Fact Sheet

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Plumas-Sierra-Butte Livestock & Natural Resources

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Cheatgrass - *Poaceae Bromus Tectorum*

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Cheatgrass in alfalfa production.

Cheatgrass in Alfalfa Field.

Cheatgrass-fueled fire in sagebrush ecosystem.

Cheatgrass or Downy Brome (*bromus tectorum*) originated in Eurasia, and was thought to be introduced to north America around 1850 as a contaminate of grain seed. It has been described as the scourge of the west and is estimated to infest more than 100 million acres. It can grow to elevations of 13,000 ft. but is typically more problematic in elevations lower than 6,000 ft. Cheatgrass grows in rangelands, natural areas, roadsides, and is problematic in agronomic crops.

Biology: It is a winter annual species, which will germinate with the first fall rains, and can continue to germinate until early spring. It has a shallow fibrous root system, and will typically grow 6-24 inches tall depending on moisture. On rangelands it matures much earlier than native perennial grasses, and is one of the first species to dry out on the landscape. Soil seed life is not long, and is estimated to be approximately 2-3 years. Cheatgrass can form a thatch layer, which helps protect and shelter it's seedlings favoring their growth and survival.

Dispersal: Seeds of cheatgrass can be spread short distances by wind and water. Long distance dispersal is often attributed to animals, humans, and machinery. The seeds have short awns, which allow the seeds to become attached to clothing, hair and fur.

Impacts: Cheatgrass can be problematic in the natural landscape and in agronomic production. It is a highly competitive seedling, which can outcompete both perennial seedlings and annual crops. On the rangelands it has the ability to capture moisture and nutrients quickly in the spring, before perennial species start growth. Cheatgrass can also increase the frequency of the fire cycle in sagebrush, and forested ecosystems, drying out early in the year, providing the fine fuel needed to carry fire in-between native vegetation. Cheatgrass is nutritious to livestock for a short window in the spring, before seed head production occurs at which point they typically avoid grazing it if possible. Cheatgrass has always been a problematic weed species in agronomic production, competing with annual grain crops and perennial forage crops alike. It can be especially problematic in hay production, as the sharp seeds can get stuck in livestock mouths, causing physical injury and infection.

Control: As cheatgrass is an annual species, it only grows and disperses from seed. Preventing seed production for multiple years is the key to depleting the seedbank and favoring more desirable species. Mechanical methods work well to control cheatgrass - hand pulling or tillage can be an effective way to kill plants. However, cheatgrass has a long germination window, and physical techniques often create soil disturbance which can trigger more germination. No biological control agents have been released for cheatgrass. However, there are a few bacteria which have initially shown promise to reduce seedling vigor and growth. Various different herbicides can be used to control cheatgrass. The most effective herbicides are often the ones which have pre-emergence activity.

Select Herbicides		
Herbicide Trade Name	Product Rate/A	Comments
Hexazinone Velpar	2-6 pt./ acre. (0.5-1.5 lb a.i./ acre)	Good preemergence and post emergence activity. High rate can cause bare ground. Rate will need to be selected based on the crop safety, and other weed species present.
Metribuzin Dimetric	1/2 to 2/3 lbs/ acre (.375-.500 lb a.i./acre)	Good preemergence control of cheatgrass can be achieved in alfalfa and alfalfa grass mixtures in the intermountain region of California. Application should be made in the dormant season.
Indaziflam Esplanade	5-7oz / acre (1.04-1.46 oz a.i./acre)	Excellent preemergence actively, with no post emergence activity. Good perennial grass tolerance but no grazing label. Could be utilized for multiyear control where bare ground is acceptable.
Glyphosate Roundup Glyfos Rodeo	0.33- 1 qt./acre (.375-1.1 lb a.e./acre)	Cheatgrass is highly susceptible to glyphosate applications. Glyphosate will control actively growing cheatgrass, but will not control further flushes of seeds, because it does not have soil residual activity. It has been effective in controlling cheatgrass at low rates, when desirable perennial vegetation is dormant, and no green material is present on the desirable species.
Clethodim Select Max	6-8 oz / acre (1.5 to 2 oz a.i. / acre)	Applications are most effective when cheatgrass is in the seedling growth stage. Smaller actively growing plants are much easier to kill. Generally Clethodim is safe on broadleaf's species (including many crops), but will kill or injure most grasses. Only actively growing cheatgrass will be controlled, as clethodim does not have soil residual activity. (No range label)
Rimsulfuron Matrix	2-4 oz / acre (0.5-1oz a.i)	Will offer good preemergence to early postemergence control. It can offer good cheatgrass control in established perennial grasses, which are not actively growing. (Grazing restricted for one year)

Any mention of pesticide is not a recommendation or endorsement of use by the University of California or the authors. Pesticides are mentioned by trade names for informational purposes only. Whenever using a pesticide read and follow the label.

Cheatgrass seedlings in litter layer.

References:

1. DiTomaso, J.M., G.B. Kyser et al. 2013. Weed Control in Natural Areas in the Western United States. Weed Research and Information Center, University of California. 544pp. change page (http://wric.ucdavis.edu/information/natural%20areas/wr_B/Bromus_diandrus-madritensis-tectorum.pdf)
2. Schupp E. 2006. Cheatgrass (*Bromus Tectorum*). The Great Basin and Invasive Weeds Web Site. Utah State University. https://www.usu.edu/weeds/plant_species/weedspecies/cheatgrass.html
3. Manalled, F, Mangold, J, Orloff, N, and Davis,E. 2017. Cheatgrass: Identification Biology, and Integrated Management. Montana State University Extension Guide, MT 200811AG

This resource is courtesy of University of California Cooperative Extension. For questions contact:

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