

Management of *Bassia scoparia* (kochia)



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

Plant Description

Bassia scoparia, kochia, is a taprooted annual plant that typically flowers in late summer to early fall. The flowers lack petals and the fruits have five thick, knoblike lobes. The leaves are mostly alternate, flat, and linear with a gray-green color and soft hairs. The plant turns red with age. Stems are branched and grow 15-100 cm. Kochia seeds remain viable in soil for 1-2 years on average.

Mechanical Control

Hand removal can provide effective control for small infestations; the taproot should be severed below the soil surface to prevent regrowth. When pulled prior to flowering, kochia plants may be left on site due to the annual life cycle. Mow prior to the flower stage to reduce seed production and frequently mow thereafter to limit regrowth. Early spring tillage may control seedlings, but repeated tillage throughout the growing season is required for effective control.



Biological Control

There is currently no biological control agent available for kochia.

Cultural Control

Intensive grazing can reduce kochia populations. However, kochia contains mild toxins and can accumulate nitrates at levels that are toxic to livestock when consumed in large quantities. Re-establishment of desirable plant communities provides competition that reduces and helps prevent further kochia spread.



Recommended Treatment Timeline			
Control Type	Spring	Summer	Fall
Mechanical	Hand pull, Mow, Till	Hand pull, Mow	Hand pull, Mow
Biological	None available		
Cultural	Graze, Revegetation	Graze	Graze, 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.^a

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

^aRead 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*
Turfgrass	2,4-D Amine - Gordon's 2,4-D Amine ^b	no	yes	1 - 2 qt	1 fl oz per 1,000 sq ft for turfgrass (Gordon's 2,4-D Amine). Consult product label for other trade names	48	Apply from rosette to beginning of bolting or to fall rosette stage, not necessarily for season long control. Toxic to fish and aquatic invertebrates. Groundwater and surface water advisories.
	2,4-D Amine, Dicamba, MCPA - Gordon's Trimec Broadleaf Herbicide b	no	yes	Consult label	Consult label	48	Do not broadcast apply when air temperatures exceed 90°F. Apply before the flowering stage to prevent seed production; best applied to young plants from the rosette to bolting stage. Toxic to fish and aquatic invertebrates. Groundwater and surface water advisories.
	Fluroxypyr - Vista XRT ^b	no	yes	12 oz - 22 oz	Consult label	24	Use lower rate for seedlings and young plants and infestations. Use a higher rate for more established plants. Tank mixing with 2,4-D ester will improve performance. Add a methylated seed oil at following rates; 0.32 oz/gal water or 1 qt/100 gal water. No grazing restrictions. Do not apply 7 days before haying. Toxic to fish. Non-target organism advisory. Surface water advisory.
Pasture, Rangeland, Hay, Non-cropland	Dicamba - WeedMaster	no	yes	0.5 - 2 pt (0.25 to 1 lb a.e./A)	Calibration necessary	24	Apply from rosette to beginning of bolting, or to fall rosette stage. Optimal at early flowering stages. Use a lower rate for seedlings and actively growing plants and higher rates for established growth. Toxic to fish and aquatic invertebrates. Groundwater and surface water advisories.
Rangeland, Barrow Ditches, Rights-of-way, Fencerows, Natural Areas, Grazed Areas	Fluroxypyr - Vista XRT ^b	no	yes	12 oz - 22 oz	Consult label	24	Use a lower rate for seedlings and young plants and infestations. Use a higher rate for more established plants. Tank mixing with 2,4-D ester will improve performance. Add a methylated seed oil at the following rates; 0.32 oz/gal water or 1 qt/100 gal water. No grazing restrictions. Do not apply 7 days before haying. Toxic to fish. Non-target organism advisory. Surface water advisory.
Ornamentals	Glyphosate - Roundup ProMax ^b	no	yes	1 - 2 qt (Roundup ProMax ^b)	1.5% v/v solution (Roundup ProMax ^b)	4	Nonselective. Apply when plant is rapidly growing. It will not kill seeds. 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. (2022). *Vista XRT*. U.S. Environmental Protection Agency Registration No. 62719-586.
- 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., Prather, 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.
- Nufarm. *WeedMaster*. U.S. Environmental Protection Agency Registration No. 71368-34.
- PBI Gordon Corporation. *Gordon's Amine 400 2,4-D Weed Killer*. U.S. Environmental Protection Agency Registration No. 2217-2.
- PBI Gordon Corporation. *Trimec Classic Broadleaf Herbicide*. U.S. Environmental Protection Agency Registration No. 2217-543.

