

Agriculture CENTRAL KANSAS EXTENSION DISTRICT NEWS

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February 2023

Upcoming Events

February

- 20 Presidents Day -Minneapolis Office Closed
- 22 Soybean School

March

- 3 Ottawa Co. Women in Ag
- 5 Cattleman's Day



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The Importance of Colostrum: Do We Really Need to Talk About This Again?

By Gregg Hanzlicek, DVM,



At the beginning of every calving season, we find ourselves discussing the importance of colostrum (first milk) in cow-calf herds. We discuss this topic so often; it makes one wonder if we shouldn't move on to other topics? The short answer to that question is **NO** because of the great importance of this single dietary ingredient to calf health and growth.

The bovine species is special and almost perfect in every way except the design of the placenta. Unfortunately, because of the way the placenta is structured, the dam cannot pass any of her antibodies through the placenta to the calf. Therefore, the calf is completely devoid of any antibody protection against infections at the time of birth.

To overcome the inability to pass antibodies to the calf before birth, the bovine dam secretes large amounts of antibodies into her colostrum. Colostrum contains ten times more IgG1 (one of the major antibodies) compared to milk produced during the rest of lactation. If the calf rises and suckles within the first few hours after birth, it will absorb the antibodies contained in the colostrum. Protection will be immediate upon absorption. If the calf does not nurse and absorb these antibodies, then a very important part of their ability to fight infections will be absent for several weeks.

Several factors are involved to assure colostrum antibody protection. 1) The length of time from birth to consuming colostrum is very important. Immediately after birth, the calf's digestive system begins to lose its ability to absorb colostrum antibodies. At six hours after birth, only about 60% of the colostrum antibodies consumed will be absorbed into the calf's system and by 24 hours virtually none will be absorbed. It is very important that each calf receive colostrum as soon as possible after birth to maximize antibody absorption.

2) Colostrum quantity is also important. The level of antibody protection provided by colostrum is dependent on the total amount of antibodies consumed by the calf. This amount is dependent on the amount of colostrum that is produced and consumed. Colostrum quantity is largely dependent on dam age and her pre-calving nutritional status.

3) Colostrum quality is the third component of a successful colostrum management program. The term quality means the number of diseases that are represented by the colostrum antibodies. The antibodies are disease specific. For example, antibodies that target *E. coli* infections will not be the same antibodies that target Rotavirus infections. The range of disease specific antibodies produced by the dam is dependent on the variety of diseases she has been exposed to in her lifetime and the number of diseases she has been vaccinated against. A well-designed vaccination program can greatly improve colostrum quality.

The importance of colostrum in neonatal calves goes beyond antibody protection. Compared to milk, colostrum concentration of fat and protein are two to four times greater. The concentration of the major vitamins, including A, B, D, and E is also much higher in colostrum compared to milk. In addition to these nutrients, colostrum contains several enzymes that possess antimicrobial properties. These nutrients and enzymes are extremely important to the calf's ability to survive and grow during early life.

For most herds there will be times when a calf is unable to rise and nurse as quickly as needed. Typical cases include a calf that has experienced dystocia and is tired or hurt or is born to a dam with poor mothering ability or born to a dam that doesn't produce enough colostrum. In these cases what are the best ways to manage the colostrum program?

In the case where the calf is hurt or the dam's mothering ability is lacking, hand-milking the

dam and collecting the colostrum is the best intervention. This should only be attempted if it can be accomplished in a facility that provides safety to both human and dam. Never use dairy colostrum or colostrum from neighboring cow-calf operations. There are several diseases, including Johne's disease and bovine leukosis, that may not be on your operation and can be passed to the calf through the colostrum.

The second-best intervention would be to administer a commercial powdered-colostrum <u>replacer</u>. Do not use colostrum <u>supplements</u> as they do not contain the appropriate concentration of antibodies for protection. It is also best to choose a colostrum replacer made from bovine colostrum, not bovine plasma. Research has shown that absorption is higher in colostrumbased replacers. It is also important that electrolytes or probiotics NOT be mixed with colostrum or colostrum replacers. Research is clear that these products interfere with colostrum/replacer digestion and absorption.

Does feeding method impact colostrum absorption? It is always best to use a nipple bottle. When the calf nurses, the colostrum will by-pass the rumen and will arrive in the intestinal area where absorption occurs much faster. Research indicates that by-passing the rumen is more important if feeding 1 quart or less of colostrum/ replacer. An 80-pound calf needs about 2 quarts of colostrum and most commercial replacers are formulated to be fed in 2-quart amounts to all sizes of calves. In these cases, using an esophageal feeder is certainly acceptable.

Colostrum is one of the most important components in any calf-health program not only because of the antibodies but also because of the many other nutritional products that it provides. Colostrum quantity and quality, in addition to timing from birth to consumption, are important aspects of any colostrum management program.



K-STATE Research and Extension

Kansas Soybean School

2023

February 22, 2023 (8:30 am - 2:30 pm, with a tour to the factory)



Central Location, Salina Great Plains Mfg. Inc. 1525 E North Street Salina, KS.

Register at: https://bit.ly/soyschool



Or by calling at K-State Research and Extension- Central Kansas District, 785-309-5850 Kansas Soybean Office – 877-577-6923

One-hour walking tour to the Great Plains factory will be available following the conclusion of the school. Please dress for the weather and wear closed-toed shoes (required). All other safety gear will be provided.



K-State Research and Extension is committed to providing equal opportunity for participation in all programs, services and activities. Program information may be available in languages other than English. Reasonable accommodations for persons with disabilities, including alternative means for communication (e.g., Braille, large print, audiotape, and American Sign Language) may be requested by contacting the event contact Jay Wisbey two weeks prior to the start of the event or February 8, 2023, at (785)309-5850 or jwisbey@ksu.edu. Requests received after this date will be honored when it is feasible to do so. Language access services, such as interpretation or translation of vital information will be provided free of charge to limited English-proficient individuals upon request.

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Management Considerations for March 2023

By Jason M. Warner, Ph.D., Extension Cow-Calf Specialist

Cow Herd Management

- Start post-calving nutrition programs for spring-calving females.
 - Begin lactation rations once first calving cycle is complete.
 - Make sure thin (BCS \leq 4.0) females are on an increasing plane of nutrition going into breeding.
- Pregnancy check and wean fall-calving cows if not already done.
- Evaluate your mineral program for the coming spring and summer seasons.
 - What was your average consumption last year?
 - Do you need to make changes this year to achieve targeted consumption?
- Consider magnesium supplementation levels, particularly for lactating cows grazing wheat, rye, or triticale in the spring.
- If synchronizing females for breeding, schedule your protocols now well in advance of the breeding season and mark your calendars.
 - Use the estrus synchronization planner available to you.
 - Inventory your A.I. supplies and check your semen tanks.
- Evaluate herd bulls for BCS and adjust as needed prior to breeding.
 - Bulls need to be in a BCS \geq 5.0 prior to the next season of use.
 - Schedule breeding soundness examinations with your veterinarian.

Calf Management

- Market your fall-born calves if not already done.
- Schedule your spring calf working activities and visit with your veterinarian to discuss your calf health protocols.
- Monitor growth and pubertal development of replacement heifers.
 - Heifers should be having active estrous cycles prior to breeding.

General Management

- Make sure you complete your spring calving records!
 - Don't forget late-calving females as you focus on other spring projects.
- Rethink your turn-out dates if pastures were stressed from drought last year.
 - Plan/adjust your feeding dates accordingly.
- Take inventory of any feed/forage that will be left over from winter.
- Cover piles or close bags if silage is left over and won't be fed until fall.
- Clean up any soiled bedding or unused/wasted feed to reduce the breeding and development of stable flies as the weather warms up.
- Finish pasture management projects started last year:
 - Repair or replace fences as needed.
 - Burn if conditions allow, cut and pile trees, particularly Cedar trees!
 - Clean and repair tanks and equipment as needed so watering sources are working properly when cattle are turned out to pasture.
- If making bull selection decisions:
 - Review your herd performance relative to your marketing and genetic goals.
 - Study EPDs impacting your marketing and genetic goals and do your homework well before sale day.



Podcast Pick of the Month

I Author: Beef Cattle Institute at KSU

Topic: Colostrum, Drought Management/Planning, Buying vs. Raising Bulls

Check out this months Podcast Pick of the Month. Listen to Dr. Brad White, Dr. Phillip Lancaster, Dr. Dustin Pendell, Dr. Brian Lubbers, Dr. Bob Larson, and Matt Perrier discuss importance of Colostrum and supplementation, Drought Management/Planning, and Buying vs. Raising Bulls.

All you have to do is pull up your camera on your smart phone, point it towards the QR code, and click the link. You may also visit https:// www.centralkansas.k-state.edu/livestock/index.html to find the episode. podcast!



Ottawa Co. Women In Ag "Springing into Action"

Come and join us for the first Ottawa Co. Women In Ag meeting & social! Spend the evening with us as we grab a glass of wine, make new friends, chat about the new organization, create a community of women in agriculture, and create a mini herb & daisy garden for you to take home!



Saturday, March 4

4:00 pm – Social & Snacks 4:30 pm – Meeting & Activities

\$10 a person

Mill Street Inn 419 W 2nd St. Minneapolis, KS



Scan this code or contact Justine Henderson (text/call) at 530-410-2476 to let us know you'll be there!

Safe Tractor & Machinery Operation Training

This program is a collaboration with K-State Research and Extension Districts: Post Rock, Midway, Cottonwood, CKD, and River Valley.

The National Safe Tractor and Machinery Operation Program (NSTMOP) is designed for 14- and 15-yearolds seeking employment in production agriculture.

Core content areas include:

- Safety basics
- Agricultural hazards
- Tractors
- Connecting and using implements
- Materials handling

Students are certified after successfully passing a 50question test at the training and doing both an operating skills test and a driving test administered by the employer.

2023 Course Dates <u>& Locations</u>

April 22nd – Russell, KS Russell County 4-H Building

April 29th – Beloit, KS Carrico Implement

May 25th – Salina, KS Great Plains Manufacturing

SIGN UP: Visit <u>https://kstate.qualtrics.com/jfe/form/SV_dbgroLW4gPx947c</u>, scan QR code, or call an agent listed below!

MANUAL COST: \$15 - Pick up at your local Extension Office

BRING: Your course manual and enrollment form. Pay and pick up your course manual at your local Extension Office. Please pick up your manual PRIOR to the course.

Contacts:

<u>Russell, KS</u> - Craig Dinkel: <u>cadinkel@ksu.edu</u> or 785-472-4442 Alicia Boor: <u>aboor@ksu.edu</u> or 620-793-1910

<u>Beloit, KS</u> - Blaire Todd: <u>blairet@ksu.edu</u> or 785-738-3597 Kaitlyn Hildebrand: <u>khildebrand@ksu.edu</u> or 785-243-8185

Salina, KS – Jay Wisbey: jwisbey@ksu.edu or 785-309-5850 Justine Henderson: jwh04@ksu.edu or 785-392-2147 Scan to register!





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K-STATE Research and Extension

Central Kansas District

Central Kansas Extension District *Minneapolis Office* 307 N. Concord, Suite 190 Minneapolis, KS 67467-2129

Address Service Requested

The enclosed material is for your information. If we can be of further assistance, feel free to call or drop by the Extension Office.

Sincerely,

Jay Wisbey District Extension Agent Crop Production jwisbey@ksu.edu

Salina Office

K-State Polytechnic 2218 Scanlan Ave. Salina, KS 67401-8196 785-309-5850 Fax: 785-309-5851

Justine Hendeum

Justine Henderson District Extension Agent Livestock Production jwh04@ksu.edu

Minneapolis Office

307 N. Concord, Suite 190 Minneapolis, KS 67467 785-392-2147 Fax: 785-392-3605