

WATCH OUT *for*

Medusahead

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The purpose of this bulletin is to provide key identification characteristics and early control methods for medusahead wildrye (*Taeniatherum caput-medusae*), which was first collected in Montana in 2013. Invasive annual grasses such as medusahead may degrade plant communities and reduce suitable habitat for livestock and wildlife. Early detection and appropriate response can help to slow spread of new invaders and maintain weed-free areas. Contact your county weed coordinator or Extension agent for more information.

Montanans have a new annual grass invader to watch out for. Medusahead wildrye (*Taeniatherum caput-medusae*) was found in Montana for the first time in November 2013 in Sanders County. Since its discovery in Sanders County, medusahead has been added to the county noxious weed list, but it is not on the Montana state noxious weed list. Medusahead is a regulated plant in the nearby states of California, Colorado, Nevada, Oregon and Utah. In these states, observers note that medusahead can form near monocultures, with resulting degradation of wildlife and livestock habitat and alteration of fire regimes. There are even reports of medusahead displacing cheatgrass (*Bromus tectorum*) populations. Time will tell whether this species will be problematic in the climate and habitats of Montana, but in the meantime, be on the lookout for this plant.

Identification

If you use your imagination, medusahead bears a resemblance to the monster Medusa of Greek mythology. Medusahead has long awns that emerge from the seed head and point outward and upward (Figure 1). The awns take on a twisted appearance as the plant dries out in mid-to-late summer, similar to the snakes twisting on the top of Medusa's head. When mature, medusahead inflorescences stay intact, in contrast with look-alike native grasses bottlebrush squirreltail (*Elymus elymoides*) and foxtail barley (*Hordeum jubatum*) whose mature inflorescences fall apart easily when handled. Medusahead has wiry stems with a few short, narrow leaves and its height can range from six to 24 inches (Figure 2). Its bright yellow-green color can also be helpful in identification – when medusahead is growing with other invasive annual grasses like cheatgrass, which it often does, the yellow-green sheen is noticeable after cheatgrass has senesced and turned brown.



Photo by Steve Devey, Utah State University, Bugwood.org

Figure 1. Medusahead is an annual bunchgrass with inflorescences reminiscent of Medusa.



Photo by Brenda Smith, USDA-Agricultural Research Service

Figure 2. Medusahead awns point outward and upward, and mature seed heads do not shatter readily.

Habitats and Impacts

Medusahead's native range is in Spain, Portugal, France, Morocco and Algeria. The first recorded occurrence of medusahead in the U.S. was in southwestern Oregon in 1884. Like other invasive annual grasses, this species tends to thrive in regions with warm, dry summers and cool, moist weather from fall through spring. It is most common in inland valleys of California, the Intermountain West including the Great Basin, and the Columbia Basin, particularly in clayey soils. Medusahead occupies about 2.5 million acres in the western U.S.

Medusahead invasion contributes to degradation of plant communities and can negatively impact livestock producers. This species usually behaves as a winter annual, meaning that seedlings emerge in the fall and initiate re-growth early in the growing season, reducing available soil moisture for perennial grasses. Further, it has high silica content so it is slow to decay, and accumulates dense layers of litter, or thatch, which limits recruitment of other grass seedlings (Figure 3). Medusahead seeds, however, can germinate within the thatch. The nutritional value of medusahead is similar to other grasses, but coarseness due to the high silica content makes it unpalatable. Also of concern to livestock producers are the stiff glumes and awns of the seed head that can injure eyes and mouths of grazing animals. In fact, research indicates that a dense stand of medusahead can decrease grazing capacity by up to 80 percent.

Prevention and Early Control Methods

Given the ecological and economic impacts this species has had in other areas of the West, preventing the introduction of medusahead to new areas in Montana is clearly the most cost-effective management strategy. Since we have only recently confirmed its presence in the state,

it is important to be able to identify this species so new populations can be controlled when they are still small and relatively manageable. It is critical to avoid traveling through medusahead populations as seeds are readily transported long distances by both animals and vehicles. Another prevention strategy is to limit disturbances, including overgrazing of perennial grasses, as disturbance increases rangeland plant community susceptibility to invasion. Desired perennial grasses can be a great ally in weed prevention; for example, researchers in Oregon found that an increase of one perennial bunchgrass per square yard resulted in a 15-20 percent decline in medusahead establishment.

Researchers have found that integrated management of medusahead is more effective than treatments applied individually. Spring burning to remove litter followed by a fall application of a pre-emergent herbicide with the active ingredient imazapic has been shown to be the most effective method for managing established populations. If little to no desirable vegetation remains, revegetation should be integrated with burning and herbicides.



Photo by Jane Mangold, Montana State University

Figure 3. Medusahead thatch is slow to decompose and limits recruitment of desired species.

Keep your eyes open for medusahead in Montana. If you are suspicious that you may have found medusahead, contact your county weed coordinator or Extension agent, or the Montana State University Schutter Diagnostic Lab, <http://diagnostics.montana.edu/>.