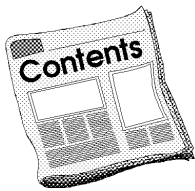


SISKIYOU STOCKMAN

What's New in the "Top of the State". A report for Siskiyou Livestock Producers put out by the Farm Advisors Office, Cooperative Extension of the University of California, located at 1655 South Main Street, Yreka, California 96097

October 2003



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Calendar

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| Nov. 8 | Siskiyou Cattlemen's Annual Fall Dinner, Winema Hall, Yreka |
| Nov. 19-21 | Annual California Cattlemen's Association Meeting with Nevada Cattlemen's Association, Reno. |
| Dec 17 - 19 | Western Alfalfa and Forage Conference, Monterey, CA |
| Jan 2004 | Special Feeder Sale, Cottonwood, CA |

Bull Effectiveness: Who is getting the job done?

Effectiveness of bulls in getting cattle pregnant in multiple sire breeding pastures is often difficult or impossible to determine. New DNA technology permits the determination of calf parentage in multiple sire breeding situations. Recent work from Australia sheds some light on the effectiveness of bulls. The Australian workers examined 235 bulls that were 2 to 5 years in age and used in groups from 2 to 25 in number. The breeding season varied from 3 to 12 months. There were a total of 4,251 calves.

Results showed that most (58 percent) of the bulls did not sire many calves (10 percent or less of the calves in their mating group) while some bulls (6 percent) did not sire any calves. On the flip side, a few bulls (14 percent) do most of the work, siring over 30 percent of the calves in their mating group. Interestingly, 10 percent of the calves had no potential sires from those tested, that is, the neighbors' bulls were their sires. The size of the bull groups had a significant impact on an individual's proportion of calves. In larger sire groups, 8 to 24 bulls, the maximum percent of calves sired by individual bulls was 26 ± 7 percent, whereas in groups of 2 to 7 bulls, the maximum percent of calves sired by individual bulls was 59 ± 19 percent.

This study uses new technology to look at a question that is difficult to address with more traditional methods. It points out the variability in fertility success in bulls and suggests that management to enhance the potential for bull effectiveness could be worthwhile. Results may differ due to different conditions in Australia just as conditions differ across the US. However, trends are likely to be similar.

Management alternatives to enhance fertility include adequate nutrition and condition of bulls prior to and during the breeding season. Similarly, preventative health

programs for bulls prior to the breeding season can insure healthy bulls at the start of the breeding season. Breeding soundness examinations each year can help pick up problems. New tests such as the fertility-associated antigen – FAA - test can help select bulls with more inherent fertility (see sidebar).

The new DNA technology has permitted examination of bull performance in multiple bull breeding pastures. The results confirm what many people have suspected: there are the worker bulls then there are some others. Additional studies are needed to help develop improved management.

Reference: Holroyd, R.G. et al. 2002. Animal Reproduction Science 71:67-79

FAA – New fertility test for bulls

A new test to consider when preparing bulls for the breeding season is FAA, fertility associated antigen. This is a protein produced by bulls that binds to sperm. Bulls that produce the protein, called FAA+ bulls, have had higher pregnancy rates than bulls not producing the protein, FAA-. Trials conducted over several years at the King Ranch in Texas using 242 FAA+ bulls and 192 FAA- bulls on 7,069 cows found 19 percent higher pregnancy rate in FAA+ bulls (85 percent) compared to the FAA- (66 percent) bulls. A smaller trial using AI on 1,150 females found pregnancy rates using semen from FAA+ bulls of 65.6 percent compared to 49.7 percent from FAA- semen, a difference of 15.9 percent. Currently tests on collected semen such as during the breeding soundness examination can be sent to a laboratory in Arizona for FAA testing. Charges are about \$40 per sample. Scheduled for release in January 2004 is a chute-side test.

Non-irrigated Grasses

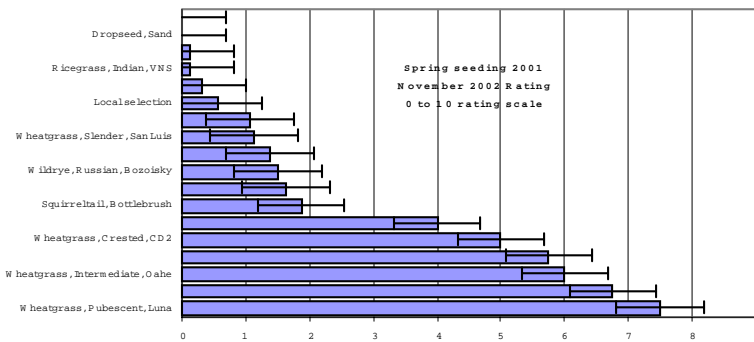
Results from a field trial in Montague suggest alternatives to the traditional grasses used in improving non-irrigated (dryland) range. The trial conducted at the California Department of Fish and Game Wildlife Area near Montague compared numerous native grasses to several traditional and new introduced grass species.

Plantings were conducted in the spring and fall of 2001 using a no-till type seeding. Several seasons of fallowing and disking were used prior to seeding as well as weed control at the time of planting with Round Up™. Due to drought conditions sprinkler irrigation was used in the spring to augment water attempting to only supplement up to normal moisture conditions. Ratings of the grasses were obtained in June 2001 for the spring planting and in November 2002 for both the spring and fall planting.

Many of the grass varieties from the spring planting were successfully established with comparatively much less success with the fall planting.

Based on a 0 to 10 rating scale used in November 2002, intermediate and pubescent wheatgrasses were significantly higher scoring than other grass species. New wheatgrasses, Maska pubescent wheatgrass and Rush intermediate wheatgrass, scored about the same as the traditional Oahe intermediate and Luna pubescent wheatgrass. Maska and Rush are newer varieties selected for improved livestock weight gains. Growers may want to consider one of these varieties in non-irrigated wheatgrass plantings.

Among the native grasses, bottlebrush squirreltail and Whitmar Bluebunch wheatgrass, were the most successful, although significantly lower than the best wheatgrasses. Livestock producers should recognize that bluebunch wheatgrass is susceptible to grazing pressure, whereas intermediate and pubescent wheatgrass has proven longevity to grazing pressure.



Evaluation of the more successful grass species in larger scale plots is planned. This work was partially funded by Ducks Unlimited. It was conducted in cooperation with Bob Smith, CA Dept of Fish & Game, Montague, CA, Dr John Menke, retired UC Davis agronomy, and Steve Orloff, Farm Advisor.

Current Topics Update:

Fall Dinner Program

The Siskiyou County Cattlemen's and CattleWomen's Associations are conducting a program that will include speakers on Country of Origin Labeling, updates on the Canadian beef situation, and new trichomoniasis regulations. The program is offered as part of their Fall Dinner event scheduled for Saturday, November 8 at Winema Hall at the Fairgrounds in Yreka. Contact Rex Houghton, 459-5437; Cliff Munson, 467-3403 or Jack Cowley, 459-5506; or Joe Sammis, 397-3456 for further information and to reserve a spot.

Carcass Quality Genetic Tests

Commercially available markers for quantitative traits and related websites are as follows: **GeneStar Marbling** is a marker that has been associated with increased marbling. The DNA variation is in the promoter of the thyroglobulin gene. This enzyme is involved in the pathway that creates fat cells within muscle fibers as energy stores. A certain form of this marker (*) has been associated with increased marbling in company trials and this finding was validated by National Beef Cattle Evaluation Consortium (NBCEC) on Simmental x Angus fed cattle (R. L Quass, pers. comm.).

They found an insignificant increase in marbling score but a significant (18%) increase in 2-star (as compared to 0-star) fed steers grading US choice. More information about this test can be found at:

www.geneticsolutions.com.au/content/genestar_standard.asp?name=GeneSTAR_Home

Igenity-L (Merial) is a marker that has been associated with increased marbling and appetite. The DNA variation is in the coding region of the hormone leptin encoded by the obese gene.

Leptin helps regulate appetite and energy metabolism and is an important component in the long term regulation of body weight. A certain form of this marker (T) has been associated

with increased marbling in beef cattle (<http://skyway.usask.ca/~schmutz/meat.html#leptin>). However unpublished studies performed by the NBCEC did not find that the different variants of this marker were related to marbling score in Simmental x Angus fed steers (R. L Quass, pers. comm.). A 7/20/03 press release regarding this test can be found at: http://biz.yahoo.com/prnews/030723/cgw082_1.html.

TenderGENE (MARC) is actually two markers that have been associated with increased tenderness. The DNA variations are located at two different places in the coding region of the μ -Calpain gene. This gene produces an enzyme which weakens muscle fibers thus increasing tenderness during the post-mortum aging process. Certain forms of these markers (SNP 316 "C" and SNP 530 "G") have been associated with increased tenderness in beef cattle. Validation studies by the NBCEC found an association between these two markers and a Warner-Bratzler shear force (WBSF) decrease of 1.8 pounds (R. L Quass, pers. comm.). More information about this test can be found at <http://www.frontierbeefsystems.com/>

GeneSTAR Tenderness is a marker that has been associated with increased tenderness. The DNA variation is in Calpastatin. This is a naturally occurring enzyme that inhibits the normal tenderizing of meat as it ages post-mortem through the regulation of Calpain. A certain form of the marker (*) has been associated with increased tenderness in company trials. No US validation studies have yet been performed on this marker. More information about this test can be found at: www.geneticsolutions.com.au/content/genestar_standard.asp?name=GeneSTAR_Home

From: Marker selection in beef cattle, Alison Van Eenennaam, UC Davis at CalPoly Beef Cattle Field Day, 10/4/03

This is your copy of the Siskiyou Stockman, which you requested, or which we thought would be of interest to you.

Sincerely,



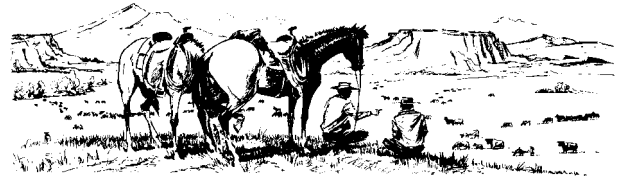
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