

[11] DEVELOPING A JOINTED GOATGRASS MANAGEMENT PROGRAM FOR THE INTERMOUNTAIN WEST. Ralph E. Whitesides*, Corey V. Ransom, Utah State University, Logan; and Don W. Morishita, University of Idaho, Twin Falls.

Jointed goatgrass (*Aegilops cylindrica*) is an annual invasive grass weed that infests winter wheat fields in the western United States, resulting in reduced wheat yield and quality. Native to southern Europe and Russia, jointed goatgrass is believed to have been introduced into the United States in contaminated wheat in the late 1800s. Jointed goatgrass infestations can reduce wheat yields up to 30%. In 2003, yield losses due to jointed goatgrass infestations for the Intermountain region, including Utah, southern Idaho, and parts of Nevada, were approximately 139,000 bushels of winter wheat. Jointed goatgrass management and identification are complex issues. Under conditions of adequate precipitation, wheat is more competitive for resources than jointed goatgrass. However, this relationship reverses once moisture becomes limiting. This is of particular concern in the Intermountain region because of severely limited moisture available for dryland cropping systems. In areas where annual precipitation is less than 15 inches per year, producers generally use a winter wheat-fallow rotation to ensure sufficient moisture for maximum crop yields. The best management technique for control of jointed goatgrass is to avoid an infestation in the first place. Once jointed goatgrass is present, however, measures need to be taken to prevent spread to uninfested areas. The most important element in preventing jointed goatgrass infestations is education. Cultural control practices that have shown the most promise for control include crop rotation, fertilizer placement, cultivating competitive wheat varieties, higher seeding rate, large-sized seed, altered planting dates, and improved soil moisture management. Research in Utah and Idaho showed that by including safflower as an alternative crop in a wheat-fallow rotation, jointed goatgrass populations were reduced to near zero in two separate 5-year studies. In comparison, jointed goatgrass plant density in a wheat-fallow rotation (without safflower) continued to escalate and was 5.4 (study 1) to 9.5 (study 2) times higher in the fifth year than the initial density. No single control component alone and no single management program will eliminate jointed goatgrass or be effective on all populations of jointed goatgrass. Each situation is unique and may require a different course of action. Long-term studies extending for 6 to 12 years are necessary to evaluate management programs when cropping systems include a fallow season. The key to effective management is the integration of control tactics over multiple years.