

## TOOLS TO BUILD YOUR COW HERD

November 1, 2017

Rycroft, Alberta

### Speakers:

Susan Markus  
Beef Research Scientist  
Alberta Agriculture and Rural Development, Stettler, Alberta

Barry Yaremco  
Alberta Agriculture and Forestry

Brian Campbell  
Rep for DSM Vitamins Suppliers  
Texas, Houston

Dr. Evan Lowe  
Veterinarian, Fairview Vet Clinic, Fairview, Alberta

**Dr. Susan Markus** spoke on genetics and genomics and the importance of establishing a data base. She researched 397 sequences in 7. For indepth explanation of genomics see:

[http://www1.agric.gov.ab.ca/\\$Department/deptdocs.nsf/all/lr14848/\\$FILE/afac2017-basarab.pdf](http://www1.agric.gov.ab.ca/$Department/deptdocs.nsf/all/lr14848/$FILE/afac2017-basarab.pdf)

Breed composition (Who's our Daddy?) as the sire can affect the herd for 15 – 20 years. Cost of developing heifers can run \$2000.00 and maintaining the herd sire, \$1800.00 per year. DNA testing costs between \$12 and \$20 with an 8 day turnaround. Stressed the importance of record keeping. Hybrid Vigor (cross breeding) increases the life time productivity by 20 – 20 %. Black Angus / Hereford cross gives black baldy calves. The genetics passed on are not necessarily ¼ or ¾ etc. as the cow can pass on more of 1 part than another. The more hybrid vigor or crossbreeding gives better feed efficiency (FE). 10% HV resulted in 2 – 3% increase cattle weight in the test group. To test genetics, pull hair from the tail after calf is 6 months old – with follicle attached. A minimal investment can see returns of up to \$200.00. Fetal programming can affect birth weight, growth rate, reproduction and carcass quality.

**Barry Yaremco** spoke on importance of water quality, castration, creep feeding, ergot, mycotoxins and water damaged hay. An example regarding water quality: 200 cattle died in Saskatchewan due to high sulfate levels (causing polio) and dissolved solids in water that caused scours.

- High sulfate levels (2000 ppm) can cause polio (Polioencephalomalacia) see: [http://webdoc.agsci.colostate.edu/ansc/bb\\_s11.pdf](http://webdoc.agsci.colostate.edu/ansc/bb_s11.pdf).
- Sodium levels over 300 ppm – reduce salt intake
- Iron – 10 ppm – reduced food intake
- Nitrate – 443 ppm – can cause abortions in last 2 months and lack of oxygen

In higher temperatures, more water will be consumed which could result in increased sulfur intake. Fencing dugouts and offering drinking from nose pumps or similar systems could make a ½ lb. per day weight gain versus drinking directly from the dugout and amount to a 50% higher weaning weight.

Regarding castration – 6 month old bull calves require pain medication by law so best to castrate soon after birth.

Calves graze at 50 days – good creep feed would be 1/3 peas (24% protein), 1/3 oats and 1/3 barley.

Ergot in cool damp conditions can cause fever and hoof problems. Ergot toxicity can vary from animal to animal. Feed must not contain more than 1 kernel affected by ergot to 1 lb. of grain. Ergot can form in grasses where there is ample moisture – i.e. road ditches.

Fusarium – a pink to pinkish white head – if too much in the feed it will be refused.

Mycotoxins - Moldy feeds are less palatable and may reduce dry matter intake. This in turn leads to a reduction of nutrient intake, reducing weight gains or milk production. It is measured in ppb. A mycotoxin such as aspergillus is found in moldy feed – will show in silage as black on the top and sides and should be discarded. Store feed in round bales – if outside store single bales on ground that do not touch each other. Storing bales inside is best with 17% less loss than outside.

Body Condition Score (BCS) – evaluates the fat over the short ribs and between them – look for 3.5 BCS in winter and 3 at calving.

An animal 200 lbs. light going into winter will require 1400 lbs. more feed just to stay warm and milk production will be low. See: [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/beef8822](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/beef8822).

Gold performance indicators:

- G – growth
- O – Amount of Open cows
- L – length of calving season
- D – death losses

Test feed by probing 6 – 8 feet into bale taking 20 samples minimum. In non-traditional feed check for trace minerals as well as TDN – copper, magnesium, zinc. Supplement 2 parts calcium and 1 part phosphorous. Nitrate build up in plants occurs after stress – hail, frost. The plant pulls up nitrogen to stay alive and can cause nitrate poisoning – first few days after the stress are the worst – should be okay after 14 days. Ionophores are feed additives used in cattle diets to increase feed efficiency and body weight gain. They are compounds that alter rumen fermentation patterns. Use bovatech-free feed or Rumemsin under watch – fatal to dogs and horses. Can mean a \$4.00 return for each dollar spent. Feed only up to 5 % cereal straw (little if any protein). Pea straw is much better at 7 – 8% protein, Canola straw is 1% better than cereal straw. Manure should look flat (cow pie) as if heaped or pointed means too little protein.

Water hemlock can kill cows and humans because of the yellow sap found in the roots. If plant is pulled up and eaten, death results in the animal in minutes. If checking plants, wear protective clothing as the yellow sap is cyanide and can kill through the skin.

Salt – 1 bag per cow per year.

**Brian Campbell** – There are 2 types of vitamins – water soluble and fat soluble. Fat soluble are A, D and E. D has catalytic functions, E – oxidation protection. Takes very little vitamins – have to be sure all cattle are getting it – blend in feed at the feedmill or buy in feed bags. They play a large role in reproduction – cost of vitamins about 6 - \$7 per year per animal. Shelf life of vitamins is 6 months so should not be stockpiled.

- Lack of A can result in night blindness and reproduction drop.
- D3 is critical for calcium intake – deficiency can cause rickets and milk fever.
- E affects immune functions and prevents white muscle disease.
- Beta Carotene is a precursor to Vitamin A and vital in reproduction and is an antioxidant.
- Biotin and zinc should be used together and thiamin helps prevent polio.

**Dr. Evan Lowe** spoke about pain medication for dehorning and castration. As of December 1, 2018, medications will no longer be available from sources such as UFA, Peavey Mart, Co-ops, Feedmills etc. These will have to be purchased from veterinarians. Question was asked “Does this mean you will have to see my cattle before I can buy medications?” He did not give a clear answer but that they are expecting that this will not be necessary although it would give vets an opportunity to know a person’s herd.

I felt this was an excellent workshop – a day well spent. To follow everything suggested would be very labour and time intensive and may not be feasible for some operations but awareness of this information is important.

Garry Candy

## Building your cow herd.

### Genomic tools with Susan Markus

Genomics (DNA testing) increase EPD (Expected Progeny Differences) accuracy. Standard EPD accuracy is 15-30%, genomic EPD is 28-51% accurate.

Testing is about \$18 per animal, Bulls are the most sensible to test as they impact 20-30 cows/calves each year, and a bull can impact your herd for 10-25 years. If the bull is purebred this would not be cost effective, testing would make more sense on a cow with several female calves in the herd that had known sires (purebred bull). In this way, one test (the cow) would give the producer the genetic make up of the cow and her calves. If these females were more than 70% angus (or any breed) breeding them to a bull of another breed (Simmental for example) would increase their calves Hybrid Vigour (HV).

One cow (\$18 test) and known sires of her 4 female calves (regardless of age) could show up as 65-80% angus (red and black are different in this sense, the producer needs to keep track of which one used) breeding all these females to a Simmental bull would increase the HV. HV of 40-45% (the minimum current recommended rate), has been shown to increase an animals lifetime productivity by 20-30%, increases feed efficiency resulting in a savings of \$18/head over 250 days in feed costs (100 head over winter \$1600 or more), each 10% HV results in 2.3% increase in weaning weight ( 50% HV calf would weigh 11.5% more than a purebred calf) animals with a HV of 60% have twice the longevity of animals with 30% HV.

Tail hairs (with follicle attached) and the \$18 DNA test have shown to return more than \$200 per animal to the producer.

Record keeping is a requirement, at least general records by breeding field, to find out which specific bulls work, give good calves with high breeding rates, not necessarily records by individual animals although they are beneficial as well.

### Nutrition and Animal performance with Brian Campbell

Although cattle need to be in good condition year round, in the first trimester, 30-120 days gestation, is when fetal programming takes place, take good care of your pregnant cattle!

Get the cattle to a Body Condition Score (BCS) of 3 before winter hits. A BCS of 3 or higher means one less bale per cow over winter, \$64 worth of extra feed to go from BCS of 2 to 3 will gain \$395 off her calf at sale time. Feeding well between calving and breeding (3+ BCS at all times) will give a 90% breed back first cycle

Remote water benefits; cows lose .2kg per 30 days on dugout but gain 7.4kg per 30 days on remote waterers, calves will increase from 23.6 kgs gain on dugout, to 33.9 kgs per 30 days gain with remote waterer. Steers on remote waterer, over 71 days gained 20kgs more.

Creep feeding calves that are still on cow, can gain .5-1 lb/day even with good forage. At 44-50 days calves can start creep feed, it also reduces sickness after weaning by 90%.

Creep feed mix up to 1/3 peas and 2/3 cereals, all whole grain, look for screened peas as they can be cheaper.

“Gold” standard

Growth rate of cow, keep cattle BCS at 3 or 4

Open cows, cost money every step of the way (loss of use of bull, feed, don't self replace)

Length of calving, 2 cycles or the cost per calf sky rockets

Death loss, cattle in good shape (3-4 BCS), properly fed (test feed, supply balanced minerals and

Vitamins) live longer, have more calves (which survive and are more productive themselves).

Vitamins for cattle with Brian Campbell

Vitamins only cost \$6-7 /head/year, minerals on top of that.

Beta-carotene is in research, increases 1st cycle conception, is needed, but how high for beef cattle? Shown to be great for colostrum quality, while deficiency results in lower; reproduction and vitamin A in the animal.

Biotin is for hooves but increases milk production.

Selenium is fed at 3mg per day but cattle need 6-7mg and our feed only provides 0.5mg so find a way to double it. This is a challenge due to rules limiting Selenium to 3mg/day.

How to feed through a feed shortage; Feed test, know what to feed first, what mix, what supplements.

Feed test cores, use probe not grab samples, except with silage if sampled every truck load. NIR and “wet chem” test similar but very different on calcium, phosphorus and magnesium use “wet chem” testing.

Use lower quality after weaning early pregnancy, their needs are lower. Use ionophores to increase efficiency by 5-7% costs a \$1 get \$4 in gain

Chelated minerals are expensive and only give to cattle after all other bases are covered, helps with reproductive issues.

Vet oversight of anti microbial use with Evan Lowe

Livestock drug are going to be prescription only by December 1, 2018. No, more UFA drugs.