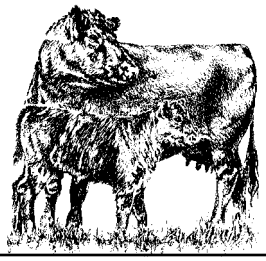

Western Beef Resource Committee *Fourth Edition*

Cattle Producer's Handbook

Range and Pasture Section 543

Ranch Biosecurity as a Weed Control Measure

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Weeds have been a plague to cattle producers in the United States for generations. On some agricultural operations, weeds have reduced the quality and productivity of pasture, crop, or rangeland by competing with desirable plants for water, nutrients, and light. On others, weeds have caused injury to livestock through reduced forage availability or through slower growth, abnormalities, or death caused by toxic/poisonous plants. On still others, weeds have resulted in less efficient use of resources, such as land, water, money, and employees. In short, weeds often have a direct impact on ranch efficiency, productivity, and profitability.

To minimize the impact of weeds, agricultural producers focus substantial resources (i.e., time and money) on weed control. One estimate is that U.S farmers and ranchers spend over $12 billion each year to control weeds (Pimentel et al. 2000; Monaco et al. 2002; Babbitt 1998). Despite these efforts, noxious and invasive weeds continue to spread at alarming rates—anywhere from 11 to 17 percent per year, depending on species (Table 1). This trend indicates that both the number of acres impacted by weeds and the cost associated with weed control will probably continue to grow into the future.

Table 1. Area infested and average annual spread rates of several noxious and invasive weeds in the U.S.

Weed species	Area infested	Avg. annual spread rate
	(million acres)	(%)
Canada thistle	12.7	11
Downy brome (or cheatgrass)	56.5	14
Leafy spurge	4.6	14
Medusahead	2.4	12
Musk thistle	7.6	17
Spotted knapweed	6.9	17
Yellow starthistle	14.8	15

Source: Duncan and Clark 2005.

Why Weed Prevention?

To manage weeds, ranchers generally adhere to one of two general approaches. The most common—yet least effective—is to make control of a new weed a priority only after it has spread across much of the ranch and started to impact ranch operations and profitability. Unfortunately, by then the weed has become so well established (i.e., large amounts of weed seed in the soil and extensive root system) that it will probably be around for many years, if not a lifetime.

The other approach is to take steps to prevent new weeds from ever becoming a problem. The medical adage, "an ounce of prevention is worth a pound of cure," is applicable to weed management. That is, a few dollars spent on prevention can be worth thousands (and sometimes millions) of dollars of cure. Though often overlooked, prevention should be the foundation of the weed control program on every agricultural operation. It is, by far, the most important ranch activity that can save time and money in weed control.

Where Do New Weeds Come From?

Before we can discuss weed invasion, we first need to understand the basics of weed biology—specifically, where new weeds come from and how they move around. Most of the noxious and invasive weeds in the U.S. are not native to this country. They come from Europe, Asia, Africa, and other places around the world. When they arrive in the U.S., either on purpose or accidentally, many are able to gain a foothold and begin to spread.

New populations of weeds are usually established through seed, although some species of weeds can reproduce from roots, bulbs, cut branches, and other plant parts. Weeds are prolific seed producers and their