

# Russian Knapweed Control Is Improved by Mowing Prior to Fall Herbicide Application

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## Introduction

Russian knapweed (*Acroptilon repens*) is a perennial weed that forms dense colonies from adventitious shoots arising from an extensive root system. It infests some of the most productive pasture and hayland of the Great Basin. Past efforts to control this species has had limited success. Fall application of a persistent, soil-active herbicide may be an effective way to control Russian knapweed growth the following year. In past research, control of other perennial weed species by mowing prior to fall herbicide applications produced inconsistent results. In this study, we tested mowing alone and two persistent, soil-active herbicides with and without mowing.

## Experimental Protocol

In November 2001, picloram (1 quart/acre Tordon®) or clopyralid (1 pint/acre Transline®) was applied with and without mowing to a Russian knapweed-infested pasture near Burns, Oregon. Two other treatments, mow-only and untreated, also were included. Mow-only and mow-herbicide treatments were done with a Brown Brush Monitor,™ which mows and applies herbicide in a single pass and deposits the cuttings in a narrow row to one side of the swath path. Herbicide-only application was made with a boomless nozzle mounted on the back of an all-terrain vehicle. Visual estimates of Russian knapweed control were made in summer 2002.

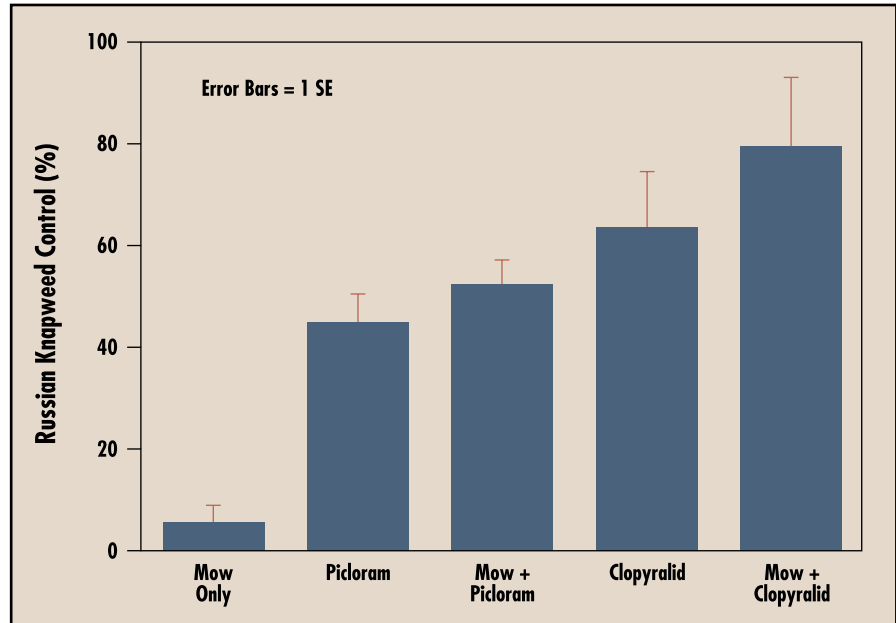


Figure 1. Mowing prior to herbicide application improved Russian knapweed control with both picloram (Tordon®) and clopyralid (Transline®).

## Results and Discussion

Russian knapweed control using Tordon® or Transline® was improved when mowing preceded herbicide application. Mowing may have increased herbicide efficacy by removing standing dead plants and allowing more herbicide to reach the soil, where it was taken up by plant roots the following spring.

## Management Implications

Mowed cuttings that evenly cover the soil surface may interfere with herbicide-soil contact. For this reason, mowing with conventional equipment may not increase efficacy of fall-applied herbicide unless the cuttings are windrowed. Using the Brown Brush Monitor® may enhance herbicide efficacy by increasing the amount of herbicide that reaches the soil. Increased herbicide in the soil in the fall makes more get into plants the following spring.