

Upcoming Events

Ranch Management & Ag Leadership 2022 Seminar Series

April 14 — Laramie
Technology in Ag, 4-7 p.m.

In-person and online options
\$25/session or \$100/series

For information and registration, visit
www.uwyo.edu/uwag/rmal.

**Pesticide Safety Educational Programs will
be from 12:30-4:30 p.m.**

April 19 — Sundance

**Invasive Grass and Weed Workshop will be
from 3-6 p.m.**

May 3 — Gillette

May 10 — Sheridan

May 17 — Sundance

Questions?

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April 2022
Agriculture and Natural Resources
Newsletter

Information in this edition includes:

Invasive Grasses & Weeds



Invasive Grasses and Weeds

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Controlling invasive grasses and weeds is a top concern for many producers. Invasive grasses can reduce species diversity and forage quality. Not only do they have ecological affects, but they also have an economic impact. To avoid costly and long-term control efforts, an Integrated Pest Management plan (IPM) is needed for early detection and rapid response (EDRR) to contain and eradicate invasive species before they spread further (Stone, 2020). It is important we identify them to control them properly.

Medusahead

Medusahead is an invasive annual grass that is not palatable and degrades plant communities. Additionally, it reduces suitable habitat for livestock and wildlife (Orloff, 2018). The best way to control medusahead is through early detection and early management response.

Medusahead is annual bunch grass that is 6-24 in. tall. During the growing stage, it is a bright yellow-green color. It has long awns pointing outward and upward that take on a twisted appearance as they dry out in mid- to late-summer (Orloff, 2018). Figure 1 shows mature Medesuahead awns.



Figure 1: Mature Medusahead awns. Photo by Steve Dewey, Utah State University, Bugwood.org

Medusahead's seedling emerge in the fall and re-growth occurs early in the growing season. This early re-growth of Medusahead reduces soil moisture for perennial grasses. Additionally, its silica content creates thatch, which does not allow other grass seedlings to establish. However, Medusahead seedlings can germinate in the thatch. Medusahead silica content makes it unpalatable. Medusahead should be managed as it degrades plant communities and can negatively affect livestock producers.

Medusahead has caused serious economic impacts in Western U.S. The most cost effective management strategy is preventing the introduction and spread of Medusahead (Orloff, 2018). It is important to minimize the spread of Medusahead seeds from infected

areas to non-infected areas. Additionally, it is important to avoid overgrazing of perennial plants as they can help prevent Medusahead from establishing and spreading. Medusahead can be managed using herbicide treatment, prescribed fires and revegetation. Herbicide active ingredients such as imazapic, aminopyralid, rimsulfuron and sulfosulfuron can control Medusahead (Orloff, 2018). However, if little-to-no desirable vegetation remains after an herbicide treatment or a prescribe burn, revegetation should be integrated. Research done in Oregon, found an increase of one perennial bunchgrass per square yard resulted in a 15-20 percent decline in Medusahead establishment (Orloff, 2018).

Ventenata

Ventenata (Figure 2) is an invasive annual grass with little value as a forage species because it grows earlier in the season than perennial grasses and maturity makes it unpalatable (Marshall and Mealor, 2021; Pavek et al., 2011; Fryer, 2017). On the other hand, perennial grasses are more dependable forage base with higher available nutrients throughout the growing season (Marshall and Mealor, 2021).

Ventenata is documented to rapidly spread in the Western U.S. and this species has recently been rapidly spreading in the Great Plains. Ventenata reduces forage availability for livestock and wildlife and it reduces species biodiversity. It uses the moisture found in early

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spring to grow which depletes the spring moisture available for perennials. As a result, it causes water stress for perennials earlier in the summer, which can reduce the abundance of perennial grasses (D'Antonio and Vitousek, 1992; Evans et al., 1970). Prevention of the invasion and spread of *Ventemata* is vital.



Figure 2: Image of *Ventemata*'s seed head and stem. Photo by Steve Miller, University of Wyoming, uwagnews.com

Ventemata, like other invasive grasses can be hard to control. Preventing the spread is the best management tool. To control *Ventemata* and restore the ecosystem, a producer can apply herbicides. Choosing a proper herbicide that does not harm the existing perennial grasses is crucial or else it can result in higher abundance of *Ventemata* (Koby et al., 2019). Indaziflam is an effective herbicide that can be used to manage for *Ventemata* in perennial grass stands (Koby et al., 2019). *Ventemata* seed viability in the soil seedbanks is short with

most seeds not being viable after three years. Therefore, a single indaziflam (Rejuvra) application may facilitate long-term control of *Ventemata* but using annual applications in infested areas provides the best management results. Additionally, control is greater when indaziflam is combined with either glyphosate or rimsulfuron (Koby et al., 2019). The timing of application is important for its effectiveness. For best results, it is recommended to spray pre-emergent (around June-September before it starts germinated in the Fall). If it has started to germinate, Plateau should be added to the tank mixture to control the growing seedlings and effectively control *Ventemata*. Hand removal of developed plants is another way to manage *Ventemata* for smaller areas.

Leafy Spurge

Leafy spurge is a non-native perennial forb that reproduces from seed and vegetative root buds (Figure 3). Primary seed germination is in May and flowers develop mid-May-June but flowering can occur through fall. Each leafy spurge stem produces on average 140 seeds and mature seeds can be “thrown” up to 15 ft from the parent plant (Stone, 2020). Leafy spurge seeds are viable in the soil for eight or more years in the soil. Additionally, leafy spurge shoots emerge in early spring from the crown. As a result, it can outcompete desirable plants for nutrients and water. It is important to identify and control leafy spurge as infestations in rangeland and pasture can result in a decrease of carrying capacity of livestock

by 50 to 75 percent due to a loss of grass production (Stone, 2020).



Figure 3: Image of leafy spurge

Leafy spurge can be controlled through chemical application. Annual application is needed for a long-term control. The timing of the application is crucial for the effectiveness. Spring applications work best when Leafy spurge flowers are developing in June. Fall applications work best when new regrowth takes place in early to mid-September (Stone, 2020). Another method to control leafy spurge is by grazing it with sheep and goats.

Canada Thistle

Canada thistle is a serious weed classified as a noxious weed in 43 states (Skinner et al., 2000). It commonly invades rangelands, pastures, croplands and roadsides (Tiley, 2010). It is a deep-rooted perennial forb that can store carbohydrate reserves in their extensive root systems (Figure 4). Canada thistle is an invasive

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plant that is an effective competitor and efficient vegetative spreader that allows it to suppress other plants (Tiley, 2010). As a result, it reduces yield/production, forage availability and species diversity.



Figure 4: Image of a flowering Canada thistle plant

Canada thistle can be persistent, difficult to manage, and it can tolerate certain management techniques. Canada thistle can be managed/controlled through herbicide application, mowing, burning, seeding and biological control (Stephen et al., 2007). There are two optimal herbicide treatment timings to control Canada thistle. For plants in the late rosette/bolting/bud stage, spring/early summer herbicide treatment is the most effective (Stephen et al., 2007). However, for shoot regrowth and newly emerged rosettes, fall herbicide treatment is the most effective. Although herbicide treatment is the most effective for short-term control of Canada thistle, for long-term control, integrating two

or more management strategies causes greater reduction of Canada thistle abundance (Orloff, 2008).

Summary

Invasive grasses and weeds can reduce and/or alter forage production, quality and species diversity. Invasive species can generally out compete native species when left untreated. As a result, they can easily spread which can be costly to control. The best way to manage for invasive species is by learning how to identify and prevent spreading. Establishing an invasive grass and weed management plan is the best way to reduce the abundance of invasive species. For more information, please attend one our Invasive Grass and Weed workshops. The dates and location for those workshops can be found on the upcoming events section on the first page of this newsletter.

Sources for Further Reading on Invasive grasses and weeds

Koby, L. E. et al, 2019. Management of *Ventenata dubis* in the inland Pacific Northwest with indaziflam. *Invasive Plant Sci. Manag.* 12: 223-228

Marshall, H. and Meador, B.A., 2021. Effects of *Ventenara dubia* removal on rangelands of northeast Wyoming. *Invasive Plant Sci. Manag.* 14(3):156-163

Orloff, N et al., 2018. A meta-analysis of field bindweed (*Convolvulus arvensis* L.) and Canada thistle (*Crisium arvense* L.)

Skinner, K et al., 2000. Using noxious weed lists to prioritize targets for developing weed management strategies. *Weed Sci* 48: 640-644

Stephen, F et al., 2007. Canada Thistle (*Crisium arvense*) Control with Aminopyralid in Range, Pasture, and Noncrop Areas. *Weed Technology.* 21: 890-894

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