

# KOCHIA

## *Kochia scoparia* (L.) Schrad.

**Family:** *Chenopodiaceae* (Goosefoot).

**Other Scientific Names:** None.

**Other Common Names:** Summer cypress, burning bush, fireweed.

**Legal Status:** Regional Noxious: Peace River.



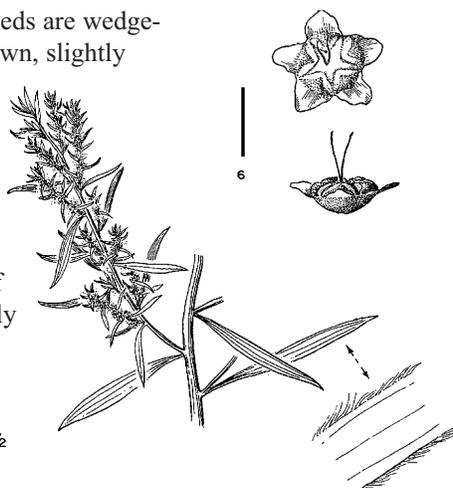
## Identification

**Growth form:** Annual forb.

**Flower:** Flowers are inconspicuous, stalkless in the axils of upper leaves, and form short, dense, bracted spikes (Whitson et al. 1996).

**Seeds/Fruit:** Seeds are wedge-shaped, dull brown, slightly ribbed.

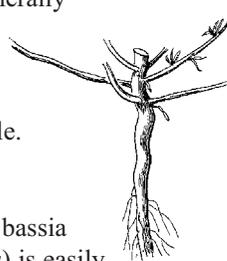
**Leaves:** Leaves are 2–6 cm long, alternate, and lance-shaped. The upper surface of the leaf is usually smooth, while the lower surface is covered with soft hairs.



**Stems:** Mature plants are 0.3–1.5 m tall with numerous branches. Stems are erect and simple to branched, and often form pyramidal or rounded tops. Stems are usually hairy but are occasionally smooth.

**Roots:** Taproots generally penetrate to depths of 2.0–2.4 m.

**Seedling:** No information available.



### Similar Species

**Exotics:** Five-hook bassia (*Bassia hyssopifolia*) is easily distinguished from kochia by the 5 hooked structures on each seed. This plant is infrequent in south-central and southeast BC (Douglas et al. 1998).

**Natives:** None known.

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## Impacts

**Agricultural:** Although palatable to livestock, kochia sometimes contains high nitrate levels and sulphate toxicity (Whitson et al. 1996).

**Ecological:** Colonizes rapidly and may suppress other vegetation. An early successional plant on disturbed

sites and can dominate vegetation for the first 2 years following disturbance (FEIS 1996). Kochia may spread into undisturbed sites when growing conditions are ideal.

**Human:** No information available.

## Habitat and Ecology

**General requirements:** Locally common in dry areas of the Interior in roadsides, ditches, and disturbed habitats (Parish et al. 1996), kochia is generally found in open, unshaded areas on disturbed sites. It grows on a variety of soil types and is often found on saline/alkaline soils (FEIS 1996). Kochia can also be found in grasslands, mixed-grass prairie, shortgrass

prairie, flood plains, riparian areas, sagebrush, and desert shrub communities.

**Distribution:** Frequent in south-central BC but rare in southwestern and northwestern regions (Douglas et al. 1998). It is present in the Kootenay, Okanagan, and Thompson agricultural reporting regions but is considered a major concern only to the Peace River.

It is found in all but some of the Atlantic provinces and is widespread in the western US.

**Historical:** Introduced from Eurasia.

**Life cycle:** Seedlings emerge early in the spring. Flowering and seed production may occur from July to October. Kochia appears very responsive to elevated soil nitrogen levels. It often grows vigorously for 1–2 years in abandoned fields until nitrogen is depleted. Kochia is rarely a problem in vigorous stands of perennial grasses.

**Mode of reproduction:** By seed.

**Seed production:** Seed production can vary widely among individual plants from 5 seeds/plant to over 50,000 seeds/plant. Typically, a single plant will produce about 14,600 seeds/year.

**Seed bank:** Seeds are not persistent in the seed bank and decay in one year (FEIS 1996).

**Dispersal:** Primarily by breaking off at the stem and tumbling.

**Hybridization:** No information available.

## Management

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**Biocontrol:** None.

**Mechanical:** Grazing or mowing alone will not manage kochia or stop seed production (FEIS 1996). Small infestations can be pulled by hand.

**Fire:** No information available.

**Herbicides:** Spring applications of dicamba, glyphosate, and a combination of metsulfuron-methyl and dicamba have been effective for management in the US (Whitson et al. 1996). Consult the most recent edition of BC Ministry of Agriculture, Food and Fisheries Crop Production Guides for specific recommendations. **Before applying herbicides, read the label for full use and precautionary instructions.**

**Cultural/Preventive:** Minimize disturbance and seed

dispersal, eliminate seed production, and maintain vigorous perennial plant communities. Seed disturbed areas to perennial grass to promote competition.

### Integrated Management Summary

Integrated management should focus on eliminating seed production and depleting the seed bank. Combine herbicide or mechanical removal of rosettes with removal of seed heads from any plants that have bolted. Seed disturbed areas to perennial grasses.

## References

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Douglas, G. W., D. Meidinger, and J. Pojar, eds. 1998. *Illustrated Flora of British Columbia*. Vol. 2: *Dicotyledons (Balsaminaceae through Cuscutaceae)*. Province of British Columbia.

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Whitson, T. D. (ed.), L. C. Burrill, S. A. Dewey, D. W. Cudney, B. E. Nelson, R. D. Lee, R. Parker. 1996. Kochia. *Weeds of the West*. Western Society of Weed Science, in cooperation with the Western United States Land Grant Universities Cooperative Extension Services, Newark, CA.

