

Management of *Alliaria petiolata* (Garlic Mustard)



Lewis and Clark County Noxious
Weed Control District
3402 Cooney Dr Helena | MT 59602

Lewis and Clark County Listed Noxious Weed

Plant Description

Alliaria petiolata, garlic mustard, is a short-lived perennial to biennial. First year plants form a rosette and second year plants bolt, bloom, and produce seeds. The leaves are alternate and toothed along the margins. Garlic Mustard flowers are white with four petals and alternate up the stem. Stems grow 15-90 cm tall. Each plant produces thousands of seeds which can remain viable in the soil up to five years.

Mechanical Control

Hand removal may provide effective control for small infestations but may not provide control on well-established infestations due to resprouting from buds on the root crown; remove as much root material as possible. Mowing may provide a reduction in seed development but must be conducted prior to the flower stage and repeated throughout the growing season.

Biological Control

There is currently no available biological control for Garlic Mustard.

Cultural Control

Controlled burns of large infestations for two consecutive years may provide effective rosette control. If the fire temperature is not hot enough, garlic mustard plants may not be killed and seedling establishment may be more likely. Livestock generally avoid grazing but it is not known to be toxic. Revegetation is important. Introduce desirable species, especially in areas with disturbance. Plant competition prevents invasions of new and existing unwanted vegetation.



Recommended Treatment Timeline			
Control Type	Spring	Summer	Fall
Mechanical	Hand pull, bag and dispose, Mow	Hand pull, bag and dispose, Repeated mowing	Hand pull, bag and dispose, Repeated mowing
Biological	None available		
Cultural	Controlled burn, Revegetation		Controlled burn, Revegetation
Chemical	Foliar spray		Foliar spray

Chemical Control

Follow the directions on herbicide labels, the label is the law. Calibrate equipment for accurate application. Commonly used herbicides are listed below, order of listing is not reflective of efficacy or recommendation.

Personal protective equipment must be worn when applying herbicides. Only apply herbicides in appropriate weather conditions.^o

Use appropriate surfactants as listed in the product label.^o

^oRead and follow all instructions in the label of the herbicide.

Chemical Control Table

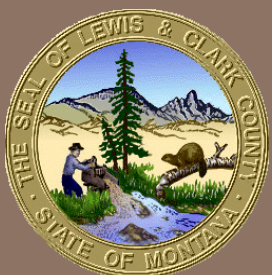
Use Site	Herbicide (Active Ingredient - Trademark)	Pre-emergent or Soil Residual Activity	Post-emergent (Foliar Applied)	Large Sprayer Rate per Acre	Spot Treatment Rate for Every 1 Gallon of Water	Restricted Entry Interval (Hours)	Application Notes and Environmental Advisories*
Forest use sites, Non-Cropland areas, ROW, Grazed areas on listed use sites	Triclopyr - Garlon 4 Ultra ^b	no	yes	8 oz (0.48 lb a.e./A)	1.25 - 2.5% v/v solution	48*	Apply in spring when plants are in the rosette stage. Spray-to-wet application. Toxic to fish. Groundwater and surface water advisories.
Rangeland, Non-Cropland, ROW	Metsulfuron methyl - Escort XP ^b	no	yes	0.5 - 1 oz	1 gram	4	Apply in early spring or fall. Groundwater and surface water advisories. Non-target organism advisory. Windblown soil particle advisory.
Ornamentals	Glyphosate - Roundup ProMax ^b	no	yes	1 - 2 qt (Roundup ProMax ^b)	1.5% v/v solution (Roundup ProMax ^b)	4	Apply on rapidly growing plants before flowering. Surface water advisory.

^bLewis and Clark County Noxious Weed Control Division does not endorse any trademarks or commercial names listed above.

This table summarizes selected registered use sites and is not intended to represent all approved uses. Pesticide applicability, use sites, and restrictions vary by product and formulation. Applicators must consult and follow the most current product label, which takes precedence over this document.

References

- Bayer Cropscience. (2020). *Roundup ProMax*. U.S. Environmental Protection Agency Registration No. 524-579.
- Corteva Agriscience. (2023). *Garlon 4 Ultra*. U.S. Environmental Protection Agency Registration No. 62719-527
- Ditomaso, J. M., Kyser, G. B., Oneto, S. R., Wilson, R. G., Orloff, S. B., Anderson, L. W., Wright, S. D., Roncoroni, J. A., Miller, T. L., Prother, T. S., Ransom, C. V., Kenneth George Beck, Duncan, C. A., Wilson, K. A., J Jeremiah Mann, Department, Davis., & Weed, Davis. (2013). *Weed control in natural areas in the Western United States*. University Of California Weed Research And Information Center. 62719-259.
- Envu. *Escort XP*. U.S. Environmental Protection Agency Registration No. 101563-167.
- Garlic Mustard — *Alliaria petiolata*. Montana Field Guide. Montana Natural Heritage Program. <https://FieldGuide.mt.gov/speciesDetail.aspx?elcode=PDBRA01010>



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