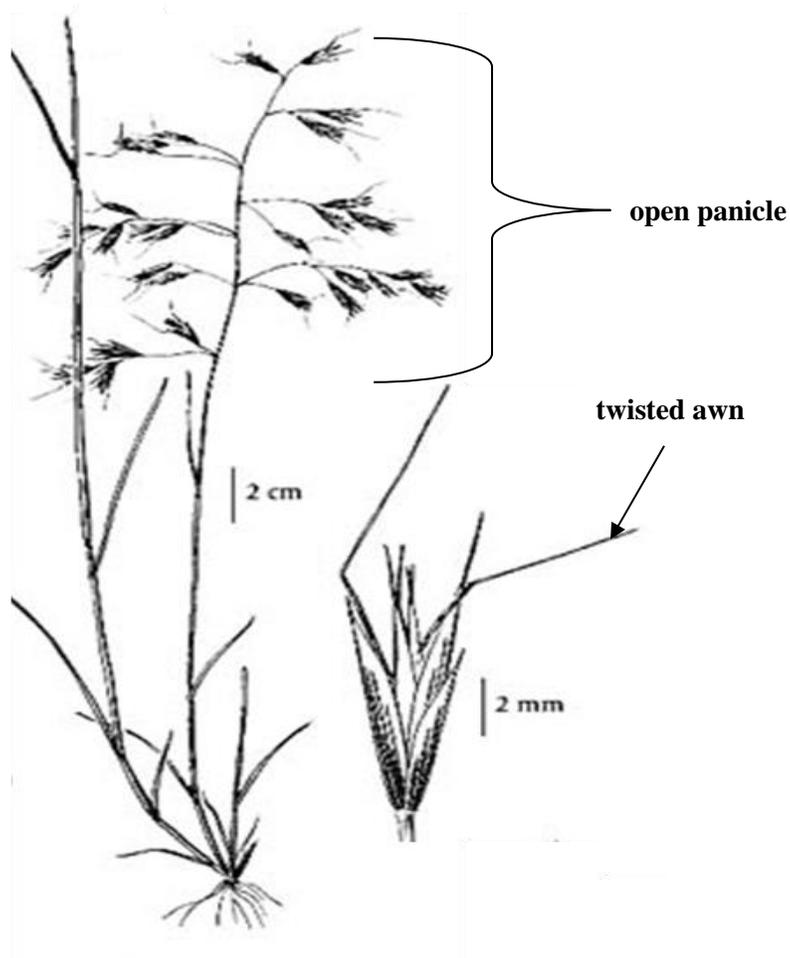


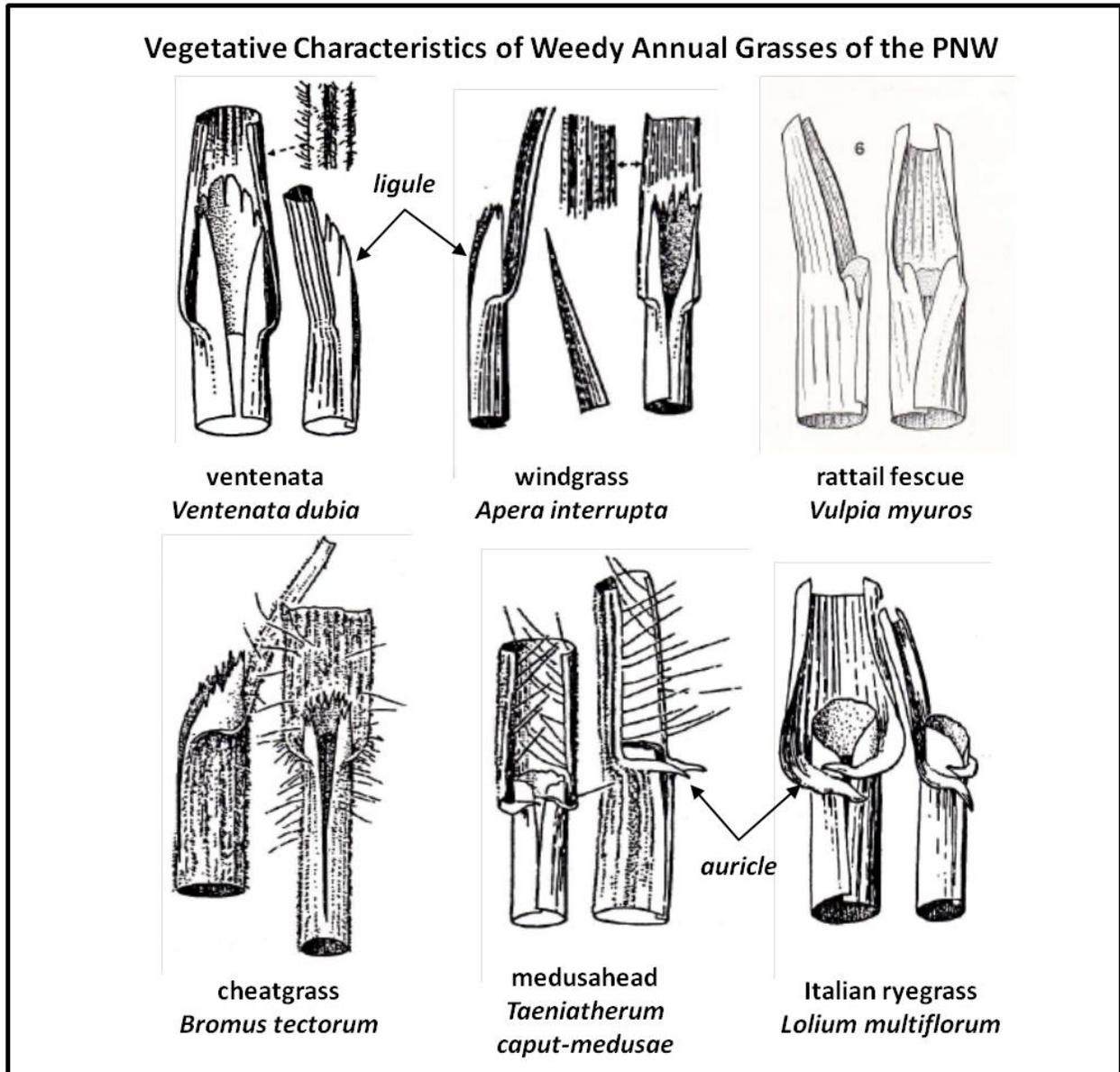
Ventenata Biology & Management
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Ventenata. *Ventenata dubia*; North Africa grass) is an exotic annual grass that has become a significant pest of forage systems and conservation lands in the Pacific Northwest in the past decade. North Africa grass is not a descriptive name that reflects origin of the species. *Ventenata dubia* is actually quite rare in northern Africa. It is found more commonly in Eastern Europe and in some descriptions of flora this annual grass is associated with *Bromus tectorum* (cheatgrass) and *Taeniatherum caput-medusae*. (medusahead wildrye). In early summer, ventenata produces seed heads characterized by an open panicle and twisted awns as the plant matures (*see below*). Identification of ventenata in the fall after seedlings emerge and in early spring can be difficult.



Ventenata Vegetative Characteristics. Identification of ventenata in the fall after seedlings emerge and in the early spring can be difficult. Ventenata seedlings can often be found beneath litter created from the previous growing season in the fall and spring. The illustrations below compare the vegetative characteristics of several narrow-leaved weedy annual grasses in the Pacific Northwest.



Ventenata Biology. Several field studies have been conducted in recent years by researchers at the University of Idaho, the NRCS Plant Materials Center in Pullman WA, and at Oregon State University to describe the biology of *ventenata ventenata* in the Inland Northwest:

Seedbank and Seedling Emergence Patterns (UI & NRCS-PMC: Pavek).

- Up to 80% of the seed produced in a growing season germinates and emerges in the fall.
- A small fraction (< 3%) of deposited seed remains viable in soil up to 3 years.
- Presence of *ventenata* litter increases seedling emergence (40% to >95%) in fall.
- Presence of *ventenata* litter decreases winter mortality of *ventenata* seedlings
- Presence of *ventenata* litter increases growth of seedlings in fall.
- Presence of *ventenata* litter decreases root diameter, potentially increasing phosphorus extraction

Growth & Development Patterns

- Approximately 67 to 100% of the total seedlings emerging per year occur prior to Dec 1
- No seedling emergence has occurred in the spring within CRP and rangeland/pasture sites, compared to 1 to 33% of total emergence in timothy hay.
- In pasture, higher *ventenata* cover was associated with low phosphorus in the soil.
- Seedling emergence starts to occur after approximately 0.75 inches of rainfall
- Comparatively, *ventenata* germination occurs later in fall than cheatgrass (*OSU: Sbatella*)
- Seedlings overwinter as small plants (2 leaf-stage) under litter layers
- Plants remain in the 2 leaf-stage, shedding leaves, throughout early spring (Feb-Apr)
- Stem development starts to occur in early May, followed by inflorescence development.
- Panicles are fully developed by mid- to late-June.

Forage Quality Characteristics (OSU: Brummer & NRCS-PMC: Pavek).

- *Ventenata* has higher silica content (2.7%) than most desirable forage grasses
- *Ventenata* is not comparatively different than cheatgrass as a nutrient source (% crude protein) or in digestibility (%ADF & %NDF) in early spring.
- It is a general view that cattle avoid *ventenata* relative to other annual grasses.
- The small, wiry growth habit of *ventenata* may be a physical impediment to grazing.

Ventenata & Fungal Associations (UI: Newcombe, Griffith & Ashligar).

- *ventenata* harbors *Fusarium* strains in the Palouse region.
- *Fusarium* is a common plant pathogen.
- *Fusarium* collected from *ventenata* negatively impacts bluebunch wheagrass & cheatgrass.
- *Fusarium* treated *ventenata* grows better
- Fungi in litter seem to reduce root diameter making *ventenata* competitive for phosphorus

Table 2. Summary of selective herbicides tested for ventenata control in perennial grass systems.

Label & Field Study Summary	Selective Herbicides ¹				
	Outrider®	Plateau®	Axiom®	Matrix®	Landmark®
<i>Labeled for Use</i>					
non-crop	Yes	Yes	No	Yes	Yes
pasture & rangeland	Yes	Yes	No	w/ restriction	w/ restriction
hay (mixed grass or timothy) ²	w/restriction	w/restriction	Yes*	No	No
Conservation Reserve Program (CRP)	Yes	Yes	No	w/ restriction	No
<i>Use Restrictions</i>					
grazing (pre/post spray re-entry)	14 days	no restriction	---	no grazing	no grazing
hay (post spray harvest timing)	30 days	7 days	---	no hay	no hay
<i>Annual Grass Application</i>					
application rate range (product oz/ac)	0.75 - 1.33	4 – 8	8 – 10	3 – 4	0.75 – 2.25
recommended rate (product oz/ac)	1.00	6	8	3	0.75
application cost at recommended rate	\$17/ac	\$10/ac	NA	\$40/ac	\$8/ac
<i>Ventenata Control @ Recommended Rate</i>					
	--- Control Ratings: High (>90%), Mod (75 – 90%), Low (<75%), NA (not available) ---				
labeled for ventenata control	No	No	No	No	No
pre-emergent control (fall; 3 wks)	Mod - High	Low-Mod	Mod-High	High	NA
post-emergent control (fall; + 2 leaf)	High	Mod-High	Mod-High	High	High
<i>Other Annual Grasses Controlled (label)³</i>					
	----- Control Categories: C (controlled), S (suppressed), NA (not available) -----				
downy brome (cheatgrass)	C	C	S	C	C
Italian ryegrass	S	C	C	NA	NA
rat-tail fescue	NA	NA	C	NA	NA
medusahead wildrye	NA	C	NA	C	C
<i>Perennial Grass Injury (fall application studies)⁴</i>					
	--- Injury Categories: Low (stunting), Mod (yield reduction), High (severe yield loss) ---				
Bluebunch wheatgrass	Low	Low	Low	Low	NA
Intermediate wheatgrass	Low	Low	Low	Low-Mod	NA
Smooth brome	Low – Mod	Mod	Low	Low	NA
Orchardgrass	Low – Mod	Mod	Low	Low	NA
Timothy	Mod	High	Low	Mod	NA

Outrider® (sulfosulfuron); Plateau® (imazapic); Axiom® (flufenacet/metribuzin); Matrix® (rimsulfuron);

Landmark® (sulfometuron methyl/chlorsulfuron).

²Hay growers need to carefully review any herbicide label to ensure its use is allowed under label directions (see WSDA memo).

*The Bayer company has labeled Axiom for timothy hay in ID, OR & WA, possibly for fall 2015

^{3,4}Consult herbicide labels for additional information about annual grass control and perennial grass injury or tolerance.