

# CLEAVERS

## *Galium aparine* L.

**Family:** *Rubiaceae* (Bedstraw).

**Other Scientific Names:** None.

**Other Common Names:** Bedstraw, white hedge.

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



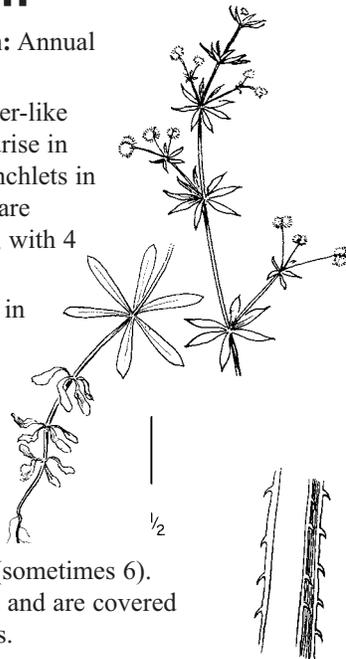
### Identification

**Growth form:** Annual forb.

**Flower:** Saucer-like flowers are stalked and arise in clusters of 3–5 from branchlets in most leaf axils. Flowers are white, 1.6–2.0 mm wide, with 4 lobes.

**Seeds/Fruit:** Nutlets are in pairs, 3–5 mm wide, covered in short, hooked hairs.

**Leaves:** The few basal leaves soon wither. The narrow stem leaves, 1–4 cm long, are in whorls of 8 (sometimes 6). Leaves have pointed tips and are covered with bristly, hooked hairs.



**Stems:** Solitary stems are weak with few branches and may be climbing or prostrate, 10–100 cm long. Stems are square with short, backward-pointing hairs at the base of each leaf.

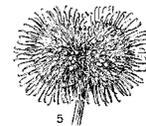
**Roots:** Annual taproot.

**Seedling:** The cotyledons (seed leaves) are rounded with a notch at the tip. The first leaves appear in a whorl of 4 and have spines on the tips (Royer and Dickinson 1999).

### Similar Species

**Exotics:** False cleavers (*Galium spurium*) closely resembles cleavers, but it has smaller (1.0–1.5 mm wide), greenish cream flowers with smaller nutlets (1.5–3.0 mm long).

**Natives:** Seven *Galium* species are native to BC, and all have square stems with leaves in whorls. Only one, *Galium bifolium*, is an annual, and its leaves are in whorls of 4 instead of 8.



### Impacts

**Agricultural:** Problematic in forage, grain, and canola crops. It is a competitive plant that reduces yield, becomes entangled in harvesting equipment, and reduces the quality and value of crop seed. It is a contaminant in canola, where it reduces the value of the seed and reduces the quality of the pressed oil.

**Ecological:** Occurs in non-cultivated areas such as fields, thickets, open forests, and rocky bluffs. Cleavers clings to other plants while it competes for light, moisture, and nutrients.

**Human:** Fruits are used as a coffee substitute.

### Habitat and Ecology

**General requirements:** In BC, found in moderately dry to moist fields, lawns, gardens, disturbed areas, beaches, and open forests at low- to mid-elevations (Douglas et al. 1999). Adapted to damp, moist soil (Alberta Agriculture 1983).

**Distribution:** Found in all areas of the province but

considered a major concern in the Peace River region.

**Historical:** Introduced from Europe.

**Life cycle:** An annual plant that usually completes its life cycle in one year but can overwinter and grow as a winter annual. Most seedlings emerge in mid-spring, but seeds continue to germinate through the summer.

Plants flower from June through August, and seed is produced from August until frost (Alberta Agriculture 2001).

**Mode of reproduction:** By seed.

**Seed production:** A single plant can produce 3,500 seeds (Alberta Agriculture 2001).

**Seed bank:** Seed can remain viable up to 6 years.

**Dispersal:** Cleavers seeds are similar in size and shape to canola seed and cannot be easily separated mechanically. Planting contaminated canola is the main source for spread, but harvesting equipment, animals, humans, and contaminated animal manure can also disperse the seeds.

**Hybridization:** Little evidence.

## Management

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**Biocontrol:** None.

**Mechanical:** Tillage can manage emerging seedlings at pre-seeding, post-seeding, in the autumn, or on summerfallow. Tillage at some stages may encourage weed germination, so a second cultivation may be required. Tilling on summerfallow can prevent seed production and is most effective under warm, dry conditions so the plants cannot re-root. Mowing will not control cleavers because of the plant's prostrate growth habit.

**Fire:** Not managed by fire.

**Herbicides:** Many herbicides and herbicide mixes are used to manage cleavers in cereal crops. Herbicides are also available for control in canola varieties resistant to specific herbicides such as glyphosate, glufosinate ammonium, and imazethapyr. 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:** Rotations that include summerfallow, cereals, or annual and perennial forages can effectively manage cleavers populations (Alberta Agriculture 2001). Planting with certified weed-free seed, cleaning farm equipment, and composting manure before spreading also will reduce spread.

### Integrated Management Summary

Manage cleavers for prevention and early control and eradication. Use certified weed-free seed. Till soils to manage emerging seedling and spray appropriate herbicides as required.

## References

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Alberta Agriculture. 1983. *Weeds of Alberta*. Agdex 640-4.

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Douglas, G. W., D. Meidinger, and J. Pojar. 1999. *Illustrated Flora of British Columbia*. Vol. 4: *Dicotyledons (Orobanchaceae through Rubiaceae)*. Province of British Columbia.

Malik, N., and W. H. Vanden Born. 1988. The biology of Canadian weeds. 86. *Galium aparine* L. and *Galium spurium* L. *Canadian Journal of Plant Science* 68: 481–499.

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