

Biological Control

Background

Biological control is the use of herbivores (domestic or wild) to aid in the management of invasive plant species. These plants are typically chemically or physically defended; therefore, herbivores do not readily seek them out for consumption. Chemical defenses in plants have negative effects on herbivores ranging from aversive post-ingestive feedback to reduced reproductive efficiency and even death. Although herbivores will naturally sample a variety of plants, current research is focusing on increasing animal preference for invasive species because chemical and mechanical control methods are becoming economically unfeasible. Biological control techniques are being incorporated all over the United States to help manage invasive species from leafy spurge to redberry juniper.



Process

The process of increasing preference for aversive plants has focused on several areas including behavior modification, genetic selection, and gradual toxin adaptation. Research at Angelo State University has focused on exposing weanling goats to juniper early in life to allow those animals to develop a preference for the plant. Researchers at the Texas Agrilife Experiment Station in Sonora, TX have been genetically selecting for goats with tendencies to consume high levels of juniper. Both areas of research are showing promising results.

Potential Effects

Biological control of invasive species is the latest tool in the ever evolving field of range management. By utilizing animals with a preference for invasive species, a producer can reduce the grazing/browsing pressure on beneficial plants and increase their competitive advantage over invaders. By implementing this practice along with mixed species grazing and sound management practices, ranchers could see an increase in preferred species, reduction in invasive species, and overall improvement of ecosystem health and stability.



Texas Section Society for Range Management

www.tssrm.org

Contact us at: tssrm_secretary@yahoo.com

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