



The Potential to Scale Alternative Forage Crop Production in the Colorado River Basin

This study set out to better understand the feasibility and potential scale for growing alternative forage crops in the Colorado River Basin. Alternative forage crops are expected to require less irrigation water than standard forage crops such as alfalfa hay and pasture grasses, and adoption of alternative forage crops may allow agricultural producers to respond to reduced water supply availability. This study explores potential pathways to scale adoption of alternative forage crops.

Scale of Forage Production in the Colorado River Basin

There are approximately 2.7 to 2.8 million irrigated acres served by Colorado River Basin water supplies. Approximately 60% of these acres (1.7 million acres) are some type of forage crop, specifically alfalfa hay, other hay, and pasture. Although all types of forage are grown across the basin, the Upper Basin states have a majority of forage acres in pasture while the Lower Basin states (plus New Mexico) have a majority of forage acres growing alfalfa hay. Pasture production for cow-calf operations and hay production for sale of feed represent different opportunities for adoption of alternative forage crops.

Evaluation Methods

The study involved two components: (1) **Phone Survey** of 20 producers and agricultural research specialists located in the Western U.S. who had varied types of operations and perspectives on forage production, and (2) **Economic Analysis** of analysis of crop production budgets for alternative forage crops to provide some perspective on the financial decisions faced by producers in switching from more conventional forages.

Findings on Ability to Increase Scale of Alternative Forage Production

The ability to scale alternative forage crop production should address both supply and demand factors. Current market conditions are not conducive to a significant increase in alternative forage production and there is economic risk to producers in voluntarily transitioning away from more conventional forages. Further work to promote alternative forage crop production should take an incremental approach, with a focus on funding pilot projects, exploring partial introduction of alternative forage mixes, and funding research to understand the benefits of alternative forages for both the feed producer and the feed buyer. Hay operations are estimated to be more receptive than cattle operations to alternative forage crop trials. Recommended near-term actions are provided below:

Supply Side Action: Conduct research and promote trial adoption of heterogeneous forage crop mixes

Heterogeneous forage crop mixes include a mix of both conventional forage species such as alfalfa and pasture grasses with drought tolerant species, including some annuals like triticale. There is interest among some producers in exploring heterogeneous mixes and research suggests that such mixes can maximize biomass per unit of applied water. An economic simulation of adopting a heterogenous mix indicates that it may be competitive with conventional alfalfa hay production. In order to promote this practice among producers, there needs to be more robust evidence built on field trials. In addition to heterogeneous crop mixes, field trials are also needed on other alternative forages, such as sainfoin, to understand if they provide economical returns with reduced water availability.

Demand Side Action: Fund research and promote trial use of alternative forages in feed mixes

A significant hurdle to greater alternative forage crop production is the need for buyer interest. Feedlots and dairies have relatively strict feed mixes and are often hesitant to try new feed types. This results in a robust market for alfalfa hay but an uncertain market for alternative forage hay. To increase the scale of alternative forage production, it will be necessary to create buyer interest among feedlots and dairies. To cultivate this interest, research and demonstration trials should be conducted to evaluate the suitability and benefits of alternative forages in the feed mixes at facilities.