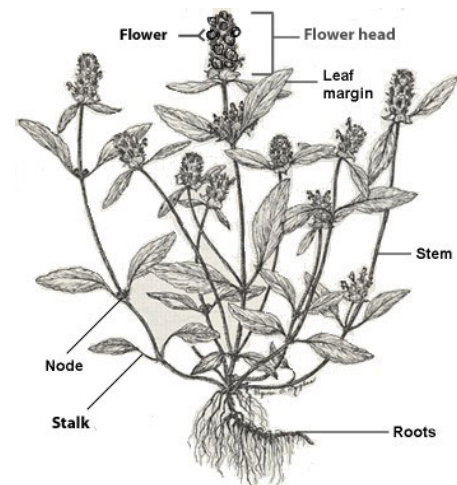


BROADLEAF WEEDS

TITLE:	BROADLEAF PLANTAIN
LATIN NAME:	<i>Plantago major</i>
FAMILY:	Plantaginaceae
OVERALL DESCRIPTION:	
A common weed in turfgrass, nurseries, and landscapes. Can tolerate very low mowing heights. Germinates from seed in late spring and grows through mid-to-late summer and occasionally in the fall depending on temperature and moisture.	
LIFE CYCLE	Perennial
SEASONS OF GROWTH	Spring through early fall. Leaves die back during and sprouts occur around mid-spring.
FLOWERS / SEEDHEAD	Long, leafless flower-stalks rise from the center of the leafy rosette. Small, whitish petals emerge from the flower-stalk. Up to 30 seeds are produced in an oval-shaped capsule at the end of the flower.
LEAF SHAPE	Elliptic to oval
LEAF EDGES	Wavy, rarely toothed.
LEAF ARRANGEMENT	Whorled rosette.
GROWTH HABIT	Basal rosette with leaves grows flat along the turfgrass canopy or more erect and upright depending on mowing practices.
FULL LEAF SIZE	Leaves are six inches long and four inches wide to the stem. Leaves can be hairy once mature.
STEM CHARACTERISTICS	Long, broad-leaf stems or petioles that grow up to 6 inches long.
ROOT	Taproot with fibrous roots
ANY OTHER DISTINGUISHING TRAITS	Leafless flower stalks can appear spiky and much taller than rest of the plant.



Common Typical Broadleaf Weed Structure

TYPE OF SOIL CONDITIONS OR PRACTICES FAVORING GROWTH	Commonly occurs in moist areas with full sun or partial shade. Grows best in nutrient-rich moist soils but tolerates heavily compacted soils, wet soils, and dry soils.
KEY MESSAGE TO HOMEOWNER	Very difficult to eradicate. Broadleaf plantain can produce up to 14,000 seeds per plant per year and seeds may remain viable for up to 60 years.
CULTURAL CONTROL	<ul style="list-style-type: none"> • In general, mowing high will promote healthy turf, which will help fight weed development. Mowing will not eliminate Broadleaf Plantain once developed, since the leaves lie close to the ground. • Remove any new plantain seedlings and more mature plants before they produce seed. Controlling mature plantain plants when only relying on hand-pulling, digging, or hoeing is difficult due to persistent crowns. • Monitoring the area for several months and removing new is most successful in a home garden or lawn. • To reduce the spread of plantain and other weeds, clean equipment prior to use in a new area. Seeds are tiny and like dust, cling. Elimination before seed dispersal will deter spread. • Once established, digging out perennial plantain plants must be done regularly for several years to be successful. Once these weeds are eradicated, areas should be renovated and managed to establish a healthy turfgrass.
BIOLOGICAL CONTROL	None noted.
CHEMICAL CONTROL	For post-emergent treatment in lawns, use a product with the active ingredient 2, 4-D, in combination with any of the following: Dicamba, MCPP, Triclopyr, or Penoxsulam. (2021 Virginia Cooperative Extension Pest Management Guide)
SOURCES OF INFORMATION	<p>Turfgrass Science at Purdue University, https://turf.purdue.edu/broadleaf-plantain/?cat=106</p> <p>Ohio State University Agricultural Research and Development Center https://www.oardc.ohio-state.edu/weedguide/single_weed.php?id=110</p> <p>University of Massachusetts, Amherst; Umass Extension Turf Program, Broadleaf Plantain in Lawns https://ag.umass.edu/turf/fact-sheets/broadleaf-plantain-in-lawns</p> <p>Agriculture and Natural Resources, University of California http://ipm.ucanr.edu/PMG/PESTNOTES/pn7478.html</p> <p>VCE, Pest Management Guide (PMG) Home Grounds and Animals, 2021 https://fairfaxgardening.org/wp-content/webdocs/ref/2021PestManagementGuide.pdf</p>
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