

# Beef Day 2021

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## Developing web application tools to support beef cattle production

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### Objective

The objective of this project was to demonstrate the development of web-based applications to help producers gather and utilize data to make more informed management decisions for their operation.

### Study Description

Livestock producers make numerous production related decisions over the course of the year. A wide variety of decision support tools are available to producers using a number of different software platforms. The goal of this project was to develop two simple and easy to use web-applications to help livestock producer's decision-making processes. The first web-app, titled *SDSU Extension Grazing Calculator* (<http://agland.sdstate.edu/content/125>), is designed to help livestock producers with calculating appropriate stocking rates for each pasture under two scenarios: fixed land/time or fixed herd demographics. The second web-app, titled *SDSU Extension AI Angus Bull EPD Selection Tool* (<http://agland.sdstate.edu/content/198>), is designed to help producers select AI bulls based on setting EPD thresholds. Tools were built using Program R, which allows for complex calculations and data processing behind the scenes, while allowing for simple and easy to use interfaces for users. These tools will serve as the starting point for developing a series of web-apps named 'The Producer's Toolbox' to help producers access, generate, visualize, and interpret data relevant to their operation, enhancing their decisions, ranch sustainability, and animal performance.

### Take Home Points

A tool developed can help livestock producers quickly calculate stocking rates for multiple pastures under different harvest efficiency and forage production scenarios.

A tool was developed to help producers with selecting AI bull sires.

We will continue to build tools to help producers make informed management decisions for their operations.

### Acknowledgements

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