



Last Updated 27-04-2011

Broad-leaved Pepper-grass (*Lepidium latifolium*)

aka Perennial Pepperweed, Perennial Pepper-grass, Tall Whitetop, Giant Whiteweed, Ironweed

Provincial Designation: Noxious

Overview:

Broad-leaved Pepper-grass is a highly invasive creeping perennial in the mustard family. Native to Europe and West Asia, it is believed to have been introduced to the United States as a contaminant of sugar beet seed in the 1920s.¹ Populations have been reported in Quebec, Alberta and British Columbia. In Alberta Broad-leaved Pepper-grass has been well established around Lethbridge since 1940 and become a problem in hay crops.²

Broad-leaved Pepper-grass can invade a wide range of habitats including riparian areas, wetlands, marshes and floodplains.³ It rapidly forms large, dense stands that displace native vegetation and disrupt waterfowl nesting sites.⁴ Broad-leaved Pepper-grass can act as a salt pump, transporting ions from its roots into leaves and stems. When the plants die these salts are deposited on the soil surface, creating a saline environment.²

Studies have shown that Broad-leaved Pepper-grass can produce over 16 million seeds/ha.¹ It also has extensive creeping roots that can fragment during washouts and be moved down stream corridors to start new infestations.⁵ The plant may be confused with closely related hoary cress species. Broad-leaved Pepper-grass is distinguished by its height and leaves with distinct petioles (stalks).⁴

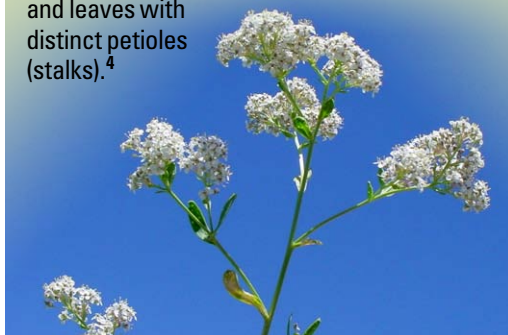


Photo: Richard Old, XID Services Inc., Bugwood.org



Photo: Steve Dewey, Utah State University, Bugwood.org

Habitat:

Broad-leaved Pepper-grass thrives in moist soils but will grow on dry, sandy sites if sufficient water is available.² It is very tolerant of salinity. In addition to riparian zones, the plant can be found growing in ditches, roadsides, waste areas, pastures and crops.⁶ It often reaches fields via irrigation ditches.¹

Identification:

Stems: Erect, many-branched, nearly smooth stems up to 1.5 m tall emerge from a woody crown.¹ In wet areas stems may reach heights of 2.4 m.⁶ Dead stalks may persist for years.¹

Leaves: Leaves are grayish-green with a waxy coating and a prominent whitish midvein.¹ They are lance-shaped with margins ranging from smooth to toothed.⁶ Rosette leaves are larger and more stalked than the alternate, upper leaves.⁵

Flowers: Tiny, white, cross-shaped flowers are located in dense clusters (racemes) at the tips of branches. The inflorescence has a rounded to pyramidal shape.¹

Seeds: Nearly microscopic, hairy, reddish-brown seeds occur in small round-elongated, flattened pods (silicles) that are slightly hairy.⁶ Each pod contains two seeds.¹

Prevention:

In Alberta buying certified weed-free hay will ensure Broad-leaved Pepper-grass is not present since it is classified as an undesirable weed under this program.² Periodic surveys of riparian corridors will help to detect new infestations.⁴ Small areas can be hand-pulled or dug as long as care is taken to remove as much root as possible. It is imperative to continue to monitor these sites until no regrowth is visible.¹

continued next page

Broad-leaved Pepper-grass (continued)

Control:

Cultural: Establishing and maintaining robust, healthy forage stands will dramatically slow the introduction and spread of Broad-leaved Pepper-grass.⁴

Grazing: The woody crowns and persistent dead stalks deter cattle from eating this plant.¹ Goats have been used in the United States to clean up infested areas.²

Mechanical: Unless repeated routinely, mowing is usually ineffective since new shoots will emerge to perpetuate the infestation. Mowing has been used as a means to remove accumulated woody stems and plant debris before grazing or herbicide application.⁷

Chemical:⁸ Broad-leaved Pepper-grass is hard to kill because of its waxy leaves.⁷ In the U.S., herbicides have been effective in rangelands, and in non-crop areas in combination with grazing.² On drier sites, glyphosate-based products are considered the most effective for control of Broad-leaved Pepper-grass. Product labels should be checked carefully to ensure the use is approved. Care must be taken to protect non-target vegetation when using non-selective herbicides. Consult the Ag-Info Centre: 310-FARM (3276), or your local Agricultural Fieldman or IPM Specialist for more information.

Biological: Biocontrol agents are not available and prospects are low because Broad-leaved Pepper-grass is closely related to important crops like canola and mustard as well as native *Lepidium* species.⁷

REFERENCES

- 1 Perennial Pepperweed Fact Sheet http://www.nwcb.wa.gov/weed_info/written_findings/Lepidium_latifolium.2.html
- 2 Francis, A and S.I. Warwick. 2007. The Biology of Invasive Alien Plants in Canada. 8. *Lepidium latifolium* L. Can. J. Plant Sci. 87: 639-658
- 3 USDA Forest Service Weed of the Week – Perennial Pepperweed http://www.na.fs.fed.us/fhp/invasive_plants/weeds/perennial_Pepperweed.pdf
- 4 UC IPM Fact Sheet – Perennial Pepperweed <http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn74121.html>
- 5 Plant Conservation Alliance's Alien Plant Working Group – Least Wanted: Perennial Pepperweed <http://www.nps.gov/plants/alien/fact/lela1.htm>
- 6 Perennial Pepperweed (*Lepidium latifolium*) MontGuide MT 199906 AG <http://ipm.montana.edu>
- 7 Steve's Weed of the Month – Perennial Pepperweed http://www.whitman.wsu.edu/weeds/perennial_Pepperweed.html
- 8 Always follow the product labels. The use of pesticides in any manner not published on the label or registered under the *Minor Use of Pesticides* regulation constitutes an offence under both the *Federal Pest Control Products Act* and *Alberta's Environmental Protection and Enhancement Act*.



Stems and Leaves

Photo: Tim Butler, Oregon Dept. of Agriculture



Photo: Steve Dewey, Utah State University, Bugwood.org



Flowers

Photo: California Department of Food and Agriculture (CDFA)



Seedling

Photo: Steve Dewey, Utah State University, Bugwood.org



Seeds

Photo: Steve Hurst, USDA NRCS PLANTS Database, Bugwood.org