

Bull Selection and Management in Extensive Rangeland Production Systems of California

Introduction

- California Cow/Calf producer operate in diverse regional climates, topography and rangeland conditions.
- Wide variety of environmental factors bulls are exposed to and need to be able to adapt and perform.
- Limited research has analyzed factors related to selection and purchasing criteria, management and subsequent longevity of bulls.



Objectives:

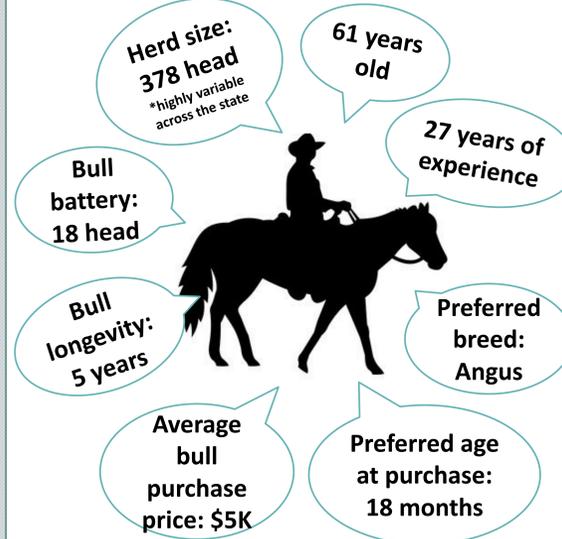
- Assess factors involved with bull purchasing, management, and culling decisions of California beef producers.
- Identify research and extension priorities that can enhance economic return on bull investments of Cow/Calf producers.

Survey Methodology:

- 1,140 surveys mailed to California Cattlemen's Association membership.
- 220 responses with a 16% response rate.
- Data analyzed with summary statistics, chi-square, and Pearson Correlation in SAS 9.4

Producer Demographics

Meet California's Average Producer
N = 220



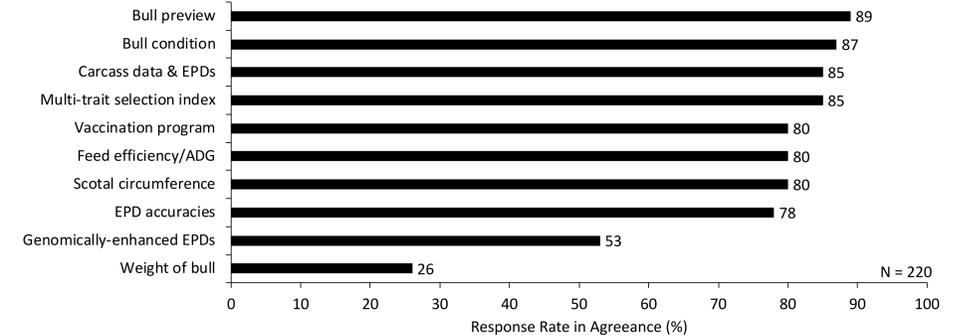
Bull Selection Criteria

Expected Progeny Differences (EPDs)

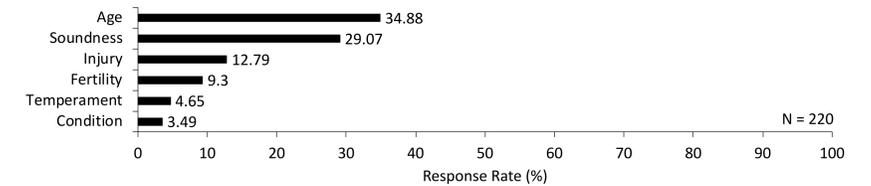


EPDs California producers utilize for bull selection (highest to lowest priority, N = 220) EPD are used to promote genotypic selection in the majority of utilized beef breeds. Breed associations collaborate with research scientists to improve EPD breed.

Factors of Importance for Bull Selection



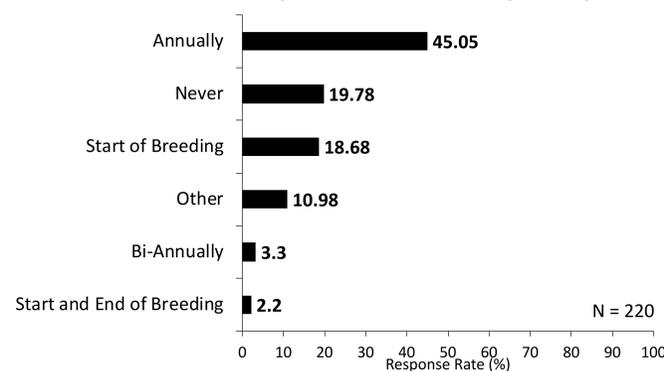
Primary Bull Culling Criteria



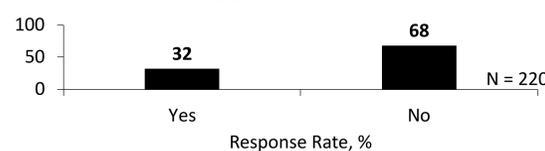
Current Bull Reproductive Management

- Semen Testing**
- Current stats: only 45% of producers evaluate semen quality annually
- Quality assessment and diagnostics**
 - Ejaculate should be assessed for:
 - gross semen quality
 - sperm concentration
 - pH
 - sperm motility
 - gel fraction
 - sperm morphology
- Breeding soundness exams**
- Integral for evaluating reproductive potential
- Exam involves:
 - systemic analysis of locomotor system (skeletal, muscular, and neurological factors, vision, external and internal genitalia)
 - thorough semen evaluation
- Establishes breeding values, predictive semen values, evaluates physical condition, and determines copulatory ability
- Assisted Reproductive Technologies**
- Artificial insemination
- Lab techniques for semen preservation and embryo production

Semen Quality Evaluation Frequency



Frequency of Use of Artificial Insemination



- Incentives to incorporate Assisted Reproductive Technologies into bull management
- Artificial Insemination**
 - Form genetically superior animals
 - Performance selection, maximized genetics
 - Required dose of semen per insemination is significantly lower than what is typically ejaculated from the bull --> breed more females per ejaculate
 - Reduced risk of injury to male and female
 - Avoids spread of venereal diseases
 - Utilize conventional or sexed semen
- Preservation of Genetics**
 - Cryopreservation allows for preservation of gametes for future use
 - Transportation and shipping of semen
 - Epididymal sperm harvest post-mortem or post-castration

Implications

This research indicates a need for additional research in bull selection and management to maximize producer investment in reproduction. Future producer trainings and economic analyses can be conducted with the results of this research.

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Acknowledgments

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