

Overview of Recent Locoweed Research

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In the western United States, poisonous plants cause major economic losses to the livestock industry every year. Poisonous locoweeds and milkvetches in the genera *Astragalus* and *Oxytropis* are among the most destructive. Several species, including white and woolly locoweed, can increase in density, becoming dominant, given appropriate environmental conditions and habitat. These plants are native to western rangelands, thus management to control their economic impact will require a thorough understanding of their ecology and toxicology.

Even low densities of these poisonous plants can cause substantial economic impact. Livestock may search out and consume individual plants in preference to grasses. Although some *Astragalus* are nontoxic, and some have other toxins, white and woolly locoweed contain swainsonine. This toxin damages the nervous system of affected animals. Stopping consumption or counteracting the effects of poisoning when it occurs is critical to eliminating the economic impact of these plants.

Management of locoweeds has proven difficult. These opportunistic, native species are genetically diverse and can occupy a wide variety of habitats. For the past century, ranchers, other land managers, and scientists have been looking for the elusive “silver bullet” to control locoweed problems. The verdict to date: No one solution is going to work everywhere! Many different approaches are being studied, including toxicology, chemical and biological control, grazing methods, physiology, and ecology to better understand how we can manage the entire system. The solution will likely be a combination of methods that can be employed as natural resources, economics, society, and technology change.

As we continue to work at maintaining the sustainability of our western rangelands as productive ecosystems, the active management of poisonous plants is essential. The goal of the locoweed research presented in this volume is to develop the knowledge and technologies needed to maintain our rangeland ecosystems as truly renewable resources.