

# WILD OATS

## *Avena fatua* L.

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

**Other Scientific Names:** None.

**Other Common Names:** Oatgrass, poor oats, wheat oats.

**Legal Status:** Provincial Noxious.



## Identification

**Growth form:** Annual grass.

**Flower:** Drooping spikelets in a loose, open panicle. Each spikelet has a pair of large glumes (papery scales) with 2–3 florets inside. Flowering begins in July.

**Seeds/Fruit:** Seeds are variable in colour (Frankton and Mulligan 1970), but all seeds have a dark, bent, twisted awn about 3 cm long. Seeds are hairy at the base with a circular scar at the point of seed attachment.

**Leaves:** Leaf blades are flat, long (20–30 cm), and broad (1.0–1.5 cm wide). A papery membrane (ligule) is visible at the base of the blade.



**Stems:** Erect, hollow stems grow 0.6–1.5 m tall.

**Roots:** Extensive, fibrous root system.

**Seedling:** The seedling leaves are slightly hairy and are twisted counter-clockwise. The seed remains on the root of the seedling (Royer and Dickinson 1999).



### Similar Species

**Exotics:** Cultivated oats (*Avena sativa*) resembles wild oats but wild oats are much larger plants. Cultivated oat seeds have short, straight awns and lack the circular scar. The open panicle with its large, drooping spikelets bearing long, bent awns distinguishes wild oats from other grains and grasses.

**Natives:** None.

## Impacts

**Agricultural:** Responsible for losses in crop productivity through competition (BC Ministry of Agriculture and Food 1984). It also results in lowered grain quality and increased costs for grain cleaning and weed control (tillage and herbicides). Long awns on the seed can injure livestock. Wild oats is an alternative host for virus diseases of grains and alfalfa.

**Ecological:** Virtually absent on undisturbed lands but can invade disturbed sites, where its rapid growth and

development make it competitive. The plant is adapted to a wide range of environmental conditions, but it becomes a serious weed in temperate climates with moist soils. Chemicals from the roots inhibit seed germination and seedling growth of other species (Sharma and Vanden Born 1978).

**Human:** Improved cultivated oat varieties have been developed through genetic crossing with wild oats.

## Habitat and Ecology

**General requirements:** In BC, wild oats occurs in fields and disturbed areas. In the Prairies, it is found in grain fields, oilseed crop fields, fallow fields, roadsides, waste places, disturbed areas, and gardens.

**Distribution:** Present in all agricultural reporting

regions but occurs rarely in the Peace River region (Sharma and Vanden Born 1978). It also occurs in all Canadian provinces.

**Historical:** Introduced from Eurasia.

**Life cycle:** Germinates mostly in the spring or autumn,

but it can germinate throughout the growing season during cool, moist conditions (Alberta Agriculture 1995). Roots and shoots develop quickly and plants begin flowering by early July, depending on growing conditions and geographic location. Flowering may extend up to 6 weeks, with seed-set and seed shedding occurring over a prolonged time (Sharma and Vanden Born 1978).

**Mode of reproduction:** By seed.

**Seed production:** Seed production can range from 20 to 250 seeds/plant.

**Seed bank:** Seeds are initially dormant but most germinate in the first and second spring. On cropland in Alberta, about 3% remained dormant and viable for up to 12 years (Alberta Agriculture 1995).

**Dispersal:** Most seeds are shed around the parent plants. Seeds are moved with the crop during harvesting when the plant is mixed with crops.

**Hybridization:** Cultivated oats and wild oats hybridize readily.

## Management

**Biocontrol:** None, but wild oats is susceptible to many of the same organisms as cultivated oats, including insects, nematodes, fungi, and a virus.

**Mechanical:** Plants can be managed with cultivation at germination but especially before seed-set. Tilling is most effective at the 3-leaf growth stage to minimize removal of soil moisture and nutrients. Mowing can prevent seed-set in heavy to moderate infestations. The mowed wild oats can be used for green feed or silage if the seeds have started to set (Alberta Agriculture 1995).

**Fire:** Seeds are not tolerant to high temperatures. Burning windrow of straw immediately after harvesting can reduce viable seeds (Sharma and Vanden Born 1978).

**Herbicides:** Numerous herbicides are registered for wild oats control in various commodities. Overuse of some herbicides has resulted in a major increase in herbicide-resistant wild oats populations. 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:** Autumn-seeded crops, such as fall rye and winter wheat, can reduce wild oats infestations on cropland, especially if a dense cover crop establishes (Sharma and Vanden Born 1978). Forage crops used in a crop rotation also are effective.

### Integrated Management Summary

Wild oats is a serious and persistent problem in cultivated crops because the plants set seed before crops mature, and seeds can remain viable in the soil for long periods (BC Ministry of Agriculture and Food 1984). Selective herbicides or cultivation can kill the plants before they set seed. Growing competitive crops, which reduce the amount of wild oats seed produced, or burning wild oats seeds after harvest, can also prevent or reduce infestations. A competitive stand of perennial vegetation will discourage this weed on rangelands and pastures.

## References

Alberta Agriculture. 1995. Wild Oats. <http://www.agric.gov.ab.ca/pests/weeds/64010310.html>  
 BC Ministry of Agriculture and Food. 1984. Weed Series Fact Sheet—Wild Oats. Agdex 640.  
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