FRESH START

A manual to help ensure a FRESH START for the cow and her newborn calf in your maternity pen.

Alta

Create Value ▲ Build Trust ▲ Deliver Results

FRESH START

Ensuring a FRESH START for both cow and calf can make or break their performance and longevity in the herd. Alta has developed this FRESH START Manual to provide recommendations for cow and calf management around calving.

The Alta FRESH START Manual is not intended to replace or change current protocols developed by dairy producers and their veterinarians. Our end goal is to instruct and deliver an optimum service based on successful dairy industry programs and research data. Any discrepancy in this base protocol should be discussed with your Alta team advisor and evaluated to benefit both the cow and calf.

Table of Contents

A FRESH START

Why does it matter for the cow?

For a cow to perform her best, she needs to get off to the best possible start after calving. Proper maternity management helps ensure that new fresh cow will be healthier, more productive, and more efficient in her lactation ahead.

Fresh cow health issues cost money

HYPOCALCEMIA $246	RETAINED PLACENTA $313	MASTITIS $426
KETOSIS $181	LEFT DISPLACED ABOMASUM $640	METRITIS $263

Cost per case accounts for veterinary and treatment cost, farm labor, lost milk production, discarded milk, culling cost, extended days open, and death.

D. Liang, D., Arnold, L.M., Stowe, C.J., Harmon, R. J., Bewley, J. M. (2017). Estimating US dairy clinical disease costs with a stochastic simulation model. Journal of Dairy Science, 100 (2), 1472-1486.

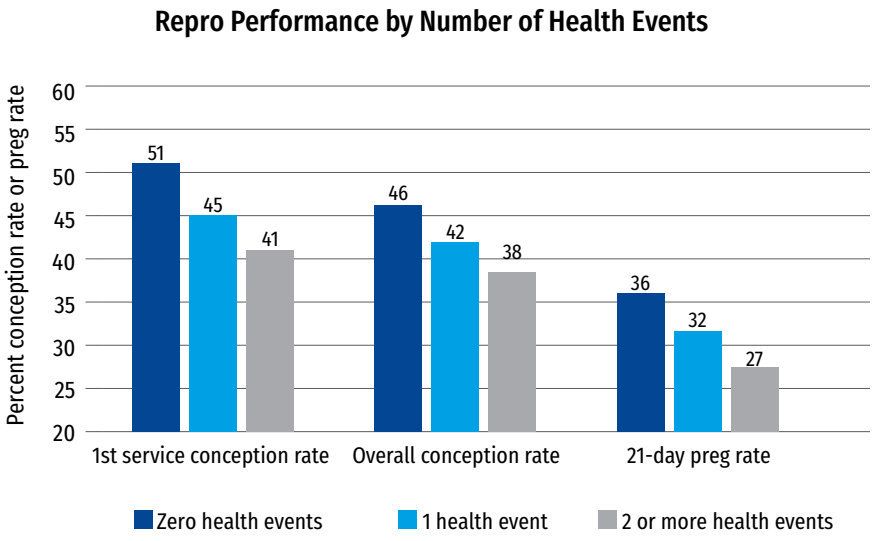
Fresh cow health issues also affect future repro performance

We know that a cow's reproductive efficiency is impacted by her health and welfare in the transition and fresh cow periods. We wanted to know to what extent. So, we did our research.

We dug into the herd health and reproduction records on 10,000 cows from three different dairies throughout the US. These herds operate at a very high level of management and keep accurately detailed records on all health events in their herds.

We sorted the cows from the three dairies into three different groups. We assigned each cow to a group based on the number of detrimental health event setbacks she had – zero, one, two, or more. By detrimental health events, we mean the ones that cost time, labor, and money – including fresh cow events like milk fever, retained placenta, metritis, DA, ketosis, and also mastitis.

We then analyzed first service conception rate, overall conception rate, and 21-day pregnancy rate per group. This chart illustrates what we found.

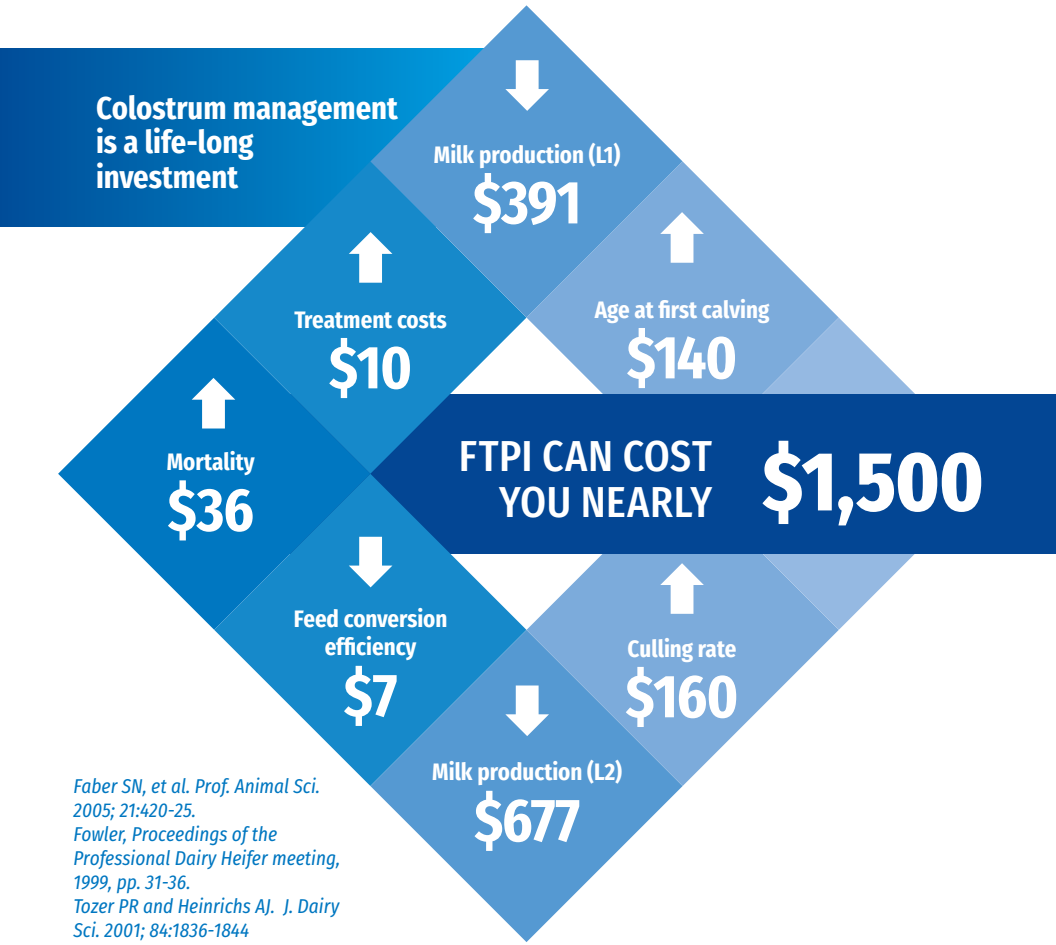


A FRESH START

Why does it matter for the calf?

A calf's true future potential depends on getting the best possible start at birth. Calves born in a clean environment that are handled properly during and after birth have the best chance at becoming the most productive and efficient members of your future herd. Part of that is colostrum management.

When newborn calves experience poor colostrum management, they are at greater risk of having failed transfer of passive immunity (FTPI). FTPI is costly and can impact both short and long term performance.



Faber SN, et al. Prof. Animal Sci. 2005; 21:420-25.
Fowler, Proceedings of the Professional Dairy Heifer meeting, 1999, pp. 31-36.
Tozer PR and Heinrichs AJ. J. Dairy Sci. 2001; 84:1836-1844

CALVING AREA MANAGEMENT

Cleanliness is a key factor for avoiding contamination in all management areas that calves and cows encounter.

Ensure that the environment and all supplies used in maternity procedures and colostrum collection are sanitary. The following points should be routinely completed;

- Clean all equipment used for assisted parturition, feeding, carrying, or administering solutions.
- Clean and sanitize bedding areas, chute, and maternity room.
- Clean and sanitize all colostrum collection and feeding equipment.
- Routinely replace bedding and remove feces and wet areas in calving pen. Always provide enough bedding.

  Tip: It should be dry and clean when you kneel on the bedding.
- Wear clean coveralls and boots, and always keep your hands clean or protected with gloves.

STOCKING DENSITY is a key factor to help reduce calving and transition issues.

- Ensure you are stocking the dry cow and calving pens around the maximum number of calvings per week, rather than just the average.

CALVING PROCEDURES

Identify normal labor process and ensure protocols are in place to intervene when necessary

The labor process is a sequential and continuous event divided into three different stages – from the start of contractions to the expulsion of the placenta. Identifying and understanding each of the stages is essential to determine whether intervention is needed. Check your close-up group for signs of calving every 30-60 minutes.

STAGE 1

2-6 HOURS

- Cow shows signs of discomfort and becomes restless due to contractions. Tail may be raised, increased vocalization, and nest-building-like behavior is common.
- Isolation from the group and signs such as mucous and relaxed ligaments are evident.
- This stage ends when the fetal membranes rupture.

STAGE 2

1-2 HOURS FOR COWS AND 2-4 HOURS FOR HEIFERS

- This stage begins when the fetal membranes rupture.
- Cow may lie down and an increase of contractions and abdominal presses may be observed.
- It is important to observe for any signs that the cow needs assistance.
- Stage 2 is complete when the calf is born.

STAGE 3

8-12 HOURS

- The placenta detaches after birth and should be expelled within 12 hours.
- In some cases, this event can last 8-12 hours. After 12 hours, if the placenta hasn't been expelled, it is considered retained.

Calf Delivery and Presentation

If labor is not progressing normally or signs of issues arise, intervention may be required.

SIGNS OF DYSTOCIA

Stage 1

- More than 4 hours with no progression
  - contractions and no observation of water sac
- Signs of milk fever (see page 20)
- Water sac is visible for over 2 hours and no progression is observed or cow has stopped pushing

Stage 2

- No progression for over 30-45 minutes
- Signs of fatigue - swollen tongue in the calf, yellow staining of the fetus and bleeding from the rectum of the cow
- Calf is suspected to be in an abnormal presentation

Stage 3

- Fetal membranes present for over 12 hours in the cow

Maternal Examination

If a calving issue is suspected, a vaginal examination may be required to identify the cause and how to intervene. Hygiene is critical during examination to avoid introducing bacteria into the cow's uterine tract that could lead to infection.

HOW TO PERFORM A VAGINAL EXAMINATION

- Properly restrain the cow in a clean environment.
- Wash hands and arms with soap and water.
- Scrub and deeply clean any dirt and fecal debris in the vulva, anus, and tail areas with a mixture of water and antiseptic solution (e.g., Betadine solution), prepared in a clean bucket.
- Use new, disposable, palpation gloves.
- Dip your sleeved arm into the antiseptic solution and apply sterile lubricant to glove.
- Gently insert your sterile, gloved hand into the clean vulva to identify cow and calf condition.
- When assessing the calf's presentation, determine its orientation in relation to the cow's spine and find three things belonging to the same calf: two front feet with its head in between or two rear feet with its tail in between.

THREE THINGS TO CONSIDER BEFORE INTERVENING

1. **PRESENTATION** - If the calf is in forward or backward position, both are normal
2. **POSITION** - Refers to the calf's position in relation to the cow
3. **POSTURE** - How the calf's head and limbs are in relation to the body

Calf Presentation

NORMAL PRESENTATION

COMMON CAUSES OF CALVING DIFFICULTY

POSTERIOR PRESENTATION

COMMON CAUSES OF CALVING DIFFICULTY

HEAD BACK

BREECH

ANTERIOR PRESENTATION WITH A POSTURE ABNORMALITY

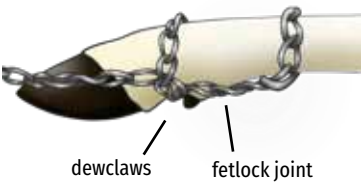
(4 limbs presented)

HOW TO ASSIST WITH PARTURITION

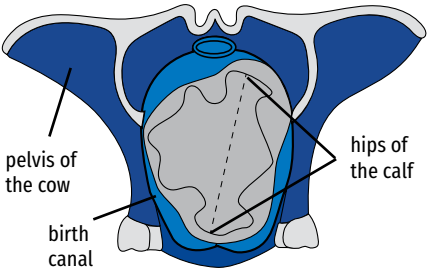
A maternal examination should clarify and indicate the condition of both the cow and calf. If during vaginal palpation, the cervix is not sufficiently dilated for the calf to pass through, and it is past the time considered for normal delivery, contact the manager to determine if veterinarian intervention is needed.

If assistance is needed because of non-normal calf presentation, position, or posture, follow these steps to help safely deliver the calf:

- Properly clean and prepare cow for intervention as previously described in 'How to perform a vaginal exam'.
- Place all materials needed to assist in the calf extraction into a bucket with antiseptic solution.
- Apply sterile lubricant in the entire birth canal and calf surface (limbs, head, etc.)
- Manipulate and properly position the calf in the birth canal.
- Correctly place OB chains, assuring two points of contact on the limbs as depicted in the picture below:



- Start to apply pressure, working in synchrony with the cows contractions. As the animal stops pushing, the manual extraction should also stop.
- If additional force is necessary, make use of a calf jack extractor. The mechanical extractor must also be used by synchronizing with the cow's contractions.



- As the pelvis of the calf approaches the birth canal, rotate the calf to match the largest clearance for the calf to pass through as depicted in this image.
- The direction you pull the calf must be applied horizontally until the chest region of the calf is exposed. At this time, the angle of the extraction shall be directed towards the ground to facilitate the labor.
- If using manual extraction to deliver a calf, be fully aware to minimize injuries when hitting the ground, extractor, or other tools in the calving area.

After the calving process we encourage vaginal palpation to identify whether there is another calf. The procedure must be brief and non-stressful.

- Properly restrain the cow to ensure safety during the procedure.
- Use new, disposable palpation gloves with an adequate amount of lubricant.
- Gently insert and manipulate hands to avoid damage.

MILK FEVER

THREE REASONS **TO CHOOSE CAL24**

IT'S SIMPLE.

SAVE TIME AND LABOR

give two boluses right after calving

No need for a second bolus 12 hours later

IT'S UNIQUE.

TWO FORMS OF READILY AVAILABLE CALCIUM

plus magnesium & vitamin D

allow for optimal calcium absorption

IT'S COMPLETE.

PROVIDES IMMEDIATE *AND* SUSTAINED RELEASE CALCIUM

CALCIUM CHLORIDE acts rapidly for immediate absorption in the rumen

CALMIN regulates absorption over time as a combination of highly-absorbable calcium & magnesium

VITAMIN D helps facilitate active, sustained calcium transfer beyond the rumen

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RISKS OF SUBCLINICAL HYPOCALCEMIA

IT'S COSTLY.

ONE CASE of SUBCLINICAL HYPOCALCEMIA can cost you **$125**

SUBCLINICAL HYPOCALCEMIA can cost you **4 TIMES MORE** than the clinical cases in your herd

IT'S PREVALENT.

50% OF YOUR MATURE COWS likely have SUBCLINICAL HYPOCALCEMIA at calving

IT CAUSES OTHER ISSUES.

SUBCLINICAL HYPOCALCEMIA CAN LEAD TO:

- Mastitis
- Retained placenta
- Displaced abomasum
- Reproductive challenges
- Decreased milk production

SOLUTION to SUBCLINICAL HYPOCALCEMIA

Give **TWO BOLUSES OF CAL24 TO YOUR MATURE COWS** after they calve to prevent the risks of SUBCLINICAL HYPOCALCEMIA

Milk Fever Assessment and Intervention *within 48 hours after birth*

COMMON SIGNS OF CLINICAL HYPOCALCEMIA **ARE:**

- Inability to stand
- Weakness, muscle trembling and quivering
- Head is turned to the flank or extended
- Dry nose
- Cold ears
- Uncoordinated when walking

IF AFTER OBSERVATION, A COW SHOWS SYMPTOMS OF CLINICAL HYPOCALCEMIA:

- Administer an IV calcium solution
- Once cow is standing, give one dose (2 boluses) of RumiLife CAL24

HOW TO ADMINISTER IV SOLUTIONS TO A DOWN COW WITH MILK FEVER

The protocol for intervention on clinical cases of hypocalcemia must be followed according to what is established by the dairy and your veterinarian.

- Properly restrain the cow and use a halter to immobilize her head and neck.
- Find the jugular vein. Clean the local area for needle insertion to avoid the risk of dirt or debris entering the puncture site and vein.
- Insert needle at a 45-degree angle with the tip facing the heart, passing the skin into the vein.
- Blood must come out as sign of correct placement.
- Before attaching the tube to the needle, remove air by letting liquid flow into it.
- Place the bottle of calcium solution above the puncture site line to allow for continual flow.
- If the flow from the bottle stops or slows, or if there are fewer bubbles in the bottle, it may indicate the needle is not in the vein. Another common sign of a needle out of the vein is swelling in the puncture region, which indicates liquid under the skin.
- If the needle is out of the vein, stop the flow, relocate the needle, and continue the administration.

Milk Fever Assessment and Intervention
within 48 hours after birth

COMMON SIGNS OF SUB-CLINICAL HYPOCALCEMIA ARE:

- There are no obvious signs, making it difficult to detect.
- If cow is in lactaion 2 or greater, give one dose (two boluses) of RumiLife CAL24 to help stabilize calcium levels and prevent it from advancing to a clinical case or other fresh cow problems.

  This has demonstrated excellent efficacy in the prevention of clinical hypocalcemia and the resulting improvement in transition cow performance.

HOW TO ADMINISTER CAL24 CALCIUM BOLUSES

- Properly restrain the cow to ensure safety during the procedure.
- Place one/two calcium boluses in the single/double dose applicator.
- Position yourself sideways to cow's head and gently open cow's mouth to place the applicator.
- Gently introduce the applicator deeply into the mouth along the top left side of the throat and deposit the bolus.
- If using a single bolus applicator, repeat to administer the second bolus.
- If using a double bolus gun, administer the first bolus. Keep the applicator in place while rotating the plunger to administer the second bolus.

It is critical to accurately record at minimum, the following information about a cow's parturition data sheet: the cow's number, pen, treatments, calving ease, and observations.

**Additional procedures may be needed based on individual dairy protocols (injections, vaccines, oral solution administration, etc.).*

PROCESSING THE CALF

Ensuring proper management in the first few hours of a calf's life is essential to set them up for success and help minimize health and performance issues.

Follow these proper management protocols during the first hour of life:

- Remove the calf quickly from calving area to avoid injury and contamination.
- Move the calf to an area that has been properly bedded, is clean, well-ventilated, and appropriate for various weather conditions (rain, snow, and extreme temperatures).
  - Dry calf off with clean, dry towels by wiping back and forth to fluff up the hair coat. This can help reduce the calf getting chilled, while allowing them to thermoregulate better.
  - If using a warming box/room, ensure that it is regularly cleaned and disinfected.
  - Place a jacket on the calf once it is completely dry, depending on the weather.
- Immediately identify and tag the calf following the dairy's protocol.

**In association with previously described FRESH START Protocols, some dairies may have adopted a vaccination schedule and additional procedures. Please contact manager and supervisor for proper management and procedures.*

Navel Dipping

The navel cord is an entry way for bacteria to get into the calf and lead to navel and joint infections. To help avoid this, dip the navel with a 7% tincture iodine or 0.5% chlorhexidine solution.

Ensure full saturation of the navel cord occurs, using a spray bottle or a disposable paper cup to apply solution. Teat dip cups commonly harbor bacteria as they are not routinely cleaned between calves.

COLOSTRUM MANAGEMENT

Harvesting Colostrum

Bacteria contamination of colostrum negatively impacts colostrum absorption and can lead to disease in calves in the first few weeks of life. Also, colostrum can be the route of transmission of many diseases, so if the cow is positive for a transmittable disease, discard colostrum.

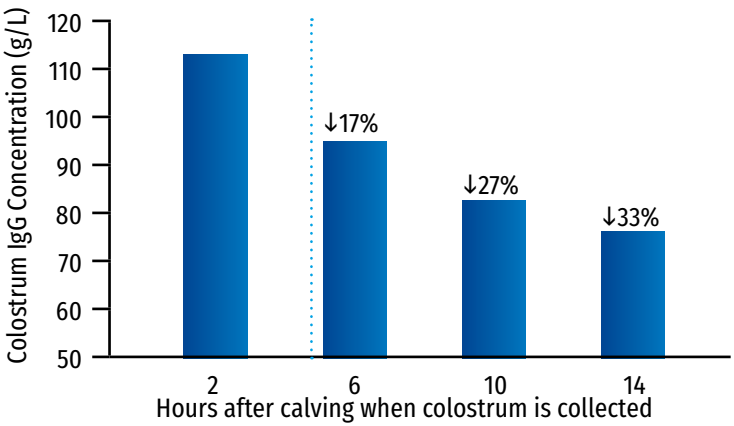
UDDER PREP AND DISINFECTION OF EQUIPMENT

- Start with clean teats and a clean bucket (having a designated colostrum bucket is recommended to avoid contamination).
- Dip teats, allow a minimum of 30 seconds of contact time, wipe with clean, dry rag.
- Strip a small amount of colostrum out to ensure no visible signs of mastitis or blood.
- If using a teat sealant, this will need to be fully stripped out before collection begins.

TIMING OF COLLECTION MATTERS

Delayed milking results in a lower quality of colostrum being collected.

This graph shows the IgG concentration (g/L) of the colostrum when milked from a cow at 2, 6, 10, and 14 hours after calving. The quality of colostrum decreases the longer you wait to collect after calving.



IgG (Immunoglobulin G), is colostrum's most predominant antibody, that is transfered to the calf in colostrum to help fight infections.

Moore, M., Tyler, J.W., Chigerwe, M., Dawes, M.E., and J.R. Middleton. (2005)Effect of delayed colostrum collection on colostral IgG concentration in dairy cows. J Am Vet Med Assoc. 226(8), 1375-1377.

Cleanliness of Colostrum

When bacteria are present in colostrum, they will fight the IgG for absorption and reduce the amount of IgG that are able to provide calves with passive immunity. Additionally, bacteria themselves can be absorbed in the calf in the first day of life and lead to illness in the following days and weeks.

FACTORS THAT INFLUENCE THE CLEANLINESS OF COLOSTRUM

HARVESTING COLOSTRUM

(see previous page).

STORAGE

- Decide right away if the colostrum is going to be fed or stored. If being stored, it needs to be cooled and refrigerated or frozen quickly.
- Freeze colostrum in small volumes (1 quart per bag or one feeding per bag - your preference) clearly labeled with quality and date. Plastic bags work well to speed up thawing time. Use within one year of freezing.
- If refrigerating buckets of colostrum, drop bags of frozen water in the colostrum to help drop the temperature quickly.
- Colostrum stored in the fridge should be fed or discarded within 24 hours if preservatives are not used.

EQUIPMENT CLEANLINESS

- All equipment used in direct contact with colostrum (e.g. store, mix, feed, temperature check, quality check, etc.) must be clean, free of impurities, dried or stored in antiseptic solution, or replaced if disposable.
- Ensure colostrum is placed into a clean bottle or esophageal tube feeder and is not contaminated by anything before it enters the calf's mouth.
- Devices to evaluate cleanliness (e.g., ATP meters) should be used periodically to ensure best practices are being followed.

QUICK FACTS

Bacteria doubles in colostrum every 20 minutes when left at room temperature.

Bacteria love moist, warm environments and will also get stuck in grooves and scratches on equipment. Regularly replace pails, bottles, and esophageal tube feeders when they begin to show scratches.

If using a bottle, ensure the nipple is not worn out allowing the colostrum to flow too quickly.

TIP: If you turn the bottle upside down and it leaks, the nipple needs to be replaced. Calves can't keep up with the flow of colostrum if the nipple hole is too big. This can cause bronchoaspiration and lead to respiratory issues later.

How To Clean Equipment

Rinse with warm water

Scrub with detergent (chlorine dioxide) and water at 120^{0}F

Rinse with hot water or acid sanitizer

Allow for adequate drying

Keys to Successful Colostrum Management

Newborn calves are born with an immature immune system and no protection; therefore, they need to be fed colostrum that is full of antibodies (IgG) immediately following birth. Feeding colostrum is one component of good colostrum management, however calves need to absorb high amounts of IgG in the first day of life to achieve passive immunity and be able to have immune protection during the first few weeks of life.

There are many factors that influence whether a calf will achieve this transfer of passive immunity from colostrum feedings. Calves should receive 150-200 g of IgG in the first feeding, by bottle or esophageal tube, depending on the dairy's protocol. Followed by a second feeding of another 150-200 g of IgG for Excellent passive immunity.

QUICKLY

1st feeding

As soon as possible, within 2 hours of life

2nd feeding

6-8 hours later, within 12-18 hours of life

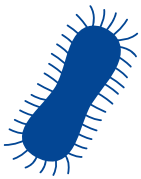
QUANTITY

1st feeding - 10% of body weight | 12.5-17 cups | 150–200 g of IgG
2nd feeding - 5% of body weight | 8.5-12.5 cups | 150–200 g of IgG

QUALITY

Test for quality using a brix refractometer. Ensure it is cleaned between uses and routinely calibrated. Based on the following, determine if the quality is good enough to feed or needs improvement.

Excellent > 30% Brix → Feed to calf
Good 25 - 30% Brix → Option to enrich maternal colostrum
Fair 22 - 24% Brix → Enrich maternal colostrum
Poor < 22% Brix → Replace maternal colostrum



CLEANLINESS

- ▲ Disease free
- ▲ Low bacterial contamination and count
  - • Proper hygiene during collection & cleaning of feeding equipment
  - • Proper storage

Thawing and Heating Colostrum

- Fill a container with 120° F hot water.
- Continue to monitor water temperature if you do not have a colostrum warmer.
- Avoid allowing water to mix with colostrum.
- Thaw and warm colostrum to the body temperature of the calf - around 102° F.

Feeding Colostrum

- Gently restrain and offer colostrum to calf.

  If necessary, use delicate pressure to keep the tube or bottle in place during the entire feeding process.
- Esophageal tube placement: The calf should swallow the tube and as it passes down their esophagus, gently place your hand on the throat area to feel the tube pass by.

  If you are unsure of the placement, remove the tube and try again before letting colostrum flow.
- It is preferred if the calf is standing looking forward. If lying down, ensure they are in a normal lying position and do not tip over to the side during the tubing process.
- Remove tube or bottle after milk flow is completely ceased.

  Continued flow of colostrum during removal of the tube may cause bronchoaspiration and consequent pneumonia and/or death.
- Once fed, record the colostrum feeding based on dairy's protocol and clean equipment to prepare for the next calf.

QUICK FACTS

Extreme temperatures may cause denaturation of proteins and damage to the IgG structure, which would decrease transferable immunity and colostrum quality.

A Sous Vide machine will help with colostrum thawing and ensure the water maintains the correct temperature.

Colostrum effectiveness is highly influenced by temperature.

LOW - decreases colostrum absorption.

HIGH - may cause burns and irritation to the esophagus.

COLOSTRUM REPLACEMENT OPTIONS

Colostrum Replacement Options

Using Alta's colostrum replacers is a suitable option to provide calves with a full replacement meal of high quality, clean, 100% bovine colostrum.

WHEN TO REPLACE COLOSTRUM

- Quality is too low (<22% Brix)
- Volume is insufficient for a full feeding
- Cow has a disease that can transfer to calf via colostrum
  Ex. Johne's, Salmonella, E. coli, Bovine Leukemia Virus, Mycoplasma
- Colostrum has visible signs of contamination - bedding, manure, blood, clumps
- No fresh or thawed colostrum is available for the newborn calf

HOW TO FEED REPLACEMENT COLOSTRUM MEALS

- Feed 150 – 200 g of IgG immediately after birth
- 6-8 hours later, within first 12-18 hours of life, feed another 150-200 g of IgG

SCCL Product *available in the USA*	Number of Bags/Scoops	Powder (g)	Cups of Water	Total IgG Fed (g)
Calf's Choice Total Gold	3 bags	675	9	180
Calf's Choice Total HiCal (Bags)	2 bags	1400	10	200
Calf's Choice Total HiCal (Pail)	5 Scoops	1050	7.5	150
Calf's Choice Total HiCal (Pail)	6.7 Scoops	1400	10	200
Colostrum 200	1 bag	750	10	200
Alta FRESH START	6.7 Scoops	1400	10	200

**USA product line*

MIXING INSTRUCTIONS

Mix powder with water at 110-120^{0}F until combined. Use a whisk or immersion blender to simplify the mixing process.

** Ensure water does not exceed 120^{0}F or IgG will be damaged and will not provide immune protection to calves.*

COLOSTRUM ENRICHMENT OPTIONS

Colostrum Enrichment Options

When colostrum quality falls between 22-30% Brix, the following enrichment recommendations can help improve the quality and add more IgGs to colostrum for the calf. This is done by adding colostrum powder straight into maternal colostrum allowing calves to be fed higher quality colostrum, while still using some of your lower quality maternal colostrum.

THINGS TO CONSIDER

- Still need to have good colostrum management
  - low bacteria, free of pathogens and blood
- Calves with a hard start to life benefit from more IgG in their colostrum
  - dystocia, twins, cold-stress, heat-stress, delayed time to feeding

ENRICHMENT PROTOCOL

1. Measure Brix % of maternal colostrum
2. Based on the following chart, determine if you need to enrich, replace, or feed the colostrum

Colostrum Quality	Maternal Colostrum Brix %	Replace or Enrich?
Poor	< 22%	Replace
Fair	22 - 24%	Enrich
Good	25-30%	
Excellent	>30%	No enrichment required

3. Enrich with powder, using the desired amount based on the enrichment chart on the next page or by using the “Alta Colostrum Calculator” App.

Download the App here

Grams of colostrum powder to add to 1 gallon of maternal colostrum for enrichment

Maternal Colostrum Brix %	Brix % Goal 25%	26%	27%	28%	29%	30%
17% 18% 19% 20% 21%	REPLACE					
22%	180g	240g	300g	360g	420g	480g
23%	120g	180g	240g	300g	360g	420g
24%	60g	120g	180g	240g	300g	360g
25%	0g	60g	120g	180g	240g	300g
26%	-	0g	60g	120g	180g	240g
27%	-	-	0g	60g	120g	180g
28%	-	-	-	0g	60g	120g
29%	-	-	-	-	0g	60g
30%	-	-	-	-	-	0g

Calculate the amount of whole colostrum powder needed to enrich maternal colostrum by adding 15g of powder for 1% Brix increase per 4.25 cups of maternal colostrum.

EXAMPLE

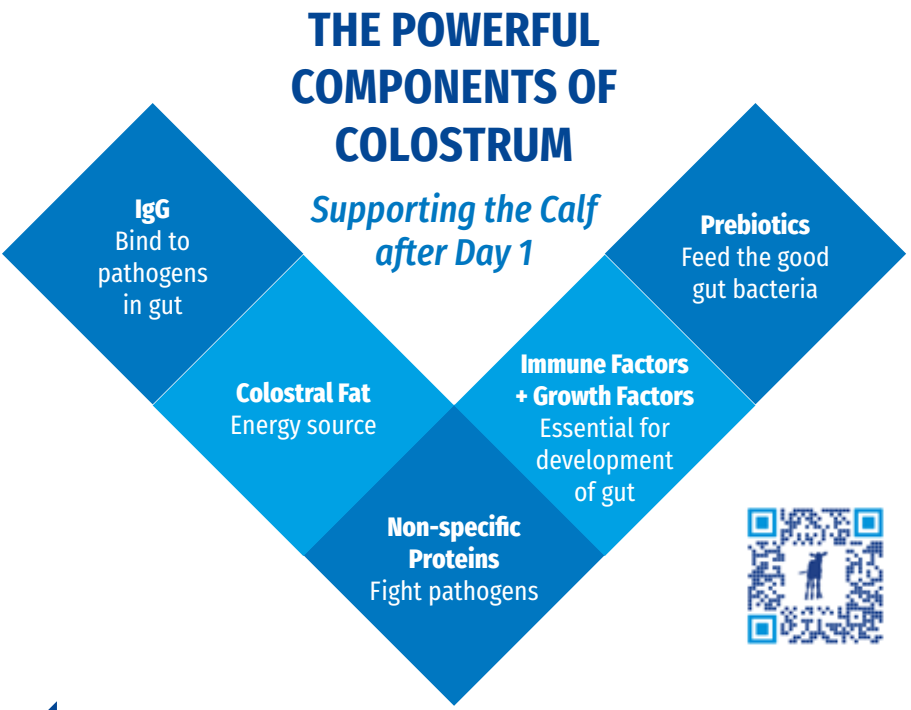
Enrich 1 gallon of maternal colostrum from 23% to 25% Brix:
15 grams of whole colostrum powder x 1 gallon x 2% Brix increase
= add 120 grams of powder.

TRANSITION MILK

Transition Milk

Although calves can only absorb IgG from colostrum in the first 24 hours of life, they still get many benefits from the IgG, fat, and other bioactive components of colostrum after the first day of life.

Post Day 1 Programs were developed to mimic the natural transition milk calves would consume if raised with the cow, as well as provide them with additional support during their most susceptible period for disease- the first few weeks of life.



BENEFITS OF A POST DAY ONE FEEDING PROGRAM INCLUDE:

- reduced antibiotic use
- reduced days with diarrhea
- reduced days with respiratory issues
- reduced inflammation
- improved gastrointestinal health
- increased feed consumption
- increased weight gain
- support developing small intestine
- fighting pathogens

HOW TO IMPLEMENT A POST DAY 1 PROGRAM

1 Determine the level of health challenge your calves face to calculate the grams of colostrum powder needed. The level of health challenge should be decided based on disease and death rates. Talk with your Alta advisor and veterinarian to help determine if you are unsure.

Calf Health Challenge Level	Grams of Colostrum Powder to Add Daily		
	1 feeding	2 feedings	3 feedings
LOW	70g	35g	23g
MODERATE	105g	53g	35g
HIGH	140g	70g	47g

2 Decide how many days your Post Day 1 program will be.

- Feed 3-14 days for maximum protection
- If you are feeding it for a shorter duration, feed at a higher dose
- Feeding longer is generally more beneficial to help support calves during the common time when they are fighting off diarrhea
- Calves that do not get adequate colostrum and have failed transfer of passive immunity benefit from this as well

3 Add the desired amount of colostrum powder to whole milk or milk replacer - mix to create transition milk.

- Whole Milk - add the powder directly to the milk.
- Milk Replacer - substitute the same grams of milk replacer with the same grams of colostrum powder to avoid feeding too many solids at once
- Mix at 110-120°F for maximum mixability
- Feed at 102°F

Continue to monitor and record disease and death rates to ensure the level you are feeding is sufficient for your calves.

FRESH START

Transition cows and newborn calves are the most fragile animals on the farm. Investing in them at the right time can improve short- and long-term performance and increase your herd's profit.

When cows have a FRESH START to their lactation, they can maximize their performance and minimize their health issues.

When newborn calves get a FRESH START, they have the best chance at becoming the most productive, efficient members of your future milking herd.

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FRESH START

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