



HIGH DESERT RANCH & FAMILY

* A Quarterly Harney County Agricultural Newsletter*

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<http://extension.oregonstate.edu/harney/index.php>

Winter 2010

Inside Stories Page

*Oregon Beef Check -
off Dollars at Work* 2

*Sexed Semen
Something to con-
sider when planning
your AI program* 4

Calendar of Events 6

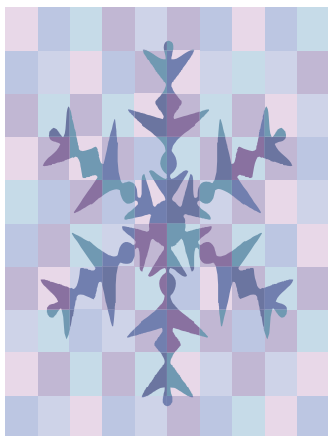
Dustin's Digest....

Well, it's finally starting to look and feel a little like winter once again in Harney County. I know I've been up early the last couple mornings plowing the snow out of our driveway, which has been a welcome inconvenience. My wife says that this is hardly an inconvenience for me, arguing that I'll use any excuse to ride my 4-wheeler, even if it's just up and down the driveway while plowing snow. Yep! I have to admit that's probably true.

A quick look at the Snotel information reveals that the last few weather systems have brought significant snowpack to the mountains. Indeed, this pleases not only the snowmobilers (another favorite pastime), but also those who hope to see water spreading across the Basin this spring.

Because we're a bit late in getting this newsletter out, I wanted to make sure that I mentioned the Cattlemen's Winter Feeding Workshop we're holding next Wednesday. Please see the "Calendar of Events" section of this newsletter for more information on the location and time of this and other educational events. David Bohnert, Reinaldo Cooke, and I will be on hand to discuss winter nutrition and feeding alternatives or anything else that you would like to throw at us in a forum style program. We gladly organized this meeting at the request of a young cattleman in the county who attended a similar program we conducted in the past. I mention this to emphasize that we are always willing to work with anyone who has an idea for an educational program. We hope to see you next week and please let us know if there is an Extension program you'd like to see us work on.

Dustin Johnson
OSU Extension Agent, Harney County



Oregon Beef Checkoff Dollars at Work

In 1986, the federal Beef Promotion and Research Act authorized the collection of a \$1.50 per head checkoff at the time of sale of cattle. Of each dollar collected, 50 cents is sent to the Cattlemen's Beef Board located in Denver to fund national programs of promotion, education and research. The remaining \$1.00, less a collection fee, is sent to the Oregon Beef Council.

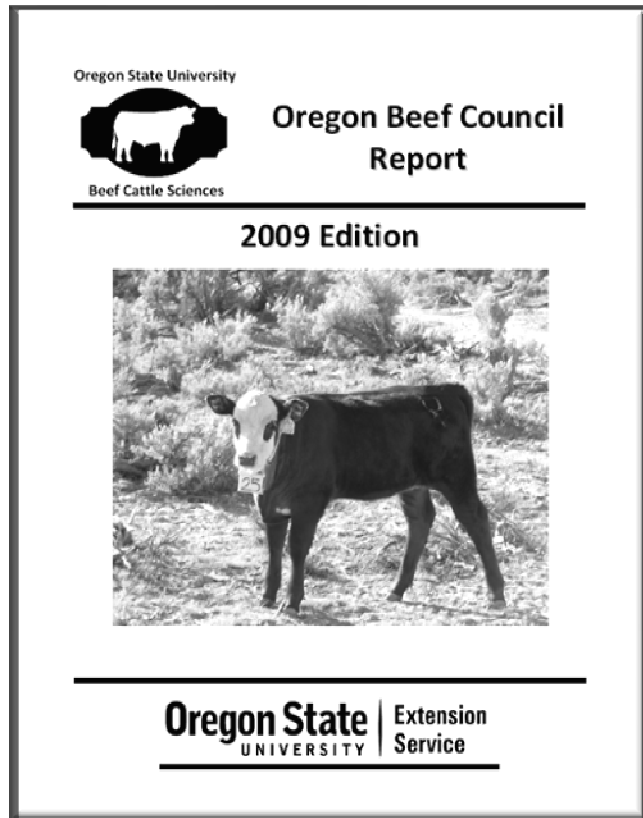
Locally, the 2008-2009 Fiscal Year was the third year of a 50-cent increase in the Oregon Checkoff. The additional Checkoff amount started collection on July 3, 2006. The Oregon Cattlemen's Association, Oregon Beef Council, and Oregon Department of Agriculture worked together to implement the new legislation. New program areas funded by the 50-cent increase include the following:

- Rangeland research projects – 10 cents
- Cattle production research projects – 10 cents
- Positive producer image promotion for both beef and dairy industries – 10 cents
- Study state and federal legislation and represent and protect the interests of the industry – 10 cents
- Administration of the above new programs – 10 cents

You can now view an annual report summarizing results or progress of research projects funded by Oregon checkoff dollars. This annual publication provides results or progress reports from studies funded by the Oregon Beef Council. Reports are divided into sections according to the field of the research: 1) Animal Sciences, or 2) Rangeland Ecology and Management.

Projects in the Animal Sciences section of the 2009 Oregon Beef Council Report include the following:

1. Copper Accumulation in Dairy Forage Production Systems
2. Late Gestation Supplementation of Beef Cows: Effects on Cow and Calf Performance
3. Oregon Bio-security Education and Demonstration Program Using Bovine Viral Diarrhea Virus, Persistently Infected (BVD PI) Cattle Screening as a Model to Minimize Risk of Infectious Disease and Initiate BVD Control
4. Outreach, Technical Assistance and General Project Facilitation for Farm-based Livestock Manure/Biogas Production Systems
5. The Impact of Fiber Digestibility on Energy of Cool Season Grasses



The following progress reports are also available in the Animal Sciences section of the 2009 Oregon Beef Council Report:

1. Effects of Acclimation to Handling on Performance and Reproductive Development of Replacement Heifers
2. Effects of Disposition on Reproductive Performance of Brood Cows
3. Impact of Maternal Marbling Potential on Growing/Finishing Performance of Single-Sired Calves and How Ultrasound Technology May Optimize Both Performance and Costs to Maximize Carcass Merit
4. Production Value and Efficiencies of Replacement Beef Heifers Sired by Either High or Low-Marbling Bulls
5. Rumen Characteristics and Forage Digestibility of Low, Medium and High Quality Forages Supplemented with Various Levels of Dietary Glycerol
6. Selenium Supplementation and Retention in Beef Cattle

Projects in the Rangeland Ecology and Management section of the 2009 Oregon Beef Council Report include the following:

1. Behavior and Distribution of Cattle Grazing Riparian Zones
2. Evaluation of Wolf Impacts on Cattle Productivity and Behavior
3. Relationships Between Insect Abundance and Plant Community Characteristics for Sage-Grouse Brood-Rearing Habitat
4. VegMeasure2: A Software Package that Facilitates Measurement of Foliar Cover, Litter, and Bare Ground on Rangelands

The following progress reports are also available in the Rangeland Ecology and Management section of the 2009 Oregon Beef Council Report:

1. Development and Evaluation of Rangeland Vegetation and Sediment Monitoring: Phases I and II
2. The Potential of DNA Analysis for Accurate Cattle Diet Determination in Sagebrush Steppe Rangelands

The website that hosts this and other OSU Extension information pertaining to rangeland ecology and management and beef cattle production can be accessed at the following web page: <http://beefcattle.ans.oregonstate.edu/index.htm>. If you do not have internet access or prefer not using the internet, you can request a hard copy of any of the above articles in the 2009 Oregon Beef Council Report by contacting Dawnetta Hauth with the Eastern Oregon Agricultural Research Center at 541-573-8900.

Sexed Semen – Something to consider when planning your AI program

David Bohnert, Eastern Oregon Agricultural Research Center, Burns

Sexed semen is a relatively new technology available to cattle producers. It is possible to separate X-bearing (female) and Y-bearing (male) sperm through a process called flow cytometry. The first gender-selected calf produced using frozen semen was born in 1999; however, there has been limited application of sexed semen technology by the dairy industry and much less by the beef industry. Nevertheless, as technology improves, sexed semen will undoubtedly contribute to increased profitability and enhanced efficiency for both beef and dairy producers. If producers consider using this technology in their operations, they must understand the advantages, disadvantages, and potential application of this technology. Some of the advantages of sexed semen technology include increased proportion of gender specific offspring (90:10 and 75:25 products are currently available commercially) and greater control over genetic improvement. Meanwhile, some disadvantages of sex semen include decreased conception rate (70 to 85% of traditional frozen semen) and increased cost (normally an additional \$5 to \$30 per straw) compared with traditional semen.

Sexed semen has been used predominately by the dairy industry because of its extensive use of artificial insemination (AI) and the potential for direct economic benefit. However, sexed semen is a management tool that can be effectively used by both commercial and seedstock beef producers depending on the individual operation's management objectives, facilities, and resources.

Commercial Beef Production

The commercial cattle enterprise produces calves for two primary purposes – for female herd replacements and/or for eventual sale (weaning, yearling, or retained ownership). Therefore, bull and heifer calves may be valued differently depending on the purpose of the individual operation's management objectives.

Replacement females. Sexed semen can be used with an operation's most genetically superior females to produce female offspring for use as replacements, thereby making maximum use of genetic progress. The use of sexed semen that contains a 90:10 or 75:25 female to male sperm will decrease the number of cows/heifers that will need to be bred to obtain replacements. For example, let's assume a 100-cow herd replaces 20 cows each year. Also, the manager uses an AI program to obtain female herd replacements. If the herd manager decides to use 90:10 or 75:25 (female:male) sexed semen compared with conventional AI (50:50) and the average pregnancy rate to AI is 56% for the sexed semen and 70% for conventional semen, the absolute minimum number of females that would need to be bred to obtain 20 heifer calves from first service AI is estimated to be 41, 49, and 59 for the 90:10, 75:25, and conventional system, respectively (assuming 2% loss from pregnancy determination to weaning). Therefore, the use of sexed semen allows the herd manager to minimize the quantity of breeding age females that are needed in a replacement breeding program. This in turn reduces the units of semen, the doses of synchronization drugs, and the labor needed to carry out an AI program designed to obtain female replacements. In addition, the use of sexed semen allows for the younger females in the herd to be selected to produce daughters. This has two substantial benefits. The youngest females in the herd are normally the most genetically superior and using the youngest animals in the herd to produce daughters will, thereby, decrease the generation interval. Also, younger females typically experience higher rates of calving difficulty. By selecting these females to produce heifer calves, the incidence of calving difficulty will be decreased and calf survival should be increased because calving difficulty is greater with male calves.

Marketing of male calves. For those beef operations that use an AI program with their cow herd, the use of sexed semen can allow for a greater proportion of male calves. Normally, male calves are not only heavier than female calves of a comparable age but they are worth from \$5 to \$10 per hundred weight more than heifer calves. Consequently, this would allow for more economically valuable calves to be produced each year.

As an example, let's assume that a producer has 100 mature cows that are used in an AI program to produce calves that will be sold at weaning. The breeding program consists of a single AI breeding and then natural service for the remainder of the breeding season. We assume that the first service pregnancy rate for sexed semen is 56% and the first service pregnancy rate for traditional semen is 70%. In addition, we assume an overall pregnancy rate of 90% and an 85% weaning percentage. Therefore, the use of 90:10 or 75:25 (male:female) sexed semen compared with conventional semen (50:50) would result in an estimated overall male calf to female calf ratio of 62:24, 55:31, and 43:43, respectively. Consequently, the use of sexed semen results in 19 (90:10 semen) or 12 (75:25 semen) more male calves than traditional AI. If male calves averaged 575 pounds at weaning and were valued at \$1.10 and heifer calves averaged 525 pounds and were valued at \$1.00, the use of the 90:10 and 75:25 sexed semen would result in an increase in gross sales of \$2,059 and \$1,287, respectively, compared with traditional AI.

Seedstock/Purebred Operations

Seedstock operations produce breeding animals, semen, and embryos for sale to other seedstock and commercial beef producers. To be competitive in this industry, producers must maximize the rate of genetic improvement while seeking a balance between male and female selection intensities. Sexed semen is a powerful tool that can assist with this challenge.

Use of sexed semen allows beef producers to maximize the number of gender specific offspring from specific matings. This is important when producers are looking to maximize the number of replacement females, bulls, or gender-specific embryos from certain genetic lines of cattle. It increases the efficiency of genetic selection by allowing for the targeted production of gender-specific offspring that meet specific criteria, thereby increasing the profit potential of the calf crop.

Another potential application of sexed semen technology is through a three-breed terminal crossbreeding program. This is a popular beef production system that requires three types of matings. The first mating requires purebred maternal-breed cows to be mated with sires of the same breed to obtain replacements and to maintain the base herd for crossbreeding. The second mating requires the purebred cows to be mated to sires from a different maternal-breed to produce crossbred daughters. The third mating would require sires from an unrelated breed to be mated with the crossbred daughters to generate terminal crossbred calves for market. The use of female-specific sexed semen would decrease the number of cows needed for the first two matings that generate and maintain the breeding herds, leaving more total cows to participate in the male-specific terminal sire mating. This will result in a greater number of male calves and, consequently, increased revenue from the sale of those calves.

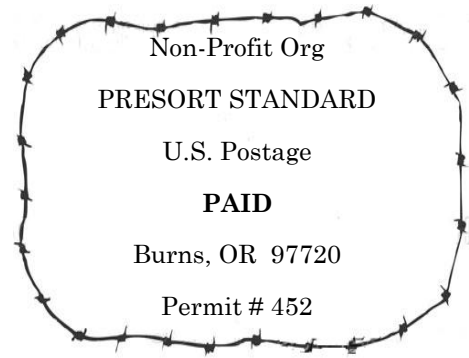
Summary

Sexed semen is not a reproductive management tool that will work for all beef operations. It requires a well managed cow herd, good working facilities, and the use of AI which is not economically or logistically feasible for many of the extensive beef operations in the Intermountain West. However, it can provide a means for some operations to effectively meet their management objectives.

The economic viability of using, or not using, sexed semen technology depends on a number of variables that are specific to each individual operation. Some of these considerations include heifer discounts if calves are sold for eventual slaughter, the economic value of genetically superior heifers that are raised for replacements, economic value of a decreased generation interval, the cost of sexed semen compared with traditional semen, pregnancy rate of sexed semen compared with traditional semen, overall pregnancy rate, overall weaning percentage, and annual bull costs. A really nice EXCEL spreadsheet is available from Genex Cooperative, Inc. that can help producers evaluate the economics of using sexed semen in their operation. To obtain a copy of this spreadsheet contact your local Genex Area Beef Representative. In Oregon, Washington, and California the Genex Beef Team Leader is Morgan Johnsrud (mjohnsrud@crinet.com; 541-586-2751).



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 1301-01-28-230



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CALENDAR:

FEBRUARY— 3 - OSU WINTER FEEDING WORKSHOP, 3-7 PM AT THE EASTERN OREGON AGRICULTURAL RESEARCH CENTER, MP 4.62 HWY. 205, BURNS, OR. PLEASE JOIN US FOR AN INTERACTIVE DISCUSSION WITH FELLOW PRODUCERS AND LIVESTOCK/RANGE SPECIALISTS ABOUT PRACTICAL OPTIONS FOR LOWERING OPERATING COSTS ASSOCIATED WITH WINTER FEEDING PROGRAMS. CONTACT DUSTIN JOHNSON AT 541-573-2506 OR DAVID BOHNERT AT 541-573-8910 FOR MORE INFORMATION.

7-11— WORKING LANDSCAPRES...PROVIDING FOR THE FUTURE, JOINT ANNUAL MEETING OF THE SOCIETY FOR RANGE MANAGEMENT AND THE WEED SCIENCE SOCIETY OF AMERICA. DENVER, CO. FOR MORE INFORMATION VISIT: [HTTP://WWW.RANGELANDS.ORG/DENVER2010/](http://www.rangelands.org/denver2010/)

15-17- OREGON PESTICIDE APPLICATOR STUDY SESSIONS, 6-8 PM EACH NIGHT IN THE BASEMENT MEETING ROOM OF THE HARNEY COUNTY COURTHOUSE, BURNS, OR. PLEASE JOIN US IN THESE STUDY SESSIONS CO-SPONSORED BY OSU EXTENSION AND THE HARNEY WEED CONTROL OFFICES IF YOU PLAN ON GETTING YOUR PESTICIDE APPLICATOR'S LICENSE THIS SPRING. CONTACT DUSTIN JOHNSON AT 541-573-2506 OR JESSE BARNES AT 541-573-8385 FOR MORE INFORMATION.

19-20—OCA SPRING QUARTERLY & LEGISLATIVE RECEPTION. CORVALLIS, OR. FOR MORE INFORMATION VISIT: [HTTP://WWW.ORCATTLE.COM/](http://www.orcattle.com/)

APRIL—8— 9:30—4PM. GRASSHOPPER INTEGRATED PEST MANAGEMENT WORKSHOP. THE WORKSHOP WILL FOCUS ON THE LATEST TOOLS FOR MANAGING GRASSHOPPERS; BIOLOGY AND ECOLOGICAL ROLE OF GRASSHOPPERS; GRAZING MANAGEMENT AS A METHOD TO REDUCING GRASSHOPPER POPULATIONS; COST SHARE PROGRAMS FOR GRASSHOPPER SUPPRESSION; AND HANDS-ON DEMONSTRATION OF CALIBRATING AN ATV SPRAYER. LOCATION: EASTERN OREGON AGRICULTURAL RESEARCH CENTER, HWY. 205. PLEASE PRE-REGISTER WITH THE HARNEY COUNTY EXTENSION OFFICE AT 541-573-2506. THE WORKSHOP WILL HAVE A \$10 REGISTRATION FEE.