

## **Herbicidal Control of Perennial Pepperweed (*Lepidium latifolium*) in Nevada**

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### **INTRODUCTION**

Perennial pepperweed has invaded so many different types of habitats that it is necessary to target the specific situation and/or environment where control measures are proposed. The information presented here concerns the herbicidal control of perennial pepperweed in native hay meadows in the intermountain area. These are unimproved meadows with wild flooding irrigation systems. Typically, one cutting of hay is obtained and crop aftermath is grazed in the fall. In Nevada, it appears that virtually all of these meadows are or will be infested with perennial pepperweed. On many of these meadows, biomass actually increases with perennial pepperweed invasion, but total digestible nutrients, and especially digestible protein, drops. Cattle preference for the regrowth or old growth of perennial pepperweed is very low. Perennial pepperweed clogs irrigation ditches and colonizes earthen irrigation structures in these meadows.

In the spring these meadows are often substantially flooded on normal to wet years. The meadows provide prime waterfowl nesting areas. The invasion of perennial pepperweed changes the nesting characteristics of the meadows and these changes are apparently detrimental.

### **Traditional Control**

In areas where perennial pepperweed has been a problem for some time, such as the Susan River Valley of Lassen County, California, ranchers have attempted to control this pest in hay meadows with annual applications of 2,4-D ([2,4,-dichlorophenoxy] acetic acid). They formally used 4 lb/ac of a l.v.e (low volatile ester) formulation applied at the bud stage (usually early to mid June). Since new label restrictions have appeared for 2,4-D this has been reduced to 2 lb/ac applied with 50 gallons per acre of carrier (water). Ranchers who worked very hard at this type of herbicide application, year after year, have had some success in suppressing perennial pepperweed. The cost is about \$12.00 to \$15.00 per acre, annually, plus application cost. This type of application requires treating the fence corners and rough areas that are not usually mowed as well as the main meadows. If an area is missed with the herbicide application, it will be totally dominated by perennial pepperweed at the end of the growing season that same year.

There are restrictions on the application of l.v.e. esters of 2,4-D around water. Read the label and check with local regulatory agencies. For some amine forms of 2,4-D, the application restrictions around water are more liberal. We have not seen a lot of difference in control obtained between l.v.e. and amine forms of 2,4-D.

### **More Modern Herbicides**

The herbicide chlorsulfuron (2-chloro-N-[{4-methoxy-6-methyl-1,3,5-triazin-2-yl}-

aminocaryl] benzenesulfonyl) has proven very effective for control of perennial pepperweed. This is a selective herbicide that does not kill grasses and grass-like plants commonly found in native hay meadows. It does kill broadleaf species. It has a label for such applications in non-crop areas in many western states. Be sure and check for label restrictions in your area and for restrictions concerning your specific application situation.

Chlorsulfuron has both soil and foliar activity. In timing of application experiments, we obtained the highest level of control with applications at the bud stage. However, excellent control can be obtained with early spring or late fall applications. Essentially, foliar up-take of the herbicide is not necessary for control of perennial pepperweed with this herbicide. This provides several management opportunities for perennial pepperweed control in native hay meadows. The herbicide can be applied in late summer on re-growth patches of perennial pepperweed. The mass of perennial pepperweed herbage has been removed by then by the haying operation. The meadows are usually dry after haying so water contamination is not an issue. If the perennial pepperweed infestation is not continuous, re-growth patches are obvious, so the area requiring treatment is easily delineated.

You need to check with pesticide regulatory agencies for your area and make sure that your meadow situation matches label requirements. Remember that chlorsulfuron has soil activity and can be taken up by roots. Do not apply this material under trees or shrubs.

Chlorsulfuron is applied at a rate of 1.5 oz per acre for perennial pepperweed control. It is expensive, with the cost of materials being about \$30.00 per acre. The advantage over 2,4-D is it gives complete control for several seasons and does not require annual application.