



# Ventenata

**Invasive grasses such as ventenata may degrade plant communities and reduce suitable habitat for livestock and wildlife. Prevention and early detection can help slow the spread of new invaders and maintain weed-free areas. Contact your Extension agent or county weed coordinator for more information.**

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## VENTENATA, ALSO KNOWN AS WIREGRASS OR

North African grass, is a non-native winter annual grass that is relatively new to Montana and has the potential to impact range, pasture, wild lands, and annual crops. Its low forage value and shallow root structure can lead to decreased agricultural production and increased risk of soil erosion.

**Species name:** *Ventenata dubia* (Leers) Coss. Family: Poaceae

**History and status:** Ventenata originates from eastern Europe and was first found in North America in the early 1950s in Washington and Idaho. Ventenata was first documented in Montana in the mid-1990s. Though ventenata is not listed on Montana's noxious weed list, recent infestations are of growing concern for land managers due to its continual spread and economic, as well as ecological, impacts in other areas. Ventenata infests about 55,000 acres in Montana. Infestations occur in native rangeland, pastures, and along roadsides in Carbon, Flathead, Gallatin, Lake, Mineral, Missoula, Park, Ravalli, and Sanders Counties (Figure 1).

**Identification:** Ventenata is a winter annual grass that typically grows 6-18 inches tall. It has a distinguishing long, membranous ligule (up to 0.3 inches in length) with reddish-black nodes along the stem (Figure 2). Seedlings and mature leaves are narrow and folded lengthwise. Open and airy panicles emerge in late May through June (above, photo by Inna Smith, Flickr), at which time the stems noticeably harden. Ventenata seeds have bent and twisted awns (Figure 3), similar to other species in the Avenaceae tribe, like wild oat (*Avena fatua*). The awns are developed, bent and twisted by June and July, reaching about 0.1 inch in length.



**FIGURE 1.** Counties in Montana where ventenata has been reported: Carbon, Flathead, Gallatin, Lake, Mineral, Missoula, Park, Ravalli, and Sanders.

**Not to be confused with:** Cheatgrass or downy brome (*Bromus tectorum*) and Japanese brome (*B. japonicus*). At the seedling stage, the leaves of cheatgrass and Japanese brome seedlings are twisted and hairier than ventenata. Ventenata seedlings emerge later and are thinner, more needle-like. At maturity, ventenata has awns like cheatgrass and Japanese brome but awns of ventenata are bent and twisted. Ventenata's panicle is upright and open in contrast to the drooping panicles of cheatgrass and Japanese brome. In addition, cheatgrass turns reddish-purple upon maturity while ventenata remains green to tawny brown. Ventenata can also be confused with the native grass, annual hairgrass (*Deschampsia danthonioides*), which has similar open and airy panicles with bent awns. It may be found overlapping with ventenata in wetter areas, particularly in western Montana.

**Habitat:** Ventenata mostly germinates in fall, but some germination can take place in spring. It is adapted to characteristic Mediterranean climates with cool, wet winters and hot, dry summers. Ventenata can invade rangeland, pastures, winter grain and hay fields, Conservation Reserve Program lands, and sagebrush steppe habitats (Figure 4). Field observations suggest it can grow in areas with moderate annual precipitation ranging from 14 to 44 inches and elevations ranging from 33 to 5,900 feet.



**FIGURE 2.** Reddish-black node and long, membranous ligule of ventenata. Photo by Tim Prather, University of Idaho.



**FIGURE 3.** Seeds have bent awns. Photo by Tim Prather, University of Idaho.

**Spread:** Ventenata reproduces by seeds. Each plant produces about 15-35 seeds. Dense stands of ventenata can produce from 2,800 to 3,700 seeds/ft<sup>2</sup>. It is known to spread via roadways and contaminated forage. Contaminated seeds from Idaho and Washington are suspected as a major source for infestations in Montana. Awns can easily attach to fur, clothing, and machinery. Some canyon grasslands in Idaho that were once dominated by cheatgrass are now infested by ventenata, and in sagebrush steppe communities, ventenata is associated with medusahead infestations.

**Impacts:** Of the five known species in the genus *Ventenata*, *V. dubia* is the only one established in North America. Particularly in the Intermountain Pacific Northwest, it has caused substantial ecological and economic impacts in perennial grass habitats. These impacts are less understood for Montana; however, ventenata is generally unpalatable for livestock and wildlife as it matures and can decrease forage value. Additionally, the shallow root system creates conditions conducive to soil erosion. In Idaho an estimated reduction of 50% forage yield and crop quality occurred a few years after initial infestations.

**Management:** Foremost, maintaining healthy productive stands of perennial grasses and early detection of infestations can limit invasion by ventenata. Mowing has limited success for small infestations as the wiry grass and bent-nature of the awns are difficult to cut and risk of a second flush of seeds may occur.

Esplanade 200 SC (active ingredient (a.i.) indaziflam), Axiom DF (a.i. flufenacet and metribuzin), and Sinbar WDG (a.i. terbacil) are currently labeled to control ventenata with limited application in rights-of-way and natural areas. Outrider (a.i. sulfosulfuron), Plateau/Panoramic (a.i. imazapic ammonium salt), and Laramie 25 DF (a.i. rimsulfuron) are labeled for use on cheatgrass and Japanese brome and can also be effective on ventenata. In a trial in southwestern Montana, post-emergence applications

of indaziflam combined with propoxycarbazone-sodium, rimsulfuron, imazapic, or glyphosate resulted in over 80% control of ventenata and cheatgrass, the two dominant invasive annual grasses at the site; some injury to perennial grasses occurred with these treatments. Indaziflam + propoxycarbazone-sodium had the least amount of injury to non-target species after one year. Management recommendations for ventenata will be refined as more research is conducted.

### Additional resources

<https://plants.usda.gov/core/profile?symbol=VEDU>

<https://www.fs.fed.us/database/feis/plants/graminoid/vendub/all.pdf>

Wallace, J. M., Pavek, P. L. S., & Prather, T. S. (2015). *Ecological characteristics of Ventenata dubia in the Intermountain Pacific Northwest*. *Invasive Plant Science and Management*, 8(01), 57–71.

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**FIGURE 4.** Ventenata can invade pastures, reducing forage production. Photo by Jane Mangold, MSU.

**If you suspect that you may have found Ventenata, contact the Montana Department of Agriculture, your Extension agent or county weed coordinator, or the Montana State University Schutter Diagnostic Lab, <http://diagnostics.montana.edu/>.**



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