February 2014

Fort Keogh Researcher

USDA Agricultural Research Service

In cooperation with

Montana State University Montana Agricultural Experiment Station

Montana State University Extension

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Introduction

Dr. Mark Petersen, Research Leader

Greetings from Fort Keogh. I hope this newsletter finds you looking forward to a promising spring only 20 days away! Last year was an interesting year with both great highs and some unwanted lows. First of all, we had good, well spaced moisture last year. By the end of December we were 46% above our average (just the opposite of 2012 when we were 40% below normal). With the regular frequency of moisture we had visible green grass all year up until mid-December when it got covered under 8 inches of snow. But that green grass helped with heavier calves at weaning, high pregnancy rates along with lots of grass and hay (see Brad's corner on page 7). There was a cautious attitude concerning the implementation of our new 5 year beef cattle project plan with 2 groups of heifers to be reared on winter range with minimal inputs. We were very pleased when each group tested over 90% pregnant in the fall running basically on range grass. Then what topped off the great grass and cattle year were cattle prices. Our Ranch Manager Brad Eik has written a more detailed account about our production on the last page. I remember when calves first broke one dollar and thinking what a great price that was. I never imagined we would sell calves for over 2 dollars. The good year financially was a needed shot in the arm as we are recoiling from the budget reductions passed through the federal government. Our response to those reductions has been to abolish one scientist, one technician and one program support assistant position over the last 2 years. In addition, we have discontinued our summer internship program for college and high school students. A rancher in eastern Montana concerned that we had discontinued the internship program gifted the Fort funds for 3 college student interns this summer. We will be cooperating with the Animal and Range Sciences Department at MSU to implement the internship gift.

When you stop by to visit us this year you will see new people. Dr. Lee Alexander (Beef Cattle Genomics) retired in September, Whisper Kelly a Range Nutrition Science technician, left in August to start a new career in the feed industry, and Maribeth Wuertz, Administrative Officer, made a move in August to the National Park Service. Russell Morgan, a PhD student working with Lance Vermeire, has taken an extension faculty position at Texas A&M as a Fire Ecology Specialist working out of San Angelo. We wish her the best of luck in her new career. Then, in October, we hired a new building engineer from Offutt Air Force Base in Nebraska, Luke Shurtliff. Luke comes to us with a lot of great experience and we look forward to him taking over the job and making it his own. Our building at times can act like a sensitive organism. We signed on Amy Bontrager as our incoming Administrative Officer who will be starting in March. Her experiences are varied as a financial analysis, budget management, logistics, and managing people. She will move to Miles City with her husband and young son. Amy is enthusiastic about this position and Montana and we are excited about her joining the Fort Keogh family. Next in personnel changes, Andy Roberts was awarded an ARS National Programs Post-doctoral award to support our functional genomics program. We

Introduction (continued)

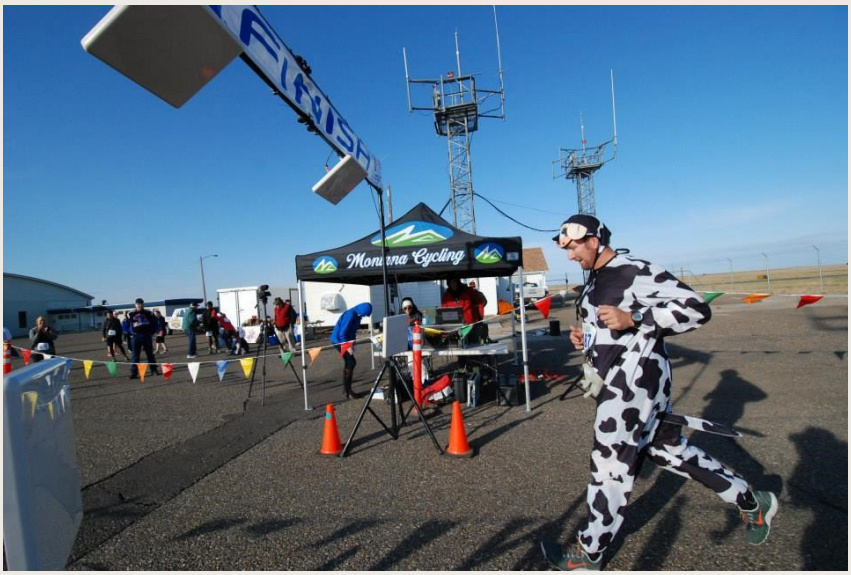
expect that position to be advertised in the next couple of months. In the same discipline, we are close to announcing a search for a new genetic/genomics scientist to join our scientific team. We suspect this position could be advertised about the same time the post doctoral position is made public. Another personnel change is in association with our cooperative affiliation with Montana State University. We just completed interviews for the MSU Beef Cattle Extension Specialist. All of the candidates were highly qualified and we look forward to Fort Keogh being their professional home. We in turn provide office space, technical support and a great research facility for them to work at so they can more readily provide extension education to eastern Montana.

Since last fall, we have had a visiting doctoral student from Oregon State University, Merilyn (Hirsch) Schantz who has an article on page 4. Lastly a visiting scientist from Spain will arrive at Fort Keogh in May to work with Andy Roberts on range cow efficiency and longevity research problems

Since the last newsletter we have had a number of groups visit the Fort for pasture/cattle/research tours. This includes community college students, university students, Line Breeders Association, 4-H Beef Project leaders, Governors' Range Tour, Australian ranchers group and Red Angus Youth Association. In June we are planning on the Montana Stock Growers Association during their mid-year meeting to have lunch here at the Fort followed by a 2 hour tour. In September, a half day tour will be held with members of the Montana Hereford Association in conjunction with the Hereford Field Day to be held at the Custer County Fairgrounds. Many of our scientists and technicians accept individual invitations to speak at conferences and meetings all over the region and the country. We value getting our research results into the hands of people that would like to use it. Finally we held a couple of rancher roundtable discussions with small groups of ranchers that wanted to share ideas, experiences, observations and results of experiments or new management techniques. These events have been very good for us to learn what are the concerns and ideas of our neighbors.

Please come out to visit us or bring your group for a roundtable discussion or a tour. We enjoy sharing our work with anyone. Have a good spring!

Peter Taylor, dressed as the token cow, crosses the finish line from his half marathon run at the ***Hoofin It for Hunger*** Fun Run held in Miles City on October 13. There were 51 runners in the 5K, 20 runners in the 10K, and 34 runners in the half marathon. The run was organized by Farm Bureau Young Farmers and Ranchers, Fort Keogh Employees, Holy Rosary Healthcare, and the Montana Food Bank network. This year we raised over $5500 for the Montana Food Bank and about 800 pounds of food was collected for the local food bank!



Early weaning

When environmental conditions such as drought jeopardize cattle production by reducing calf growth and weaning weights and decreasing cow body condition and body weight, early-weaning management strategies may offer some relief.

Calf weight is critical to the economic viability of a ranch, and reduced cow weight and body condition may negatively impact future production. Animal health and well-being may also be affected in stressful situations created by drought conditions. Agricultural Research Service (ARS) scientists at our Fort Keogh Livestock and Range Research Laboratory (LARRL) in Miles City, Mont., have found that early weaning of spring-born calves improves body weight gain and condition of the cow herd.

Animal scientist Richard Waterman and his colleagues at LARRL, along with researchers at Montana State University and the American Simmental Association in Bozeman, Mont., evaluated the early weaning of beef calves and the impact it has on cow, heifer (young female cow) and steer performance.

Scientists compared calves weaned at a traditional age of 215 days to calves weaned early at 80 days of age at two locations—LARRL and a commercial ranch at Judith Gap, Mont. Cows that had their calves removed at 80 days weighed more and were in better body condition going into winter, reducing the amount of harvested feedstuffs required to over winter these cows.

Under some circumstances, early weaning might also increase the likelihood of the cow becoming pregnant earlier in the breeding season, according to Waterman.

When drought hits rangeland limiting forage, it can be more productive for cattle ranchers to wean calves much earlier, according to ARS research.

Heifers that were early weaned reached a reproductive age sooner. Also, early weaning did not impair a heifer's opportunity to be retained in the herd as a replacement female.

An evaluation of steer calves for body weight gain, feedlot performance and carcass characteristics supported the concept that early-weaned steers reach maturity sooner during the finishing phase, according to Waterman.

However, the research also revealed that if early-weaned steers are not identified prior to entering the feed yard or finishing phase and subsequently harvested at a similar time as traditionally weaned calves of similar genetics and age, early-weaned steer carcasses may be too fat and receive less desirable U.S. Department of Agriculture (USDA) yield grades. Yet, if early-weaned steers are identified prior to entering the feed yard and harvested at an early age, market premiums can be earned for those carcasses.

ARS is the chief intramural scientific research agency of USDA. These research findings, which were published in *Livestock Science*, support the USDA priority of promoting international food security.

By Sandra Avant / USDA-ARS

Local returns to Fort Keogh

Happy New Year!

I hope you all had safe and wonderful holidays and that you are excited for another new year! I am Merilynn (Hirsch) Schantz and am working on a Ph.D. with Oregon State University in association with the USDA-ARS Eastern Oregon Agricultural Research Center in Burns, OR. Because the ARS and my advisors have good working relationships, I have had the privilege of returning home to Miles City to be with my family and finish writing my dissertation.

As a local gal, I began working at Fort Keogh at the age of 16 on the Range Crew (identifying and clipping plants etc.) and worked here until I graduated from high school. My experiences at Fort Keogh enticed me to pursue a Range Science career; so, soon after graduation, I ventured to Lincoln, Nebraska, where I received my undergraduate degree in Rangeland Ecology from the University of Nebraska-Lincoln. Next, I headed to Utah State University to pursue a Master's Degree where I worked for the USDA-ARS Forage and Range Research Laboratory on a project that uncovered how plant-soil relationships change due to changes in management strategies, such as prescribed fire, targeted grazing, and use of pre-emergence herbicides. Following my Master's degree, I returned to Miles City for a short time and happened to meet my husband. We were married in September, 2012 and had been living apart until recently. The joy of being home and working with all the great people here from Fort Keogh is endless, and I am extremely grateful to have this opportunity.

In Oregon, I am working on a study designed to develop better methods for restoring annual grass invaded rangelands with native perennial grasses. Specifically, our aim is to identify how crucial the amount of perennial grass seed used, season of seeding, number of times an area is seeded, and moisture availability is on the population and yield of annual and perennial grasses.

Annual grasses, like cheatgrass, Japanese brome, or medusahead (an aggressive winter annual grass that is changing the ecology of eastern rangelands in Oregon), are acclimated to a range of conditions and are a major problem throughout the western U.S., especially the Great Basin, which is the land that lies between the Rocky Mountains and the Cascade and Sierra Nevada Mountains. Cheatgrass, for example, received its name from farmers and ranchers at the turn of the century anticipating they were to receive a bountiful hay crop in the early spring, but soon realized by early summer, they had been cheated because the awns that cheatgrass produced were unpalatable to livestock rendering any hay useless. Following the introduction of annual grasses in the late 1800's, annual grasses spread quickly, especially in disturbed areas and overgrown sagebrush regions. This was because annual grasses, unlike perennial grasses, are able to thrive under sagebrush canopies and will easily spread into recently disturbed spaces between sagebrush. The combination of large, old growth sagebrush and small annual grasses creates a continuous fuel load on these once patchy landscapes such that when fire occurs, acreage burned is larger, wildfire burns hotter, and severity of damage is greater than would have occurred if cheatgrass was not present.

Controlling lightning started wildfires in this region is a daunting task. Not only can temperature in the summer months reach upwards of 100 ºF, but the winds, topography, and fuel load contribute to wildfire spread. The additional effects from wildfire on annual grass invaded areas include increases in landslides and wildlife habitat losses. For example, because annual grasses root systems turn over annually, when rainfall occurs in the winter months, the lack of root structure fails to hold soils together causing major landslides in mountainous regions. In addition, sagebrush-steppe ecosystems are the primary habitat of sage grouse.

Wildfires generally encourage spread of annual grasses in the Great Basin. Following wildfires, annual grasses quickly reestablish and generally dominate a recently burned area within two growing seasons, when no control management is used. Consequently, it is estimated that over 100 million dollars are spent each year in managing the effects of annual grasses, although restoration success rates are low, about 10%.

To effectively manage the effects of annual grasses, my advisor, Dr. Roger Sheley, of the USDA-ARS in Burns, Oregon, created a forecasting computer program, named "Ecologically Based Invasive Plant Management" or EBIPM (www.EBIPM.org). This program assesses ecologically based invasive plant management control practices comparing various science based solutions to resolve management problems. Over the past seven years, Roger's team of scientists and graduate students has worked on testing each part of the EBIPM model throughout the Great Basin to ensure the accuracy of the forecast. Testing has spanned five states and projects have focused on how annual grasses affect historical ecology, plant invasion vigor, seedling ecology, management practices, and economics. In 2012, EBIPM was the focus of the *Rangelands* Journal published by the Society for Range Management and many of these completed studies were illustrated. Data collection is still ongoing to better identify the results from different restoration methods on reducing the effects of annual grass invasion in rangeland ecosystems.

Visiting Scientist, cont.

Dr. Sheley's EBIPM model suggests that plant community composition is driven by site availability, species availability, and species performance. Site availability means that a site must be available for a seed to germinate and survive to produce good seed. Site availability is determined by the number of disturbances that provide open space for new plant establishment. Species availability refers to the ability of an established plant to produce and disperse viable seeds to open spaces. The sum of number and viability of seeds produced as well as available open spaces strongly influences the species success. Plant traits also affect plant community composition depending on how plants respond to environmental conditions like weather, their life history from germination to adult stages, how they manage stress, and how they tolerate interference. Even though this model seems to have a lot of common sense behind it; there is still much work to be done to improve its prediction accuracy.

My role is focused on species availability. Species availability is determined by species dispersal, or the timing and rate of spread of seeds and the reproduction characteristics. Identifying the role of dispersal in invasion and restoration is challenging. Depending on the type, the time, and the amount of seeds that arrive in a plant community, plant community composition will vary. For example, annual grasses generally disperse their seeds, germinate, and emerge about 2-3 weeks before perennial grasses, allowing annual grasses to preemptively occupy and dominate favorable growing sites. Complicating the success of perennial grasses, in annual grass invaded regions; annual grass seeds typically make-up about 99% of the total number of seeds in the soil. Thus, even when managers eradicate the above ground production of annual grasses, annual grasses will still typically return due to their enormous seed bank in the soil. When perennial grass seeds are added to areas that annual grasses dominate, restoration outcomes of perennial grasses are typically poor. Consequently, it is of upmost importance to identify why perennial grasses are unable to be restored to annual grass invaded ecosystems.

Multiple studies have investigated various management treatments to increase perennial grass reestablishment. Restoration outcomes generally are heavily influenced by year and precipitation. For my study, I took a different approach; my goal was to identify the role of seeding time, seeding rates, and water availability on annual and perennial grasses throughout their life history. To complete this task we tested the effects of perennial grass seeding timing and frequency, soil moisture availability, and annual and perennial grass seeding rates on annual and perennial grass seedling density from germination to the second-year of adult life and final grass yield two years following seeding.

Some of the results of my study were surprising. For example, we found that perennial grass germination success was two times higher when perennial grasses were seeded with annual grasses as compared to being seeded alone. We also found that perennial grass success was highest when the number of perennial grass seeds exceeded 2500 seeds per square meter. In addition, seeding half of the allotted amount of perennial grasses in the fall and the remaining half in the spring produced the highest success as measured by population number and plant growth of perennial grasses two-years following seeding. However, when the number of annual grass seeds exceeded 1500 seeds per square meter, perennial grass density and yield was low, regardless of the number of perennial grass seeds added. When moisture availability was higher, perennial grasses had high numbers in early growth stages, but because moisture strongly increased annual grass production; additional moisture only yielded higher numbers of perennial grass plants two-years following seeding when the number of annual grass seeds were low. Coincidentally, initial effects of high perennial grass germination when seeded with annual grasses do not seem to predict restoration outcomes. Alternatively, when the number of annual grass seeds is low; increasing perennial grass seeding to both fall and spring promotes the highest perennial grass success.

Improving perennial grass restoration success on highly annual grass invaded systems is difficult and the application of my results to other ranges like the Northern Great Plains, needs to be tested before any recommendations can be given. Currently, I am working with scientists here at Fort Keogh to submit a competitive grant to the USDA that would identify whether the results that I found in Oregon can be useful to reclaim and restore rangelands threatened by annual grasses in the Northern Great Plains or in the Rocky Mountains.

Eliminating annual grasses is not likely, although reducing the effects through restoration efforts seems probable when using ecologically based invasive plant management strategies. Because our research has identified that there is a threshold where restoration success is economically unrealistic; focusing best land management practices on healthy non-degraded areas may be a better option economically than trying to re-create healthy plant populations after rangeland has been severely degraded. My hope is that our research serves to create an alternative tool that can be used by some land managers to limit the impact of annual grasses on our rangelands.

Fort Keogh Outreach Activities

December 13, 2013—Fort Keogh Open House with tours.

November 14, 21013—Rancher Roundtable with Big Sandy Ranch.

October 21, 2013—Fort Keogh hosted 25 students and 1 teacher from the Montana Student Senate Conference being held in Miles City, MT. Brad Eik, Assistant to the Superintendent, opened with an overview of Fort Keogh, followed by Erin Espeland, Ecologist, giving a talk titled '5 easy steps to becoming a scientist.' Kurt Reinhart, Ecologist, then talked about careers in ARS and explained his background and how he came to be a scientist, and then Andy Roberts, Reproductive Physiologist, gave a bus tour of his project talking about animal science and the resources available to do research.

October 13, 2013—Hoofin' It for Hunger, 5K, 10K and Half Marathon race with Montana Farm Bureau as a Food Bank Network Fundraiser. Over $5500 was raised for the food bank and we collected almost 300 pounds of food for the local food pantry.

October 17, 2013—Miles City Leadership Workshop visited Fort Keogh. Brad Eik, Assistant to the Superintendent, gave an overview of Fort Keogh and the research being accomplished here. There were about 20 participants of local business people.

September 28, 2013—4-H Beef Leadership seminar and Tour.

September 22, 2013—a Customer Focus Group meeting was held. There was good attendance and updates of the research were given and discussions held on current and future research.

Sept ember 10—National Red Angus Association meeting in Lewistown – Fort Keogh Livestock and Range Current Research Seminar.

September 10th—Governor's Range Tour reviewing fire ecology plots and research.

August 27, 2103—Rancher Round Table with 4 area ranches.

June 30— Australian Rancher Tour.

June 24, 2013—Prairie County Range Tour: Exploring Fort Keogh. About 20 producers from Prairie County received research updates as follows: Fort Keogh: Introduction and Research Overview, Mark Petersen; Timing of Grazing after Fire, Lance Vermeire; Riparian Grazing Management, Clayton Marlow; and Do the Heifer Development Strategies of Yesterday Work for your Cattle Today? Andy Roberts. In the afternoon a tour of the range to look at the heifers in a grazing-based heifer development study, see pastures with various stocking rates or seasonal use, and talk about late season protein supplementation, was provided.

June 24, 2013—The Red Angus Jr. Round Up group of 65 high school students visited Fort Keogh. They were given a full tour consisting of talks by Mark Petersen (Introduction and History), Andy Roberts (What do you know about Genetics? And Reproduction: from beginning to end), Richard Waterman (Nutrition: Meet the amazing Rumen), Morgan Russell and Jen Muscha (Range: Fire!). They were then given a tour of the horsebarn and then toured up the hill and Andy Roberts showed them the CGC Composite Herd and Morgan Russell showed them the burn plots. The students took the afternoon to compete in speech contests.

June 11— MT Fish Wildlife and Parks — Tour Russian Olive Recovery Site.

May 2—Sue Bellows, Bio. Lab. Tech., gave a presentation/demonstration to the High School Ag students on a career opportunity in cattle reproduction. They talked about all aspects of the artificial insemination process including semen collection on the bull side and synchronization on the cow side. Also, a hands on demonstration where the students were able to practice the technique of artificial insemination on reproductive tracts was provided.

Fort Keogh Current Publications

Branson, D.H., Vermeire, L.T. 2013. Heat dosage and oviposition depth influence egg mortality of two common rangeland grasshopper species. Rangeland Ecology and Management. 66(1):110-113.

MacNeil, M.D., Vermeire, L.T. 2012. Effect of weather patterns on preweaning growth of beef calves in the Northern Great Plains. Agricultural Sciences. 3(7):939-935.

Minten, M.A., Bilby, T.R., Bruno, R.S., Allen, C.C., Madsen, C.A., Wang, Z., Sawyer, J.E., Tibary, A., Neibergs, H.L., Geary, T.W., Bauersachs, S., Spencer, T.E. 2013. Effects of fertility on gene expression and function of the bovine endometrium. PLoS One 8(8):1-14 (e69444).

Mulliniks, J.T., Mathis, C.P., Cox, S.H., Petersen, M.K. 2013. Supplementation strategy during late gestation alters steer progeny health in the feedlot without affecting cow performance. Animal Feed Science and Technology 185:126–132.

Mulliniks, J.T., Kemp, M.E., Endecott, R.L., Cox, S.H., Roberts, A.J., Waterman, R.C., Geary, T.W., Scholljegerdes, E.J., Petersen, M.K. 2013. Does ß-hydroxybutyrate concentration influence conception date in young postpartum range beef cows? Journal of Animal Science. 91:2902-2909.

Mulliniks, J.T., Waterman, R.C., Geary, T.W. 2013. Economics of early weaning in Northern Great Plains beef cattle production system. Agricultural Sciences. 4(5):219-223.

Pohler, K.G., Geary, T.W., Johnson, C.L., Atkins, J.A., Jinks, E.M., Busch, D.C., Green, J.A., MacNeil, M.D., Smith, M.F. 2013. Circulating bovine pregnancy associated glycoproteins (bPAGs) are associated with late embryonic/fetal survival but not ovulatory follicle size in suckled beef cows.

Journal of Animal Science 91:4158-4167.

Reeves, J.L., Derner, J.D., Sanderson, M.A., Petersen, M.K., Vermeire, L.T., Hendrickson, J.R., Kronberg, S.L. 2013. Seasonal temperature and recipitation effects on cow-calf production in northern mixed-grass prairie. Livestock Science. 155:355-363.

Reeves, J.L., Derner, J.D., Sanderson, M.A., Hendrickson, J.R., Kronberg, S.L., Petersen, M.K., Vermeire, L.T. 2013. Seasonal weather influences on yearling beef steer production in C3-dominated Northern Great Plains rangeland. Agriculture, Ecosystems and Environment. 183:110-117.

Reeves, J.L., Derner, J.D., Sanderson, M.A., Peterson, M.L., Vermeire, L.T., Hendrickson, J.R., Kronberg, S.L. 2013. Temperature and precipitation affect steer weight gains differentially by stocking rate in northern mixed-grass prairie. Rangeland Ecology and Management. 66(4):438-444.

Rinella, M.J., Masters, R.A., Bellows, S.E. 2013. Effects of growth regulator herbicide on downy brome (Bromus tectorum) seed production. Journal of Invasive Plant Science and Management. 6:60-64.

Russell, M., Vermeire, L.T., Dufek, N.A., Strong, D.J. 2013. Fire, defoliation, and competing species alter Aristida purpurea biomass, tiller, and axillary bud production. Rangeland Ecology and Management 66:290-296.

New Employee

Luke Shurtliff joins the staff at Fort Keogh as the HVAC Mechanic for the main building replacing Rod Stieg.

Assistant's Corner By Brad Eik

Greetings from Fort Keogh! Hope everyone enjoyed the milder weather the back half of January offered us after that blizzardy start!

Just wanted to give a few updates about what's been going on over last summer and this fall out here. After that scary start last April and first part of May we had a very good year here at the Fort. Our alfalfa hay averaged 4.5 tons/ac on just two cuttings. With all the late fall rain, it was hard to get any third cutting put up and sitting on a nice hay cushion I decided we would utilize the third cutting standing and bring cows in closer to home also running weaned heifer calves out on them as opposed to locking them up in the feedlot. That decision really improved the health of those heifers especially the Line 1 females that have shown respiratory troubles in the feedlot. We planted a couple fields down to alfalfa that we nursed with hay barley which averaged over 6 tons/acre and we never needed to run water over it until the hay barley was pulled off. It was a tremendous stand. The grass hay produced very well on one cutting at over 3 ton/ac while the regrowth is being grazed currently for a winter feeding study. Our feed barley averaged over 80 bu/acre and our corn silage was nearly 32 ton/ac.

On the cattle side of things, once Bucking Horse Sale finally got here and the rain started, they did quite well also. The physiology cow herd had its best breed up in history with over 80% timed A I (artificial insemination) bred and a total of over 98% bred on almost 400 cows. With 91 replacement heifers to breed from this herd they did almost as well with 69.23% A I bred and a total breed up of 90%. Our CGC herd which is our composite herd of 50% Red Angus, 25% Charolaise, and 25% Tarentaise on a 45 day breeding season with just bull breeding on nearly 500 cows was nearly 97% as well. The heifers from this bunch of cows were also a success with 88.4% bred in a 30 day season. Our Line 1 herefords continue to challenge us with the cow herd being over 80% between A I and bull service which is better than the last few years but we are aware things still need work. The heifers from the L1 herd were a total wreck at 50% breed up with both A I and bull service. It was a combination of shortened breeding season and a single sire cleanup bull that tested good but went bad at some point through the season. We are already in the process of trying to improve the breed up in this herd as it appears to be the only one we struggle with on a yearly basis.

Our newly acquired black angus cattle for the new heterosis project bred up fairly well as we expected with 15 of 18 coming three year olds bred and 47 out of 51 for 92% breed up on the heifer calves. This fall and early winter I have purchased another 62 head of registered black angus cattle buying 33 heifer calves and 21 five and six year old cows from the Brook's Ranch sale in Bowman, ND and 8 more heifer calves from the Thistledew Angus Ranch sale near Joliet, MT. We have put together a very snappy looking set of black cattle in anticipation of the start of our new study. All the herds are in their winter homes now and we are waiting for calves to start falling in mid March.

Hope everyone is enjoying this fantastic cattle market and having a great winter so far and as always if there is ever anything myself or any of the staff here at Fort Keogh can do to help you and your operation please don't hesitate to contact us! Thanks for your time

Brad Eik
Ranch Manager
Fort Keogh LARRL

USDA Agricultural Research Service

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If you have email and would rather receive this newsletter as a .pdf file, send an email to: Fort.Keogh@ars.usda.gov

Hoofin' it for Hunger Fun Run

Planning is underway with the Montana Farm Bureau Young Ranchers and Montana Food Bank Network for the next Hoofin' it for Hunger Fun Run on October 12, 2014, to be held at the Fort Keogh Livestock and Range Research Laboratory at Miles City, Montana. We had a great race last year with over 30 people running the 1/2 Marathon! We will include a 1/2 Marathon, 10K, 5K, and a 1 & 2 mile fun run again this year. The long runs will be over dirt roads and trails, so preparation is a must! The registration form will be available on our website www.ars.usda.gov/npa/ftkeogh or at http://mfbf.org/.

Save the date!

October 12, 2014