green bristlegrass

Setaria viridis (L.) P. Beauv.

Synonyms: *Chaetochloa viridis* (L.) Scribn., *Panicum viride* L., *Chamaeraphis viridis* (L.) Millsp., *Ixophorus viridis* (L.) Nash, *Pennisetum viride* (L.) R. Br., *Setaria weinmannii* Roem. & Schult., *Setariopsis viridis* (L.) Samp., *Setaria italica ssp. viridis* (L.) Thell., *Chaetochloa viridis var. breviseta* (Döll) Farw., *Chaetochloa viridis var. minor* Farw., *Chaetochloa viridis var. weinmanni* (Roem. & Schult.) House, *Chamaeraphis italica var. viridis* (L.) Kuntze, *Panicum italicum var. viride* (L.) Körn., *Panicum viride var. brevisetum* Döll, *Panicum viride var. weinmanni* (Roem. & Schult.) Kneuck., *Pennisetum italicum var. viride* (L.) Körn., *Pennisetum viride var. brevisetum* Döll
Other common name(s): green bristle grass, bottle grass, pigeongrass, wild millet, green foxtail
Family: Poaceae

Invasiveness Rank: **Not Ranked -** The invasiveness rank is calculated based on a species' ecological impacts, biological attributes, distribution, and response to control measures. The ranks are scaled from 0 to 100, with 0 representing a plant that poses no threat to native ecosystems and 100 representing a plant that poses a major threat to native ecosystems.

Description

Figure 1 Green bristlegrass (Setaria viridis). Photo by Wendy VanDyk Evans.

Green bristlegrass is a tufted annual grass, with many culms, more-or-less erect, growing up to 70 cm (rarely 100 cm) high. The leaves are 2-40 cm long and 5-15 mm wide, flat, usually light green, and drooping Sheaths are slightly compressed, sometimes purplish at the base, the margins noticeably ciliate. Ligule is a fringe of hairs up to 2 mm long, fused at the base. Inflorescence is a dense spike-like panicle, erect or slightly nodding at the tip, up to 15 cm long, about 1 cm in diameter, the rachis often pilose. Spikelets are in very short panicle branches, each spikelet elliptical, up to 2.5 x 1.5 mm wide, subtended by one to three bristles 5-10 mm long, these are usually green, rarely purple, antrorsely barbed (i.e. barbs directed towards the apex, therefore less likely to stick to clothing). The lower glume is one third the length of the spikelet, upper glume 5-6-nerved, almost as long as the lemmas. Lower lemma sterile, like the upper glume, upper lemma fertile, finely rugose. Mature spikelets fall entire, leaving the bristles only (Douglas et al. 1985, Dickinson and Royer 2014).

Similar Species: No other native or non-native bristlegrass species (*Setaria spp.*) occur in Alaska. Green bristlegrass could be superficially confused with barley grasses (*Hordeum* spp.) or other long-awned grasses. Barley grasses from bristlegrass can be distinguished most easily by their true spike inflorescence (Skinner et al. 2012).

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Figure 2. Green bristlegrass (Setaria viridis) Photo by the Ohio State Seed Weed Lab.

Ecological Impact

Impact on community composition, structure, and interactions: One of the most abundant weed species in Canada. Green bristlegrass forms dense, competitive stands, and is known for its rapid growth, high seed production, and phenotypic plasticity. Most serious infestations are found in agricultural fields, where green bristlegrass is most impactful, but infestations are also prominent in native mixed grasslands in Canada. Together, green bristlegrass and pearl millet (*Cenchrus americanus*) seed can compose 50% or more of the diet of some birds. The seeds are also eaten by small mammals. Seed may germinate at depths of up to 4 in (Douglas et al. 1985).

Impact on ecosystem processes: Strong competitor for nitrogen - may reduce available soil nitrogen when present in dense stands (Douglas et al. 1985).

Biology and Invasive Potential

Reproductive potential: Green bristlegrass is an outstanding seed producer, and can produce 5000 to 12000 seeds per plant, and 100,000 to 200,000 per m^2 in a field environment (Douglas et al. 1985).

Role of disturbance in establishment: Green bristlegrass primarily establishes in disturbed habitats (Holm et al. 1977).

Potential for long-distance dispersal: Seeds can be dispersed by water and may float for up to 10 days. Can also be dispersed by birds and other terrestrial animals through consumption and excretion or attachment to fur, but the ability to adhere to clothing and fur is lost when the seed detaches from the spikelet and loses its barbs (Douglas et al. 1985).

Potential to be spread by human activity: Anthropogenic vectors of transportation of plant material and seed include clothing, machinery, and other materials.

Germination requirement: The germination of green bristlegrass seed has an optimum temperature range of 68º to 95º F. Germination is highest in seed 1 to 2 cm deep but will take place up to 10 cm depth (Douglas et al. 1985).

Growth requirements: Green bristlegrass is most competitive under high levels of sunlight and temperature. In Canada, it is found in variable soil textures but has been shown to prefer moderately course to course soil textures (Douglas et al. 1985).

Figure 3 Green bristlegrass (Setaria viridis) spikelets. Photo by D. Walters and C. Southwick.

Legal Listings

- Listed noxious in Canada or other countries (BC)

Distribution and Abundance

Native and current distribution: Green bristlegrass is one of the most abundant weed species in some Canadian provinces (Douglas et al. 1985). It is native to northern Africa, temperate Asia, tropical Asia, and Europe (USDA, ARS 2017). Establishes in cultivated fields, gardens, roadsides, waste places, and other disturbed habitats (Holm et al. 1977). Green bristlegrass has been reported in Wasilla, along the Tok Cutoff Hwy, and near Ketchikan (AKEPIC 2026, CPNWH 2026). It is known to occur in all Canadian provinces except for Nunavut and Labrador, and all the lower 48 states (Brouillet et al. 2010+, USDA, NRCS 2026). This species has not been observed in undisturbed areas in Alaska (Densmore et all. 2001, AKEPIC 2026, CPNWH 2026).
For the most up-to-date distribution information for Alaska, please visit the AKEPIC Database.

Management

Tolerance to resistance of several herbicides has been observed in some populations. If the appropriate herbicide is chosen, chemical means of control are effective. If infestations are small, mechanical methods such as hand-pulling should be effective. Infestations should always be revisited after initial treatment to determine if retreatment is necessary (Douglas et al. 1985).

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