Medusahead & Barb Goatgrass Control:

Timing grazing and mowing treatments based on plant growth stage

Medusahead and barb goatgrass are two of the most aggressive annual grasses invading rangelands across California.

These species can spread at an alarming rate, quickly altering carrying capacity, hydrologic cycling, fire regimes and wildlife habitat.

Grazing and mowing can be economically viable tools to control these weeds, but success depends on when the treatments are applied relative to the growth stage of the weeds. The ability of a plant to recover from grazing, plant nutrition and plant palatability for livestock all change with plant growth stage. This handout describes how to use this information to identify most appropriate periods to apply grazing and mowing treatments to control these weeds.

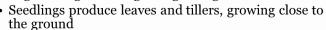
Plant growth stages:

Too Early

Target for Grazing approx. 10 -15 days

Target for Mowing approx. 35 days

• Vegetative growth beginning with germination



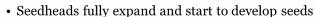
• Although protein content is sufficent, it is too early for effective defoliation treatment - plants will recover



October— March

Timeline*

- Plants transition from vegetative to reproductive growth indicated by elongation of stems and development of seedhead enclosed in a leaf
- Protein is adequate and plants are palatable
- This is the best time to utilize grazing as a treatment



- As awns emerge, the plant becomes less palatable and nutritious to livestock
- Grazing is ineffective mowing is the preferred treatment during this time



Late March— Early April



Mid April— Early May



Early May— July

- Seed kernels within the seedheads reach full length
- Livestock will avoid seedheads and soft seeds will continue to develop if mowed
- Too late for defoliation treatments to be effective

Highlights:

Too Late

*These guidelines are based on trends noted across multiple sites and years. There is a high degree of variability across a single pasture, between regions and year-to-year. It is best to determine treatment timing on phenology of the majority of plants at a given time, rather than the calendar.

- ♦ With strategically planned stocking density and timing, grazing is a viable control method during a brief period when plants have favorable palatability and nutrition. Stem elongation is a good indicator for this target window.
- ♦ Mowing as a treatment offers a wider window of opportunity for control, often extending into early May.
- ♦ By mid May, opportunities for control are limited during many years.
- ♦ As a general trend, barb goatgrass development is delayed by roughly two weeks in comparison to medusahead.



C RESEARCH

FOR MORE INFORMATION:

Reference the following publications for detailed information focused on medusahead and barb goatgrass biology and control:

Barb Goatgrass, Josh Davy et al.

Publication: 8315 (UCANR), 2008 http://anrcatalog.ucdavis.edu/

Medusahead Management Guide for the Western States, Guy Kyser et al.

Publication: University of California, Weed Research & Information Center

http://wric.ucdavis.edu/publications/MedusaheadManagementGuide_pub_2014.pdf

Control of Medusahead (Taeniatherum caput-medusae) Using Timely Sheep Grazing, Joseph DiTomaso et al.

Publication: Invasive Plant Science and Management, 2008 1:241-247

http://www.bioone.org/doi/abs/10.1614/IPSM-07-031.1

Integrated Weed Management, UCANR

Website: http://ucanr.edu/sites/Integrated Weed Management/

Development of this handout was supported in part by Western SARE award #EW13-027 and USDA-NIFA Western Regional Integrated Pest Management Program Award #2013-41530-21326 to J. James, J. Davy, T. Becchetti, and E. Laca.

Information presented was informed through data collected by numerous Livestock and Natural Resource advisors throughout California including Sheila J. Barry, Theresa A. Becchetti, Josh S. Davy, Morgan P. Doran, Larry C. Forero, John M. Harper, Royce E. Larsen, and Stephanie R. Larson-Praplan.

Support in sample processing, data analysis and writing was provided by Jimin Zhang, Philip Brownsey and Maddison Easley, respectively.

Growth stage photos were provided by Emilio Laca.

A copy of this publication can be obtained online at: http://sfrec.ucanr.edu/



University of California Agriculture and Natural Resources

