JOINTED GOATGRASS

Aegilops cylindrica Host

Family: *Poaceae* (Grass).
Other Scientific Names: *Cylindropyrum cylindricum*.
Other Common Names: Jointgrass.
Legal Status: Provincial Noxious.

Identification

Growth form: Winter annual.

Flower: The seed head is 5–10 cm long with 5–10 spikelets (joints)/head.

Seeds/Fruit: Spikelets are 1.0 cm long with 1–3 viable seeds. At maturity, spikelets separate with a segment of the stem still attached (Whitson et al. 1996).

Leaves: Leaves are alternate, simple, with a flap-like appendage (auricle) at the base, and a leaf blade 40–65 mm wide, with hairs.

Stems: Mature plants are generally 35–75 cm tall with one to many tillers.

Roots: Short fibrous root system.

Seedling: No information available.

Similar Species

Exotics: Similar in appearance to winter wheat (*Triticum aestivum*).

Natives: None known.

Impacts

Agricultural: Jointed goatgrass has become a very serious weed in winter wheat and other cereal crops. Its genetic similarity and similar growth characteristics to winter wheat make it very difficult to manage without adversely harming crop production. It also infests rangeland surrounding wheat-growing areas throughout the western US (Morishita 1998), but is not known as a problem in BC.

Ecological: No information available.

Human: No information available.

Habitat and Ecology

General requirements: Grows on both cultivated lands and rangelands. It is adapted to areas where annual rainfall ranges from 60 to 125 cm.

Distribution: This plant is not currently known in BC but is found throughout the western US (Lyon 1998) at elevations up to 1,800 m (including northern Idaho).

Historical: Possibly introduced from Turkey in contaminated wheat.

Life cycle: Flowers in early to mid-June, depending on geographic location. Some seeds germinate immediately after they are shed, but others can persist in the soil for years (Lyon 1998). Seeds usually

germinate from early August through October, but they can also germinate in late spring and still mature if temperatures are low enough.

Mode of reproduction: By seed.

Seed production: A single plant can produce up to 100 spikes, 1,500 spikelets or joints, and up to 3,000 seeds (Lyon 1998).

Seed bank: Soil moisture plays an important role in seed viability and dormancy, but seeds rarely remain viable in the soil for over 5 years (Morishita 1998).

Dispersal: No information available.

Hybridization: No information available.

Management

Biocontrol: None.

Mechanical: Mowing can be effective if plants are cut after flowering but before the seeds mature (Stahlman 1998).

Fire: Fire can be an effective control under some circumstances but soil surface temperature must exceed 95◦C for at least 60 seconds (Stahlman 1998). Fire has been most effective in controlling jointed goatgrass as a post-harvest treatment on winter wheat stubble in Washington State but has been less successful as a spring treatment (Stahlman 1998).

Herbicides: No herbicide will selectively manage jointed goatgrass in winter wheat because the 2 species are so closely related genetically. Various combinations of atrazine, hexazinone, metribuzin, or diuron have been effective in the US (Stahlman 1998) when fields are in fallow. Jointed goatgrass is usually best managed when plants are less than 10 cm tall. Applications of glyphosate at various rates have also been effective, especially when the plant is under 6 cm tall (Beck et al. 1995).

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: Management should aim to prevent the introduction of seed in the soil seed bank and to deplete viable seed in soil (Stahlman 1998). Jointed goatgrass seeds are difficult to distinguish from wheat and are often spread by being planted with wheat or by uncleaned combines. Spread can be minimized by sowing jointed goatgrass-free seed wheat, covering trucks transporting contaminated grain, thoroughly cleaning machinery before moving from infested to non-infested areas, processing contaminated grain before feeding to livestock, and not baling or transporting contaminated straw to non-infested areas (Stahlman 1998).

Integrated Management Summary

An integrated management strategy should focus on preventing the establishment of new infestations in susceptible areas and depleting the soil seed bank.

References

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