



INTEGRATED PEST MANAGEMENT PRESCRIPTION

Field bindweed or Morning glory

Description:

Field bindweed (*Convolvulus arvensis*), also known as morning glory, European bindweed, or creeping jenny is a broad leaved, perennial plant that is native to Europe and is now found throughout the world. In its first year it can grow from seed into a plant with a root system five feet deep and ten feet in diameter with many plant shoots. Each plant will store nutrients in the root system that can reach depths of greater than fifteen feet and will grow new plants wherever the root is broken.

Field bindweed grows long, twisting, vine-like stems that form tangled mats along the ground or climb up and around nearby plants and structures. It has trumpet shaped flowers that are mostly white but may contain pink, and are about an inch or two in diameter. The flowers usually emerge individually on the stem but may be in groups of 2 or 3. Leaves are deep green, can be smooth or have fine hairs, and are an arrowhead shape. Seeds are produced at the base of the flower in a pair of seed pods that contain 1 to 4 seeds each. Each plant can produce as many as 500 seeds that can sprout for over 50 years.



The plants grow rapidly from seeds and within a month can produce root buds that can grow new plant shoots. New plants also develop from broken roots. Root systems of field bindweed can be in excess of 5 tons per acre.

Impacts:

Field bindweed is one of the most problematic weeds in the world. Due to its rapid growth and ability to grow over anything, this weed can out-compete many favorable plants. Once established, these weeds can cause considerable crop damage or loss. It can also be very difficult to permanently remove in residential settings.

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. When chemical control is considered, the least toxic product is recommended when no other control methods would be effective or practical.

► Cultural / Habitat

Plastic tarps and landscape fabric covered with several inches of mulch can be effective in controlling field bindweed as long as they remain intact for 3 to 5 years. If the tarp is removed seedlings or shoots will emerge and produce new plants. Any area that has been controlled, by any option, will require monitoring and removal of new seedlings.

Planting competitive crops, like alfalfa, has helped field bindweed control efforts in agricultural settings by blocking out sun in areas where the weed has been removed. After removing large plants and root systems from any area, replant with a complete groundcover and remove any new bindweed shoots and seedlings as they emerge.

► Manual / Mechanical

Physical removal of mature plants and available roots can ultimately exhaust the plant's nutrient reserves but rarely achieves permanent control due to partial root removal. Digging out the entire root system of bindweed is nearly impossible. Removal of new seedlings requires a lot of effort but can be effective in conjunction with other control efforts that target parent plants.





► Biological

No biological controls have proven to be effective in controlling field bindweed. Sheep, European moths (as caterpillars), tortoise beetles, and gall forming mites have been introduced for bindweed control, but have had little success.

► Chemical

Using an herbicide on mature bindweed will kill the plants but will not kill the seeds or stop them from sprouting. However, combining the use of herbicides with non-chemical control methods will work best for long-term removal. Follow any herbicide treatment with vine removal and replant the area with a dense fast-growing native groundcover or cover the area with at least six inches of mulch. Also, monitor the area every two to three weeks and remove seedlings to avoid perennial root buds from forming and sending up new plant shoots.

A systemic herbicide is recommended for the control of field bindweed. Systemic herbicides are absorbed into plant tissue and are distributed to all parts of the plant. Field bindweed plants can produce shoots from their roots so, it is important to use an herbicide that will move into the root system and kill the entire plant. Contact herbicides are not recommended for control of field bindweed because they only kill the parts of the plant that are sprayed leaving the roots to produce new shoots.

Glyphosate is an active ingredient in many systemic herbicide products that are effective in the control of bindweed. Applications using a hand-held sprayer with a 1.5% glyphosate concentration are recommended. Spray the entire plant until it is wet but not dripping and follow label directions to mix herbicide to desired concentration. Because glyphosate products are non-selective you must shield any desirable plants from overspray or they will likely die or get injured.

Timing:

To chemically control field bindweed, spray established plants when they are at or beyond full bloom (best results are achieved by spraying in the late summer or in the fall before the first frost). Once the seeds are produced chemicals can kill the plant and not affect the seeds, so, spraying the plants before the seeds are fully developed will help minimize the number of seedlings the next year.

Early in spring, look for seedlings and either dig them out or chemically control them.

READ AND FOLLOW ALL PESTICIDE LABEL DIRECTIONS AND RESTRICTIONS. All chemical control products can cause harm if not used properly.

REFERENCES:

Swan, Dean G. Cooperative Extension College of Agriculture and Home Economics, Washington State University. Field Bindweed (*Convolvulus arvensis* L.). EB1540. Published 1989.

Oregon State University. PNW Weed Management Handbook. PNW Weeds – Control of Problem Weeds; Bindweed, field or perennial morning glory. <http://pnwpest.org/pnw/weeds>. 2007.

North Dakota Department of Agriculture. Invasive Species Web-Based Manual; FIELD BINDWEED (*Convolvulus arvensis*). <http://www.agdepartment.com/noxiousweeds/>. 2003.

Elmore, C.L., Cudney, D.W. University of California – Davis, Agriculture and Natural Resources. UC IPM Online; Pests in Gardens and Landscapes – Field Bindweed. Published 4/03.

Tenaglia, D. *Convolvulus arvensis* L. http://www.missouriplants.com/Whitealt/Convolvulus_arvensis_page.html. 2/8/2007.



Thurston County Public Health & Social Services
412 Lilly Road NE
Olympia WA 98506
Phone: 360-867-2586
T.D.D. 360-867-2603
www.co.thurston.wa.us/health/ehipm/index.html