or irrigation). Postemergence herbicide action depends more on absorption by leaves, and granules in such combinations do not adhere well to smooth-surfaced leaves. They will stick better if applied when weed leaves are damp, perhaps with morning dew. "Weed and feed" materials present a conflict in desirable actions. Proper time for weed control often does not coincide with the most desirable time and rates for fertilizing. If used for follow-up fertilizations, there is danger of herbicide overdose.

## Equipment

Fertilizer spreaders can be used for applying granular herbicides. Be sure to adjust the spreader to apply recommended rates. If possible, apply half the desired rate in one direction and the remaining half at right angles to the first application. See MU publication G6751, *Calibrating Sprayers and Spreaders for Athletic Fields and Golf Courses*, for proper calibration methods.

Gravity flow applicators, compressed-air sprayers or types attached to a garden hose are effective for liquid applications. High pressures cause mists subject to drift and should be avoided. Sprinkler cans or sprinkler nozzles attached to a gallon container can be used on small areas.

A sprayer used for application of 2,4-D and related chemicals should not be used to spray garden or flower plants. Cleaning procedures are not always reliable. To be safe, have a separate sprayer for weed-killing purposes.

Eliminating weeds is of little value unless enough desirable grass is present to fill in bare spots. A reseeding program deserves first consideration if the turf is so weak that it will not recover once weeds are eliminated. Study soil and other conditions to determine reasons for low vigor of the original turf.

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The University of Missouri intends no endorsement of commercial products or trade names.

**Available from Extension Publications**  
**1-800-292-0969**

IPM 1009 *Turfgrass and Weeds*  
G 6751 *Calibrating Sprayers and Spreaders for Athletic Fields and Golf Courses*