

## PERSIAN DARNEL

*Lolium persicum*  
(Aka Persian Ryegrass)



### Overview:

Persian darnel is an annual or winter annual grass native to central Asia and is a member of the Poa grass family. It was likely introduced to North America as a contaminant of ship ballast or crop seed. It reproduces by seed, emerges early in the growing season, tolerates dry habitats and is extremely competitive in dryland cropping.<sup>2</sup>

Persian darnel emerges mid-April to late May as the soil warms and seedling emergence occurs in the top 3 cm of soil. It develops a fibrous, shallow root system. Persian darnel matures early season but retains enough seed to seriously contaminate crops at harvest. Seed longevity is only 2-3 years.<sup>2</sup>

Persian darnel has become a serious weed of primarily grain crops but also other crops such as canola and sunflower and can cause significant losses via competition for resources.<sup>2</sup>

Persian darnel is easily misidentified as the crop itself or as wild oats or downy brome. The most important distinguishing characteristic is a red tint at the base of the stems, in both seedlings and mature plants.<sup>3</sup> It may also go undetected since its plants are often shorter than the crop.<sup>2</sup>

### Habitat:

Persian darnel does best in dry soils with adequate spring moisture for germination.

### Identification:

**Stems:** Are erect or ascending in a bent fashion, grow 20-70 cm tall, are 3-4 noded, and roughened below the inflorescence.<sup>5</sup>

**Leaves:** Leaf blades are flat, 6-15 cm x 2-8 mm<sup>5</sup>, and dark green. Upper leaf surfaces are slightly rough, the undersides smooth.<sup>2</sup> Auricles may be absent or measure up to 2mm. Ligules measure 0.5-2 mm and are truncate.<sup>5</sup>

**Flowers:** The inflorescence is straight, 10- 20 cm long, the rachis rough and 0.4-1.5 mm thick. Spikelets are 1-2 cm long and spaced about their own length apart. Spikelets are made of 5-9 florets<sup>5</sup> and are laterally compressed.<sup>1</sup> Glumes are lance-shaped, shorter than the spikelet, and 5-veined with acute or obtuse tips. Lemmas are lance-shaped, 6.5-11 mm, 5-veined, and the apex becomes a 5-20 mm, slightly curved awn. The palea is equal or slightly shorter than the lemma, with short hairs along the keel.<sup>5</sup> The fruits/seeds are linear and 5.5-7 mm long.<sup>1</sup>

### Prevention:

Prevent initial infestations by purchasing only clean, certified crop seed. Persian darnel seed is spread primarily via grain, straw, manure, etc., and machinery. Thoroughly clean all equipment after working in infested fields.

### Control:

**Grazing:** Unknown. Invasive plants should never be considered as forage.

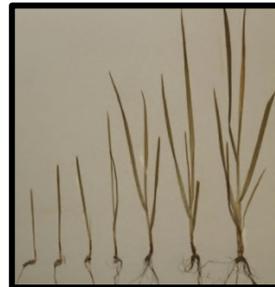
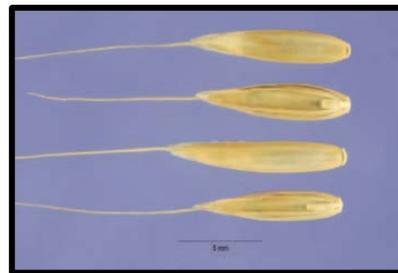
**Mechanical:** Since Persian darnel reproduces by seed only and seed longevity is short, preventing seed production and gradually depleting the seed bank can successfully eliminate infestations. Delayed seeding and shallow tillage promotes Persian darnel germination, followed by tillage to kill the seedlings.<sup>4</sup> Buried seed will not germinate so deep tillage can be effective. Small patches can be effectively hand pulled because of Persian darnel's shallow root system.

**Chemical:** Clethodim, Clodinafop, Fluazifop-P-butyl, Glyphosate, Imazamox in product combination with Imazethapyr or 2,4-D, Sethoxydim and Trifluralin are registered for use on Persian darnel. Always check product labels to ensure the herbicide is registered for use on the target plant in Canada by the Pest Management Regulatory Agency. Always read and follow label directions. Consult your local Agricultural Fieldman or Certified Pesticide Dispenser for more information. Applications of other products are still effective.

**Biological:** None researched to date.

### References:

- 1 Clayton, W.D., Vorontsova, M.S., Harman, K.T. and Williamson, H. (2006 onwards). GrassBase The Online World Grass Flora. <http://www.kew.org/data/grassesdb.html>. [accessed 08 November 2006; 15:30 GMT]
- 2 Holman, J., et al. Persian Darnel: Identification, Biology and Ecology. Montana State University Extension. [www.montana.edu/wwwpub/pubs/mt200411.html](http://www.montana.edu/wwwpub/pubs/mt200411.html)
- 3 Persian Darnel. Bayer Crop Science Canada. [www.bayercropscience.ca/pest-library/Weeds/Persian-Darnel/](http://www.bayercropscience.ca/pest-library/Weeds/Persian-Darnel/)
- 4 Grassy Weed Persian Darnel. Weed Identification Guide. Government of Saskatchewan. [www.agriculture.gov.sk.ca](http://www.agriculture.gov.sk.ca)
- 5 *Lolium persicum*. Flora of China. [www.efloras.org](http://www.efloras.org)





**Provincial Designation:**  
Noxious

