

at a glance

- Broadleaf plantain is a hardy perennial that thrives in lawns, pastures, orchards, roadsides, landscaped areas, footpaths, and other sites.
- Weakened grass stands are prime locations for this weed to grow and establish.

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Broadleaf Plantain (*Plantago major* L.)

Description

Broadleaf plantain is a perennial from Eurasia found throughout the world. It thrives in disturbed areas and tolerates compacted soils. The leaves are large (3–7 inches long and 1–3 inches wide) and egg shaped with prominent, nearly parallel veins (Figure 1) and long petioles (4–15 inches tall). All leaves originate from a basal rosette.

It has a fibrous root system with a short taproot. While not common, broadleaf plantain is able to reproduce from root fragments. The flowers are inconspicuous, but the seed heads are prominent, tightly held spikes that extend well above the leaves (Figure 2).

Broadleaf plantain produces up to 14,000 seeds per plant per year, which remain viable for up to sixty years. Seeds are produced on cylinder-shaped spikes from late spring to early fall. They are dispersed by birds, wind, humans, and animals. When the seeds are wet, they become sticky, allowing them to attach to animals and machinery, which aids in their dispersal. They germinate throughout the growing season when soil temperatures rise above 50°F.

This perennial weed regrows from crowns each spring. Sometimes confused with buckhorn plantain (*Plantago lanceolata* L.), broadleaf plantain has broader leaves and longer flower-head spikes.



Figure 1. The characteristic egg-shaped leaf with prominent veins makes broadleaf plantain easy to identify. Courtesy of Robert Vidéki, Doronium Kft., Bugwood.org.



Figure 2. The growing point for broadleaf plantain is below the flowers and leaves. Courtesy of Ohio State Weed Lab, The Ohio State University, Bugwood.org.

Integrated Pest Management Options

Prevention

- Apply mulch or landscape fabric to landscaping to control seedlings.
- Reduce new seeds entering the seed bank by controlling broadleaf plantain before it produces seed.

Mechanical

- Hand dig individual plants, making sure to remove as much of the root as possible.
- Mowing removes the tips of the leaves, but the meristematic tissue (where growth occurs) is low to the ground, allowing the plant to continue to grow to maturity and complete its life cycle.

Cultural

- Raise mower blades to inhibit seed germination. Suggested mower height is 2.5–3 inches for most lawns. Mowing too short weakens the grass stand and allows more sunlight to reach weed seedlings.
- Apply 0.5 lb of nitrogen/1000 sq ft for each month of actively growing grass. Distribute applications throughout the growing season.
- Deep and infrequent irrigation events encourage grass roots to grow deeper, giving them access to an increased volume of soil, water, and nutrients.
- Turfgrass struggles to grow in compacted soil. Aerating once a year (spring or fall) can help to alleviate soil compaction and make conditions more favorable for grass growth.

Biological

- None known.

Chemical

- Always read and follow pesticide label directions. Ensure that broadleaf plantain is listed as a weed that is controlled by the herbicide product you are using.
- Make certain that the product you choose is labeled for your intended use.
- Because many herbicides have significant soil activity or are volatile at higher temperatures, be careful applying herbicides near, or even in, the root zone of nontarget plants like trees, shrubs, and vegetable gardens.

- Recommended products that can be purchased by homeowners for lawns commonly contain one or more of the following active ingredients: 2,4-D, MCPP (mecoprop), MCPA, dicamba, triclopyr, carfentrazone, sulfentrazone, and quinclorac. Using products that contain multiple active ingredients is often more effective. Some examples of these products include Weed B Gon Max, Trimec, Triplet, and many others. Make sure that the product you use contains 2,4-D, as it is the most effective for controlling broadleaf plantain. In the nonturf landscape, spot treatment with glyphosate products can be effective.

Healthy desirable vegetation is the best weed preventer. First, adopt cultural management practices that maintain a healthy landscape or turfgrass. Limit areas of bare soil by maintaining a healthy lawn, covering areas between landscape plants with mulch, gravel, or other soil-covering products, and utilize efficient irrigation management practices. Second, use mechanical or chemical methods to control weeds before they produce seed. The best weed-control programs consistently use multiple control methods.

Further Reading

Broadleaf Plantain (Michigan State University): https://www.canr.msu.edu/resources/broadleaf_plantain

Broadleaf Plantain (Utah State University Extension): https://extension.usu.edu/planthealth/ipm/ornamental-pest-guide/weeds/w_broadleaf-plantain

A Northern Nevada Homeowner's Guide to Identifying and Managing Broadleaf Plantain (University of Nevada-Reno Extension): <https://extension.unr.edu/4h/pub.aspx?PubID=3370>

Ohio Perennial and Biennial Weed Guide: Broadleaf Plantain (*Plantago major*) (The Ohio State University): <https://weedguide.cfaes.osu.edu/singlerecord.asp?id=110>

Weeds: Plantain (Broadleaf, Buckhorn): *Plantago* spp. (Washington State University Extension): <https://hortsense.cahnrs.wsu.edu/fact-sheet/weeds-plantain-broadleaf-buckhorn-plantago-spp/>

ALWAYS read and follow the instructions printed on the pesticide label. The pesticide recommendations in this UI publication do not substitute for instructions on the label. Pesticide laws and labels change frequently and may have changed since this publication was written. Some pesticides may have been withdrawn or had certain uses prohibited. Use pesticides with care. Do not use a pesticide unless the specific plant, animal, or other application site is specifically listed on the label. Store pesticides in their original containers and keep them out of the reach of children, pets, and livestock.

Trade Names—To simplify information, trade names have been used. No endorsement of named products is intended nor is criticism implied of similar products not mentioned.

Groundwater—To protect groundwater, when there is a choice of pesticides, the applicator should use the product least likely to leach.

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