



Annual Bugloss

(*Anchusa arvensis*)

Description:

Annual bugloss (*Anchusa arvensis*) is annual, weedy plant that grows from 6 to 24 inches tall and has branching erect or sprawling stems. Larger plants may measure 3 feet in diameter. Both leaves and stems appear rough and wrinkled and are covered with bristly hairs that arise from warty bumps. Alternate, stiff, lanced shaped leaves grow 1 to 2 inches long, with wavy, entire or slightly toothed margins. Leafy, coiled flower stems bear small, sky-blue flowers. The flowers are tube shaped with 5 unequal pale blue lobes flaring from a white center. Each flower produces four nutlets, each containing a seed. Ninety percent of annual bugloss seeds buried 6 inches deep remain viable in the soil after 3 years.



Photo by Leo Michels

Impacts:

Annual bugloss invades fields, pastures, and competes with more desirable vegetation such as native plants and crops. Annual bugloss is in the borage family, of which many species contain pyrrolizidine alkaloids which are toxic to livestock and humans. Because annual bugloss seeds can remain dormant for many years, it has become a pesky, persistent weed problem.

Control Options:

Thurston County's Integrated Pest Management emphasizes cultural, biological, and manual control methods to keep pests and vegetation problems low enough to prevent damage. The strategy of Thurston County's IPM policy is to minimize the use of pesticides.

► Cultural / Habitat

The most effective control of annual bugloss is prevention. Above all, prevent plants from going to seed. Occasionally it is introduced as a component in wildflower seed mixtures. Review the ingredients of wildflower mixes to avoid accidental introduction, and avoid using wildflower mixes with unidentified seed components entirely. To prevent plants from spreading from known infestations, carefully clean vehicles, boots, clothing, and pets after visiting infested areas.



Photo by Leo Michels

► Manual / Mechanical

Manual control is effective for Annual bugloss. Small populations (30 to 50 plants, or even more if the site conditions allow it) can be easily pulled or dug. Be sure to wear gloves when handling plants, as the bristly hairs can be painful and may cause skin irritation.

► Biological

There are currently no known biological control agents available for annual bugloss.

► Chemical

Spot spraying with an herbicide containing the active ingredient **glyphosate** (examples: Roundup Pro[®], Eliminator Weed and Grass Killer[®], Remuda[®] etc.) can be effective in controlling annual bugloss. Currently, herbicides containing glyphosate are the only products for the control of annual bugloss that are considered to be effective and also appropriate for homeowner use. Due to recent health reviews, Thurston County recognized some scientific studies have concluded the use of glyphosate products have carcinogenic potential. The risk of spot spraying with these products is considered to be low provided the applicator uses personal protection equipment which includes chemically resistant gloves in addition to long sleeve shirt, long pants, socks and shoes and all other label precautions are followed.



Thurston County has observed that most ready-to-use, pre-mixed products do not contain sufficient active ingredients to be as effective as concentrated products that are then mixed with water to create a specific finished concentration. The following instructions are for products containing 41% glyphosate which will be mixed down to a specified dilution rate. Similar products may be significantly different in strength. Be sure to read your label carefully, and make adjustments to rates accordingly.

Foliar applications of glyphosate (Roundup Pro[®], Eliminator Weed and Grass Killer[®], etc.):

- Using a spot application, spray each plant thoroughly on the stems and leaves, enough to be wet but not dripping. Spot application means the herbicide is applied only to the target plants, and not on the surrounding plants or soil.
- A 2% glyphosate solution (after mixing for use) is necessary to control Annual Bugloss. Follow label directions for mixing product to application strength.
- Glyphosate is non-selective, and will injure any plants that it comes in contact with, including grass.
- Keep people and pets off treated areas until spray solution has dried.

Timing: Spot applications should be applied at bud stage, prior to blooming. Annual bugloss blooms from June until a hard frost. For most effective treatments, apply before plants produce seed.

Pollinator Protection: To minimize negative impacts to bees and other pollinators, treatment prior to blooming is recommended. Removal of flowers before treatment can be an option in some situations. If treatment must occur during the blooming period, try to spray early or late in the day or on cloudy, cool days when pollinators are least active.

READ AND FOLLOW ALL LABEL DIRECTIONS AND RESTRICTIONS. Obey all label precautions in-

Product/Method	Rates	Mix (1 oz = 2 Tablespoons)
Glyphosate Roundup Pro [®] , Eliminator Weed & Grass Killer [®] , Remuda [®] etc	2%	To 1 gallon of water add 2.66 oz. glyphosate concentrate. Apply to foliage at or beyond bud stage.

cluding site specific and safety measures. Always use personal protective equipment that includes coveralls, chemical resistant gloves, shoes plus socks, and protective eyewear. Use of brand names does not connote endorsement and is for reference only; other formulations of the same herbicides may be available under other names. Information provided is current as of the date of the fact sheet. Pesticide product registration is renewed annually. Product names and formulations may vary from year to year.

REFERENCES:

USDA Natural Resources Conservation Service Plant Profile: <http://plants.usda.gov/java/profile?symbol=ANAR16>

Written Findings of the Washington State Noxious Weed Control Board http://www.nwcb.wa.gov/siteFiles/Anchusa_arvensis.pdf

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Thurston County Noxious Weed Control
9605 Tilley Road S.
Olympia, WA 9812
Phone: 360-786-5576
TTY/TDD - Call 711 or 1-800-833-6388
tcweeds@co.thurston.wa.us
www.co.thurston.wa.us/tcweeds