

# CHEATGRASS

## *Bromus tectorum* L.

**Family:** *Poaceae* (Grass).

**Other Scientific Names:** None.

**Other Common Names:** Downy brome, downy chess, early chess, drooping brome, downy cheat, slender chess, downy brome grass, military grass, broncgrass, Mormon oats.

**Legal Status:** Not categorized.



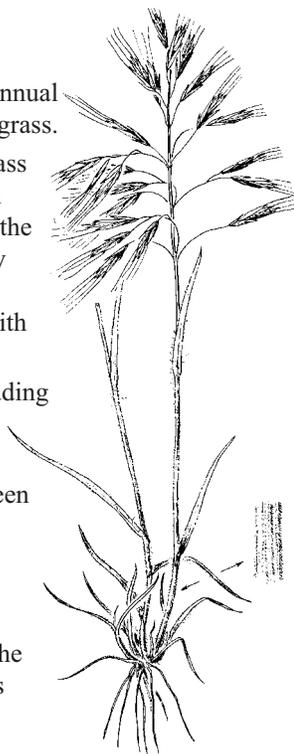
## Identification

**Growth form:** Annual or winter annual grass.

**Flower:** Cheatgrass panicles change colour from green to purple to brown as the plant matures and eventually dries. Branches are slender, drooping, hairy, flexuous, with up to 8 spikelets.

**Seeds/Fruit:** Spikelets including awns are 2–5 cm long, nodding, with 2–8 florets.

**Leaves:** Leaves are light green and hairy. Sheaths are fused except near the node at the bottom of each sheath. The lower sheaths are conspicuously hairy, while the upper sheaths are sometimes smooth.



**Stems:** Mature plants are generally 10–75 cm tall. Stems are erect, slender, glabrous, or slightly hairy.

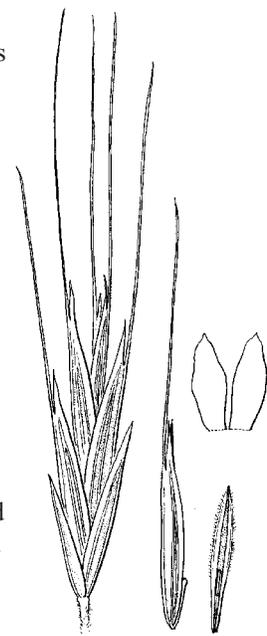
**Roots:** The finely divided fibrous root system typically reaches a depth of about 30 cm but can grow to 150 cm deep in the field (Hironaka 1961; Hulbert 1955).

**Seedling:** Distinguished by hairy leaf blades and sheaths.

### Similar Species

**Exotics:** Similar to Japanese brome (*Bromus japonicus*) and rye brome (*Bromus secalinus*).

**Natives:** None known.



## Impacts

**Agricultural:** Cheatgrass can be troublesome in winter wheat and other crops. Awns many injure livestock and animals' eyes and mouths, but the plant has good spring forage values before seed-set (Stubbenieck et al. 1997).

**Ecological:** Can form dense stands on sites that were previously disturbed, especially overgrazed areas.

The plant competes effectively for moisture with climax dominants such as bluebunch wheatgrass (*Elymus spicatus*) and can interrupt the rate of successional change from low stages of succession to higher stages of succession for long periods of time (Harris 1967).

**Human:** No information available.

## Habitat and Ecology

**General requirements:** In BC, cheatgrass grows at low- to mid-elevations at the coast, and in the grasslands and dry forests of the Interior. It is common in recently burned rangeland, winter crops, disturbed areas, abandoned fields, eroded areas, and overgrazed

grasslands (Upadhaya et al. 1986). It can invade rangelands that have never been grazed by livestock (Svejcar and Tausch 1991).

**Distribution:** Cheatgrass is common in southern parts but rare elsewhere in the province (Douglas et al. 1990)

It is present in all agricultural reporting regions except the Peace River but is not considered a major concern in any region.

**Historical:** Introduced from Eurasia, possibly in ship ballast. Found at Spences Bridge as early as 1890 (Mosley et al. 1999).

**Life cycle:** A winter annual that can germinate in autumn or spring when soil moisture is adequate. Autumn-germinated plants will establish a root system that allows the plant to take early advantage of spring moisture. Seeds mature about 2 months later (Upadhaya et al. 1986; Stubbendieck et al. 1997).

Plant heads appear in late April to early May, followed

by flowering within a week, and seeds mature in mid- to late June (Upadhaya et al. 1986).

**Mode of reproduction:** By seed.

**Seed production:** Cheatgrass can produce up to 450 kg seeds/ha, depending on plant density and environmental conditions (Upadhaya et al. 1986).

**Seed bank:** Generally a low retention of seeds in the soil because of high germination rates.

**Dispersal:** Seeds are dispersed short distances by wind, but the awns can attach to fur or clothing.

**Hybridization:** No information available.

## Management

**Biocontrol:** None. Controlled livestock grazing can help regulate cheatgrass populations, but grazing prescriptions depend on the mixture of plants in the plant community.

**Mechanical:** Ponzetti (1997) reported that repeated mowing every 3 weeks during spring and summer was as effective at managing seed production, but this method was labour-intensive and expensive.

**Fire:** Fire has been effective in the US if plants are burned after they have dried but before the seeds have dropped (Carpenter and Murray 1998). Some seeds will survive, and if a fire is not repeated within 3–4 years it is likely the population will re-establish.

**Herbicides:** Spring applications of quizalofop, fluazifop-p-butyl, sethoxydim, and glyphosate have successfully controlled cheatgrass on various rangeland sites in the US. Management was usually best when the plants were less than 10 cm tall and growing vigorously (Wiese et al. 1995). Autumn applications are generally used in cropland situations by farmers growing winter wheat or other cool-season crops. 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:** Prevent new infestations by minimizing disturbance and seed dispersal and maintaining vigorous perennial plant communities. Hand-pulling can be effective for a small infestation, especially before the plants set seed. On larger infestations, hand-pulling may be required for several years until the seed bank is depleted. Seed disturbed areas to perennial grasses to provide competition.

### Integrated Management Summary

Integrated management will require a combination of chemical control, cultural control, seeding perennial grasses, and proper livestock management where land is grazed.

## References

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