Field horsetail

Equisetum arvense L.

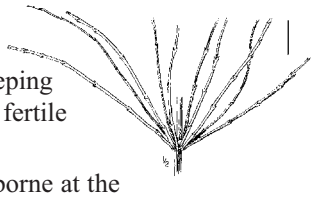
Family: *Equisetaceae* (Horsetail).

Other Scientific Names: None.

Other Common Names: Common horsetail, mare's-tail, horse pipes.

Legal Status: Not categorized.

Identification



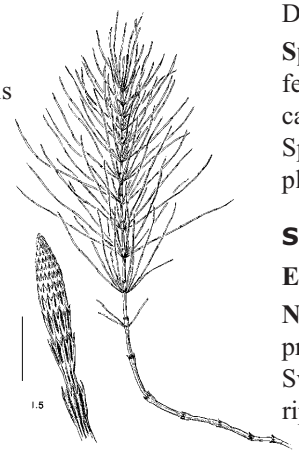
Growth form: Creeping perennial with both fertile and sterile stems.

Flower: Spore-bearing cones borne at the top of fertile stems. Cones are rounded, 1–4 cm long.

Seeds/Fruit: Spores.

Leaves: No true leaves, but whorls of green, 4-angled, leaf-like branches grow either outward or nearly erect from below the sheathed nodes on sterile stems.

Stems: Both fertile and sterile stems are jointed. Fertile stems are light brown, unbranched and about 30 cm tall. Sterile stems are green, 10–80 cm tall, and can be either sprawling or erect. They are hollow and grooved and have sheathed nodes and whorls of solid branches.



Roots: Extensive dark rhizomes with a felt-like surface and small tubers (Frankton and Mulligan 1970). Roots may extend 2 m deep (Royer and Dickinson 1999).

Sporeling: Sporelings are the result of fertilization of small male and female structures called prothalli that arise from the spores. Sporelings grow into the familiar horsetail plants (Cody and Wagner 1980).

Similar Species

Exotics: None.

Natives: Four horsetail species that are native to the province appear very similar to common horsetail. Swamp horsetail (*Equisetum fluviatile*) grows in riparian habitats and hybridizes with field horsetail.

Impacts

Agricultural: Troublesome in pastures, hayfields, grain fields, orchards, nurseries, and small-fruit crops, especially on soils that are poorly drained or have a high water table (Cody and Wagner 1980). Plants are poisonous to young horses and sheep, especially when dried in hay. Horsetail plugs harvesting equipment and can delay drying of harvested grains and forages.

Ecological: Horsetail can form dense stands on disturbed sites, such as roadsides and embankments. It is common in undisturbed, wet habitats. It often dominates riparian habitats, such as swamps and stream banks, and can be common in seepage areas of forests.

Human: Sometimes used medicinally. Also used as ground cover to prevent soil erosion.

Habitat and Ecology

General requirements: Tolerates a very wide range of climatic and soil conditions. Often found on wet, poorly drained soils, but it can grow in dry sandy or gravelly soil if there is a saturated sub-soil. In BC, field horsetail is found in pastures, cultivated crops, orchards, landscape plantings, roadsides, embankments, riparian sites, and shady forests.

Distribution: Occurs throughout BC, across Canada, and through much of the US. Present in all agricultural reporting regions but not regarded as a major concern in any region.

Historical: Native to BC.

Life cycle: Fertile stems develop in early spring, then spores are shed and fertile stems wither. Sterile stems grow as the fertile stems are fading and remain green until autumn, then die. Rhizomes expand and send up new, sterile shoots throughout the growing season.

Mode of reproduction: Spores, rhizomes, and root tubers. Rotting or fragmented rhizomes can produce new plants.

Spore production: Each cone produces about 100,000 spores.

Seed bank: Spores are relatively short-lived. They must disperse to moist soil and germinate quickly in order to survive.

Dispersal: Spring-like mechanisms inside the cone eject the spores for some distance. Tiny spores are dispersed by water. Fragmented rhizomes and tubers may be transported by agricultural and road-building equipment (Cody and Wagner 1980).

Hybridization: Horsetails hybridize quite readily. In BC, field-swamp horsetail hybrids (*Equisetum arvense* x *fluviatile*) occur in riparian habitats where both species grow (Douglas et al. 2000).

Management

Biocontrol: None.

Mechanical: Deep cultivation may give short-term control, but cultivation may enhance the spread of this plant by moving tubers and fragmented rhizomes. Shallow cultivation is not advised (BC Ministry of Agriculture, Food and Fisheries 1996). Mowing before spore production can reduce spread potential.

Fire: Burning of fertile stems can prevent spore production but will not injure the deeply buried rhizomes.

Herbicides: Few herbicides are registered to control horsetail. Dichlobenil is used for control in woody ornamentals, orchards, nurseries, berries, and shelterbelts. Amitrol provides control in non-cropped areas and shelterbelts, and MCPA formulations provide topgrowth control in grass pastures and cereals (BC Ministry of Agriculture, Food and Fisheries 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: Improved drainage and vigorous, perennial grass cover will reduce horsetail in pastures and hayfields. Mulching with porous landscape fabrics or black plastic effectively controls this plant, but sawdust or bark mulches are ineffective (BC Ministry of Agriculture, Food and Fisheries 1996).

Integrated Management Summary

This is a dominant native plant in many riparian ecosystems in BC and an important food source for geese and other waterfowl. Management should consider the context of the plant on the landscape. Herbicides and mowing can be effective. Grazing management on private pasture should maintain perennial plant communities that can compete with this species.

References

BC Ministry of Agriculture, Food and Fisheries. 1996. Crop Protection—Weed Control Factsheet. Horsetail (*Equisetum*). http://www.agf.gov.bc.ca/croplive/cropprot/hrsetail.htm

Cody, W. J., and V. Wagner. 1980. The biology of Canadian weeds. 49. *Equisetum arvense* L. *Canadian Journal of Plant Science* 61: 123–133.

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