***NOTES & NEWS***

***FROM***

***COLORADO GENETICS, INC.***

***2014***

As 2014 moves into another Spring season calving is well underway and our thoughts are turning to scheduling the various breeding and embryo transplant programs we offer at CGI. Spring bull sales have been setting new records in many breeds across the country and the beef cattle industry appears to be setting in for a very economically positive year.

 Cattle Fax 2014 predictions include:

 $3.50 to $5.50 corn through the next 2 years

 Heifer retention of about 140,000 head as herds begin rebuilding—some as much as 10%

 Small increase in beef demand

 550 lb. steers to average approximately $185 - $190

 January 1 beef cow inventory was just over 29 million—down about 250,000 from a year ago and all cows and heifers that calved in 2013 created the lowest “calved inventory” since 1941.

Possibly our suggestions and ideas will benefit you in developing a successful breeding program. For more subject details, we suggest you view our past newsletters on our website at [www.coloradogenetics.com](http://www.coloradogenetics.com).

**EMBRYO TRANSFER**

* At CGI we are now working with a new “extended superovulation” protocol that initially

indicates a possible increase in the number of ova that mature at ovulation and therefore may somewhat increase embryo production per donor collected. More work in progress.

* Our foreign export market is expanding—let us know if we can assist with your program.
* We continue to increase our use of re-synchronization of recipients which permits the use of a group of recips twice in 28-30 days—results are providing more ET pregnancies prior to clean-up bull breeding.
* Again this year we are attempting to locate recipient herds for a “weaned calf” program. Embryos to be transferred this year and the producer buys the calves back at weaning in 2015.

Notes from the recent American Embryo Transfer Association (AETA) meeting:

* In a group of donor cows, data indicates 24% of donors will not produce an embryo but 30% of the cows in the group will produce 70% of the viable embryos.
* Number of follicles (with eggs) present in the ovaries of a donor at time of superovulation affects the embryo production. The growing follicles may vary from 5 to 60 and it appears that more than 30 tends to provide the best results. These follicle numbers are highly repeatable with individuals. Future donor selection may be enhanced by the use of a new and developing test to predict follicle numbers prior to superovulation in order to identify the donors that produce the most potential embryos.
* Using current recipient synchrony protocols, there is no difference in pregnancy rate between recips seen in heat vs. those not seen in heat when GNRH is given the morning of the expected heat.

**ESTRUS SYNCHRONIZATION**

* “Synch” programs to control estrus in cattle for fixed time AI (TAI) continue to gain popularity as more data shows the economic value of using the technology. When coupled with superior genetics provided by AI, the improving conception rates, the reproductive advantage of early bred cows from year to year, and the increased value of older and more uniform calves, the returns vs. costs of well-managed TAI programs are easily recognized in current market conditions.
* Brief update on protocols:
* Commonly used for beef cows include the 7 day Co-synch + CIDR and the 5 day Co-synch + CIDR. The 5 day may show a slight increase in preg rate but requires one more time through the chute.
* In heifers, producers are using the 5 day or 7 day Co-synch + CIDR program but we are seeing the 14 day CIDR programs becoming more popular as it replaces the MGA protocol with better pregnancy results.
* Recent work done my Markwood and Whittier at Colorado State University and by Thomas and Patterson at the University of Missouri , indicates an increase in preg rate (between 5 & 15%) if the cows/heifers not showing heat at the TAI but were instead A.I.’d 18-20 hours after the GnRH injection rather than at the time of GnRH. Protocols used were the 5 day CIDR, 7 day CIDR and 14 day CIDR.

Note: At CGI we have slightly “tweaked” the 5 day, 7 day and 14 day programs to be more user friendly with equal results. Contact us for a discussion.

* At CGI we have experienced only one breeding with the PG 6 day CIDR + TAI program (results this spring) but at least a limited amount of data indicates a possible increase of 5-10% in preg rate.
* “Quick Math” with natural service vs. A.I. according to ABS:

 - $4,000 bull with 25 cows for three years. Cost per calf of approximately $89

 - 7 day co-synch + CIDR: Cost of calf at 50% preg rate is about $92 and 60% preg is around $77

 - 14 day CIDR-PG + TAI: 50% preg equals $88 per calf and 60% is about $73.50/calf.

* TAI vs. heat detection breeding has been explained as follows:

 - 100 cows bred at TAI x 55% conception = 55 calves

 - 100 cows x 85% detected in heat x 65% conception = 55 calves

* A University of Minnesota study involving 1200 beef cows indicates a $49.14 economic advantage per cow exposed to estrous synch & TAI.
* Remember to properly identify the hormone injections in the protocol and use them at the **correct time**!! Three times last year we consulted with producers to remedy situations that involved improper injection timing. Also, give all IM injections in the neck vs. the top of the hip.

**REPRODUCTIVE MANAGEMENT**

* Kansas State University recently reported that among North American beef heifers, approximately one-half of those aged 11½ to 14 months of age have not reached puberty and are not cycling for breeding. A Missouri study indicates as many as 35% may still be pre-pubertal at 15 months. A note to remember when scheduling AI programs.
* An Ohio State University study has again shown that heifers that are developed and AI’d in a feedlot environment and then moved to early pastures with lower quality feed (lush green grass, change in protein/energy content, mineral change, etc.) will experience a decreased preg rate when compared to heifers remaining on an equal plane of nutrition or are supplemented properly on the pasture. This effect may be due to nutritionally induced alterations in uterine/oviduct functions that are needed to support the developing embryo and maintenance of pregnancy.

**MINERALS**

* Chelated organic minerals are the most bioavailable to cattle as compared to inorganic forms.
* Milk does not provide adequate supplies of copper, iron, zinc and selenium to meet early requirements of the calf. Proper mineral nutrition during pregnancy stores these minerals in the liver of the fetus.
* MultiMin 90 is a SQ injectable form of the trace minerals zinc (Zn), manganese (Mn), copper (Cu), and selenium (Se). Recent studies indicate the following advantages of using MultiMin 90 in beef production management:
* An increase in fixed time AI pregnancy rates
* Sperm quality/production may improve if given 90 days prior to semen collection/breeding. (A study involving 800 young beef bulls is presently being evaluated).
* An Iowa State University study indicates that there tends to be an increase in marbling score and repartitioning of fat in the carcass of feeder cattle.
* Native range grasses may be marginal in trace minerals.
* An increase in embryo quality and pregnancy rates when used in donors and recipients.
* Will develop and maintain the immune response when vaccinations are given for better disease protection—i.e., birth or branding and at preconditioning for calves.
* A Colorado feedlot recently divided 400 calves into 2 groups. Group 1 received MultiMin and Group 2 did not. Group 1 had a 3% treatment pull (group 2 was 12-15%) and had about a $37.00 decrease in feed costs from 450 to 800lbs.
* Awaiting new information concerning the importance of trace minerals for oocyte (egg) development in the ovary and early embryonic survival (first 1-3 days) in the oviduct of cattle. Will keep updated.
* The injectable product **is not** a replacement for a well-balanced mineral program but rather should be used as a supplement.

**BODY CONDITION SCORE (BCS)**

* The difference between one score and the next (1 to 9) is considered to be approximately 100 lbs. of body weight.
* Producers often visually miss cow weights by 200 – 300 lbs. and BCS by 2 full scores. Handouts and apps are available.
* Calves receive more colostrum and antibodies as the cow’s BCS goes up to 5.5 or 6.0.
* TAI results have shown approximately a 30% pregnancy rate in cows with a BCS less than 4.5 as compared to approximate 6.0 BCS with a 70% preg rate.
* A recent article on theriogenology reports highly elevated or drastically decreased amounts of maternal body fat slowed down the development and negatively affected the quality of preimplantation embryos.
* Remember, very thin and overly fat donors are not reliable embryo producers!!

**BVD PI**

* At CGI, we believe BVD PI testing of the herd and any herd additions, is becoming more important in attempts to control the reproductive consequences of the disease. An inexpensive ear-notch test is available.
* BVD PI positive heifers have been shown to have alterations that directly affect the follicular population of the ovaries.

**VACCINATIONS**

* Prebreeding vaccinations need to be given **30 days or more prior to breeding.**
* Visit with your veterinarian about using MLV reproductive vaccines in pregnant cows—always be “on-label”.
* Keep refrigerator temperature at 35 to 45 degrees F (refrigerator thermometer) & discard all unused vaccines at the end of the vaccinating day.
* Clean syringes with hot water only – no disinfectants.
* Record vaccine product lot numbers and vaccination dates.
* Reminder—a vitamin A, D & E injection at birth is inexpensive as an aid to disease resistance.
* A South Dakota State University trial has shown a negative effect on pregnancy success when naive heifers are vaccinated with a MLV vaccine at the start of a fixed time AI (TAI) protocol.

**ODDS & ENDS**

* Often first calf heifers require an increased energy ration pre and post calving in order to produce a fertilizable ova at the time of the intended breeding program.
* Remember to place semen for AI into the body of the uterus—not the cervix!!
* Do not use ear implants on heifer calves intended to be bred as it can definitely decrease pregnancies.
* Essential fatty acids (EFA’s) are called “good fats” and are polyunsaturated and monounsaturated fats found in beef marbling and contain healthy forms of EFA’s known as omega 3 and omega 6.
* The PCR test for Trichomoniasis (“Trich”) in bulls is extremely accurate and only requires one sample vs. three for a microscopic test.
* High quality beef supply in the USA is still inadequate by some reports—need more marbling with high choice and prime products.
* Heifers that calve early in the calving season with their first calf may have increased longevity in the hard.
* Tom Brink recently stated “four game-changing dynamics for beef producers in 2014”:
1. Higher cow-calf profits
2. Excess feeding capacity
3. Success with TAI programs
4. Stronger genetics boosting industry output