Kentucky Dairy Development Council's

Beef on Dairy Initiative

Program Guidelines and References

2023

Committed to the Future of Kentucky's Dairy Producers

Table of Contents

Why Beef on Dairy?

Traditionally, dairy operations have focused primarily on- and excelled at- the production of one product: milk. Today, there are numerous opportunities for dairy producers to diversify and improve monetization of byproducts that are leaving the farm. Cull animals including bull calves and heifers that will not be retained have historically been considered byproducts on a dairy operation. However, strategically incorporating beef genetics in your herd can improve the marketability of those calves, provide an increased line of diversified income, decrease heifer raising costs, and decrease the environmental footprint of culls by producing an animal with improved feed efficiency.

While over 9 million units of beef semen are used on dairies and many companies and organizations have established beef on dairy programs, there are still obstacles to overcome. To create a sustainable program that fits the needs of your operation, you should carefully consider heifer replacement needs, sire selection, and marketing strategies for calves. Additionally, providing good calf care from birth is essential to address some of the concerns buyers have about dairy influenced cattle in feedlots, including a significantly higher rate of liver abscesses.

Beef on dairy may provide an improved stream of revenue for your operation over straight dairy animals with the proper planning and care. The Kentucky Dairy Development Council aims to address these considerations in our Beef on Dairy Initiative to support a sustainable beef on dairy market for Kentucky dairy producers.

Kentucky Dairy Development Council's Beef on Dairy Initiative

Participation Requirements and Parameters

- DHIA or equivalent qualified management program
- Permitted Kentucky dairy farm
- Verification of herd size
- Beef semen
    - Obtained from qualified KDDC listing
    - Limit of 2 straws of semen per eligible cow
    - Maximum number of cows eligible is 40% of cows represented on DHIA or equivalent management program
    - Cost share of 50% with max $15 KDDC contribution per straw
- Beef herd bull
    - Genomic tested and meets KDDC EPD requirements (page 4)
    - Limited to one bull per herd
    - Cost share of 50% with max $2,500 KDDC contribution per bull
- Program tags for calves
    - Sire qualified for KDDC Beef on Dairy Initiative cost share program
    - Beef on Dairy Proficiency Review

Instructions for Participation and Cost Share Reimbursement

- Complete a Beef on Dairy Producer Agreement and Self Certification Agreement form
- Semen invoices must include sire information, cost per straw, number of straws purchased and date of purchase.
- Herd bull invoices must include genetic information, date of purchase and purchase price. If purchased without genetic information you must genomic test to acquire necessary EPD information at your expense.
- Submit Agreement form and invoices through your consultant or to: Jennifer Hickerson, PO Box 293, Flemingsburg, KY 41041 or email j.hickersonkddc@gmail.com.

EPD Requirement

Any bull that is associated with and approved through an AI company's individual beef on dairy program qualifies. Sires that are not included in an existing program, including herd bulls, must be genomically tested and meet the criteria below. These criteria were selected in conjunction with University of Kentucky's Beef Extension based on data that supports the production of a terminal crossbred calf with competitive carcass traits. As data expands, these requirements may be adjusted.

To maximize success, consider more specific EPD selection based on your situation. For example, higher CED values should be considered for bulls covering heifers and higher YW values will allow for more balance to the slower growth rate of dairy animals.

		CED (>=)	YW (>)	CW (<=)	MARB (>=)	REA (>=)	$Ax_ (>=)
Holstein	Angus	3	-	-	-	-	98 (40%)
	Red Angus	11	104 (40%)	31 (75%)	-	.25 (25%)	-
	Limousin	9	104 (40%)	31 (65%)	-.08 (50%)	.91 (50%)	-
	Simmental	7	104 (75%)	31 (60%)	-.08 (90%)	.91 (40%)	-
Jersey	Angus	3	-	-	-	-	80 (40%)
	Red Angus	11	115 (20%)	-	-	.25 (25%)	-
	Limousin	9	115 (20%)	-	-.08 (50%)	.91 (50%)	-
	Simmental	9	115 (50%)	-	-.08 (90%)	.91 (40%)	-

*For Simmental, API of >=133 (40%) should be used over YW, CW, MARB, and REA when available.

Definitions

EPD (Expected Progeny Difference) more on page 9

CED (Calving Ease Direct), difference in percentage of unassisted births, with a higher value indicating greater calving ease in first-calf heifers.

$AxH (Angus-On-Holstein), **$AxJ** (Angus-On-Jersey) a terminal index to predict profitability differences in dollars per head of crossbred progeny. Assumes calves will be fed and marketed on a quality-based grid. Traits included are calving ease, growth from birth through the feeding phase, feed intake, dressing percent, yield grade, quality grade, muscling, and height.

CW (Carcass Weight) predicts differences in hot carcass weight and is expressed in pounds.

YW (Yearling Weight) predicts difference, in pounds, for yearling weight.

MARB (Marbling Score) predicts differences for carcass marbling score in marbling score units.

REA (Rib Eye Area) predicts differences of carcass Rib Eye Area between the 12th and 13th rib. Increased REA has a beneficial effect on Yield Grade which also includes CW and Fat Thickness.

API (All-Purpose Index) evaluates sires for use on the entire cow herd with a portion of their daughters retained and the remaining heifers and steers put on feed and sold grade and yield.

Beef on Dairy Producer Agreement and Self Certification Agreement

I have read and understand the qualifying standards to participate in the Beef on Dairy Program. I give KDDC permission to access information for Beef on Dairy. I agree to the requirements to participate in the KDDC Beef on Dairy Program and will allow or provide access to records produced during the eligible period by KDDC Consultants.

Producer # _____ Division # _____

Permit Holder: _____

Marketing Agency: _____

Phone Contact: _____ Email: _____

Mailing Address: _____

_____

_____

_____

DHIA Herd Code: _____

DHIA RAC Code: _____

I certify that my milking herd consist of _____ number of cows.

_____ Producer Initial here

**Self certification is subject to possible spot check verification to ensure integrity of program. DHIA records or herd management records may be requested.

KDDC Representative _____

Producer Signature _____

Date _____

KDDC USE ONLY

Number of qualifying units of semen: _____

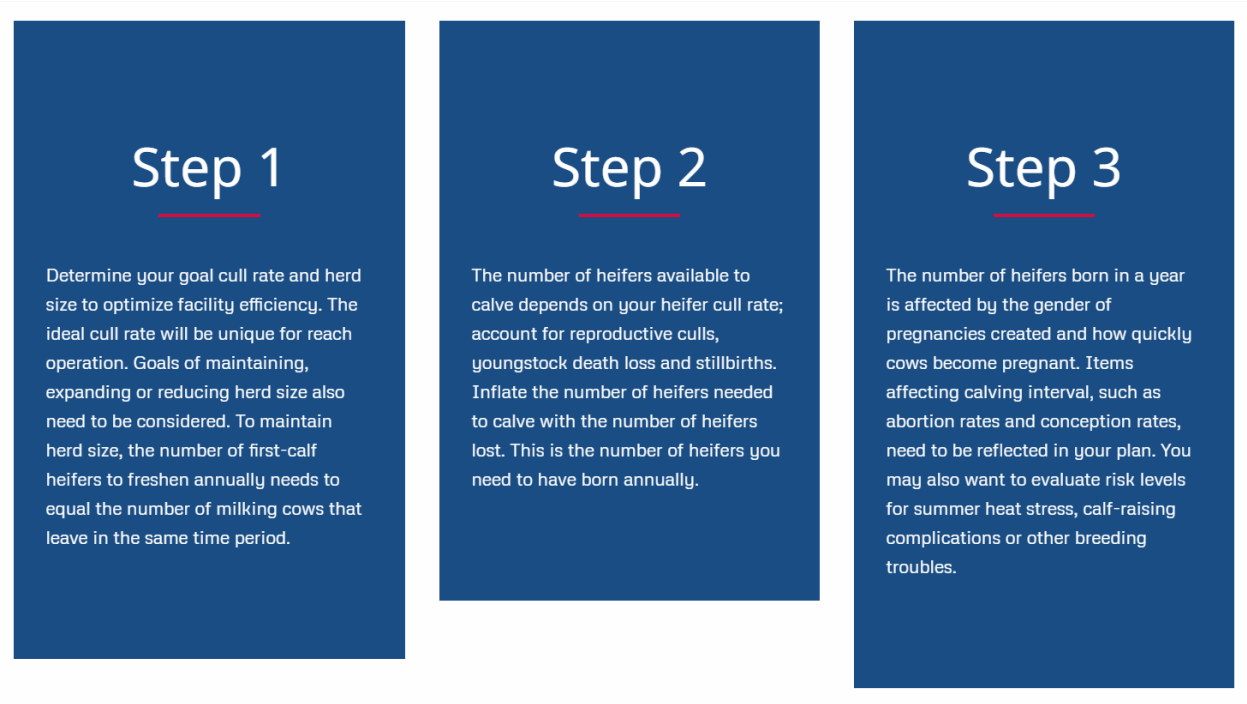
Incorporating Beef in a Dairy Herd

Before using beef genetics in a dairy herd, consider heifer replacement needs, breeding plans, sire selection, and how beef on dairy calves will be marketed.

Maintaining Heifer Replacement Needs and Creating a Breeding Plan

One benefit of using beef bulls is to reduce the cost of raising an excessive number of calves. Heifer raising costs is the second greatest cost on a dairy farm, behind crop enterprises, so understanding this cost, replacement needs, and maximizing the potential of beef genetics on a dairy are all essential pieces of a successful beef on dairy program.

Heifer inventory should be evaluated to assess needs. Consulting with your reproductive advisor and following the steps below can help you determine how many heifers are needed.

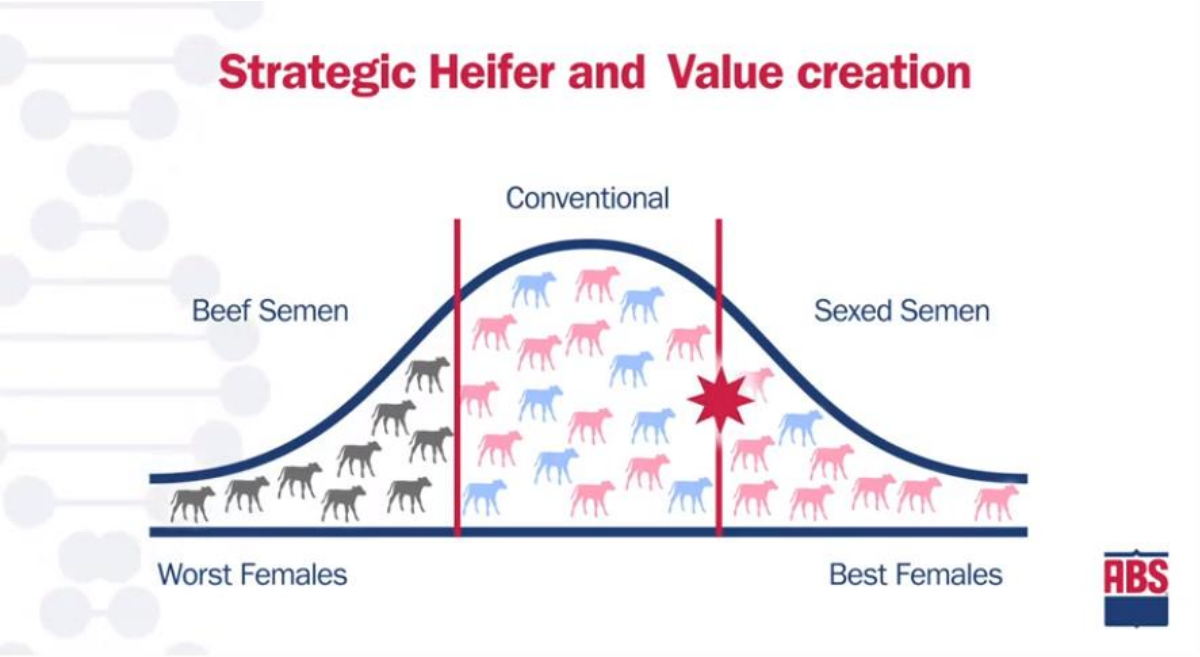


Mandy Schmidt, Genetic Data Analysis Consultant with ABS / Grai-Rose Cattle Sales & Marketing, for Progressive Dairy, February 22, 2019

When evaluating replacement needs, the breeding plan for the herd needs to be considered. Are cows bred by artificial insemination or with a herd bull? Is sexed semen used? These factors influence heifer numbers and the ways that beef can be used in a herd. Using AI to breed cows allows a herd more flexibility in the sires used, including high genetic merit bulls and beef bulls, and has many other economically relevant advantages.

Sexed semen has the potential to improve the speed of genetic improvement in a herd, especially when combined with genomic testing. Using genomic testing to determine the genetic potential of the animals in your herd can help you chose the best candidates for sexed, conventional, and beef semen. Refer to the KDDC MILK 4.0 Program Manual for more information on genomic testing and cost share opportunities.

A basic example of breeding program using conventional, sexed, and beef semen is represented in the graph below. Genomic testing is an efficient way to rank females by quality. The lowest quality females are bred to beef semen, average cows are bred conventionally, and highest quality cows are bred to sexed semen. By focusing on higher end animals for replacements, the average quality of a herd- represented by the star- can improve at a faster rate than relying on conventional semen alone.



The University of Wisconsin-Madison has developed a decision-making tool where producers can conduct an in-depth analysis of profitability of beef usage on their dairy farm. This is also helpful to determine the number of replacement heifers needed to maintain herd numbers when using beef semen. Available at: https://livestock.extension.wisc.edu/files/2020/11/The_Premium_Beef_on_Dairy_Program.pdf.

Sire Selection

Selecting beef bulls with traits that work well with dairy genetics is an important step in creating a successful, long-term beef on dairy program. The following publication from the University of Wisconsin-Madison discusses important considerations for selecting beef sires that will produce a reliable beef on dairy calf.

Considerations for Breeding Dairy Cattle to Beef Breeds for Meat Production

Summer 2019

Authors:
Amanda Cauffman
Extension Agriculture Educator
Grant County
amanda.cauffman@wisc.edu

Ryan Sterry
Extension Agriculture Agent
St Croix County
ryan.sterry@wisc.edu

Reviewed & Contributions by:
Bill Halfman
Extension Agriculture Agent
Monroe County
william.halfman@wisc.edu

Denise Schwab
Beef Specialist, NE Iowa
Iowa State Extension
dschwab@iastate.edu

Dr. Dan Schaefer
Dept. of Animal Science
University of Wisconsin - Madison
dmschaef@wisc.edu

Dr. Matt Spangler
Extension Beef Genetics Specialist
University of Nebraska
mspangler2@unl.edu

Producing dairy x beef cross calves has the potential to increase market value of these calves compared to straight bred dairy bull calves. However, as supply of these calves increases, it's reasonable to assume buyers will become more discerning. Dairy producers can stack the odds in their favor with thoughtful beef sire selection.

Contrary to some old assumptions, modern, well managed Holstein steers are a high quality and very consistent carcass product. It is far from the truth to say they are only good for hamburger.

Today's Holstein Steer

Strengths:

- Comparable quality grades with less external fat than common beef breeds
- Similar taste & tenderness compared to common beef breeds
- Similar taste panel evaluations (Holstein vs. Angus)
- Consistency in performance as a breed

Weaknesses:

- Lower dressing percentage than common beef breeds
- Smaller ribeye size, and elongated ribeye shape compared to common beef breeds
- Risk of exceeding packer height or weight restrictions if not properly managed
- Limited number of harvest facilities procuring Holsteins, resulting in fewer competing bidders

By choosing beef sires that improve upon the weaknesses of dairy steers, listed above, using beef on dairy can improve feed efficiency, rate of gain and reduce days on feed. Wisely incorporating beef genetics can also improve carcass characteristics over straight bred dairy by increasing ribeye size and changing the ribeye shape, increasing muscling, and moderating frame size while maintaining the marbling ability of dairy animals.

Research is needed to establish beef sire selection criteria for use on dairy breeds. Informal observations have found some dairy x beef crosses lack sufficient improvement in frame size and muscling, and are ultimately priced as Holsteins. Breed selection, and within breed sire selection, is important to address the weaknesses in dairy breed feedlot performance and carcasses.

Based on data from a multi-state Extension survey, semen cost, conception rate, and calving ease are the common starting points many farmers use for beef on dairy sire selection.

EPDs: the genetic language for beef

Expected Progeny Differences (EPDs) represent the genetic potential of an animal as a parent. Differences in EPDs of two sires gives an estimate of the difference in the average progeny performance of those two sires when mated to females of similar genetic merit.

Beef on Dairy sire selection

Considerations important to the dairy:

- Semen cost
- Sire conception rate
- Calving ease
- Hair coat color

Considerations important to the feedlot:

- Carcass value, carcass weight, and feed efficiency traits, selected for by using a terminal index (e.g. TI, $B, MTI, etc.) depending on the breed
- Select for greater Ribeye area (REA) amongst high Terminal Index sires
- Improved muscling, by using REA as the indicator trait
- Moderate frame score (Holstein matings)
- Increase carcass weight (Jersey matings)
- Use homozygous polled bulls

Emphasis on calving ease may vary, depending on the use for heifers vs. cows, and breed of dairy cattle. While these traits are of importance to the dairy, they do not add value in the feedlot or to the carcass. Selecting sires that simultaneously improve traits that are economically relevant to the dairy (e.g. calving ease) and feedlot (e.g. yield, feed efficiency) and those traits that enable carcasses to be acceptable as beef carcasses (e.g. ribeye area, frame score) are equally important to semen cost, calving ease, and hair coat color for producing quality beef.

When dairy steers are fed and managed properly they often grade well (80%+ Choice) with comparable quality grades to their beef breed counter parts and less external fat at the 12 to 13th rib. Thus, beef sire selection for ribeye, carcass weight, and frame size may need to be prioritized higher than marbling. Muscle shape of the ribeye and round is extremely important for many grid based marketing programs, and a trait that dairy genetics typically lack. Since there is no EPD for muscle shape, Ribeye EPD is often used instead as an indicator trait.

Hair coat color is a factor in many markets, with discounts for non black haircoat, or black hair coat but with excessive white markings. Some direct market and specialty markets do not place the same emphasis on black hair coat color. Bottom line, investigate your local markets and buyers to determine how much of an emphasis hair coat color should be to your breeding program.

Waygu genetics may be a fit with specialty markets. Waygu beef has superior marbling and tenderness characteristics. However, Waygu and Waygu x dairy crosses are slower to finish. Phenotypically they may display less muscling. Ideally Waygu dairy crosses are marketed as such, as they may be discounted if co-mingled with other breed crosses.

Dairy genetics for milk production and body conformation have changed over the past 30 years, and similar genetic changes have occurred in North American beef breeds. Many beef breeds have brought in outside genetics to incorporate black hair coats into their breeds. Many have also opened their herdbooks to accepting hybrid breeding. Examples include Sim-Angus, combining Simmental and Angus, and Lim-Flex, combining Limousin and Angus.

All major beef breeds have sires with traits that can moderate the frame size and improve the muscle-to-bone ratio of dairy steers, without adversely affecting their marbling traits. Conversely, there are also sires that can have little or even a negative effect on frame score and muscle shape. A 2015 research study from the USDA Meat Animal Research Center[1] found less than a 34 pound difference in hanging carcass weights between Angus, Limousin, and Simmentals in their study. In this study, Angus had the greatest average carcass weight, followed by Simmental, and Limousin. If your frame of reference is the beef genetics of the 1980's and '90's, this is a significant shift. Limousin, Angus, and Simmental all have homozygous black, polled bulls that can provide the needed muscle shape and moderate frame size to add value to these crossbred calves. Bottom line, within breed selection is highly important regardless of the breed you choose.

Heterozygous or Homozygous?
Heterozygous is the term used when an animal has two unlike copies of the same gene, and homozygous animals have two identical copies. Each of these copies is called an allele. When used on horned dams a Heterozygous Polled bull will sire 50% polled and 50% horned calves (sire has one horned and one polled allele, polled is the dominant trait). Homozygous Polled bulls will sire 100% polled calves (sire has two polled alleles). Same applies to coat color, Homozygous Black has two black hair coat genes (i.e. "BB"). , Heterozygous Black has one black and one red allele, with red being recessive (i.e. "bB").

Lack of group uniformity has been identified as a drawback to dairy x beef crosses, primarily due to random sire usage with no consideration to carcass traits, and improper health management. Forward thinking dairy producers can add value to their crossbred calves by providing sire identity and health management protocols to their marketing partners and potential buyers.

Some feedlot operations are offering contracts or purchase programs for dairy x beef cross calves, if you use the genetics they select or provide, and follow specific health protocols. They typically require use of a limited number of bulls or closely related bulls. These bulls are genotypically selected with traits to improve feedlot performance and carcass traits of their offspring while maintaining the traits important to the dairy (i.e. calving ease). This is their way of minimizing variability, improving beef traits, and ensuring predictable calf group health.

On a related note, holding back dairy x beef females to start a beef cow herd is discouraged, as some dairy traits can persist for generations and negatively effect feeder calf quality. If beef cow/calf is your future plan, your best option is to start with all beef breed genetics.

Reference: [1]Kuehn & Thallman, 2017 Across-Breed EPD Table & Improvements. https://articles.extension.org/sites/default/files/2018-2_Across-Breed_EPD_Table_and_Improvements.pdf

Marketing Beef on Dairy Calves

Deciding how calves will be marketed before breeding can be the key to creating a successful beef on dairy program. Specific factors to consider include deciding if they will meet the requirements of an established beef on dairy marketing program, what age/weight they will be marketed at, and the marketing methods.

With the rise in usage of beef semen in dairy herds, organizations and companies have developed marketing programs focused on producing high quality calves to improve the sustainability of beef on dairy in the marketplace. Currently, several AI companies and breed organizations have well-established beef on dairy programs. These programs rely on data from sires that are selected for traits that complement dairy genetics and are proven to produce efficient, high-quality calves. Similarly, KDDC's Beef on Dairy Initiative ensures sires meet certain EPD criteria and encourages good calf care to create an animal that buyers can rely on. Program ear tags are commonly used to identify calves when being marketed and improve traceability.

Ear tags like these from ABS (left) and Select Sires (right) make it easy to identify calves that are part of an established program.

A significant advantage for dairy herds producing program calves is the ability to make connections with buyers that select calves from a specific program. Buyers may select for certain programs because of preferences for certain carcass and growth traits, as well as general reliability and uniformity of calves sourced from similar genetics.

Whether raising calves in or independent of a program, connecting with a buyer or using marketing services can help you make other determinations, including age/weight that calves should be sold, if they will be sold directly off the farm or through a sale facility, and price expectations. Making contacts prior to breeding for beef on dairy calves and meeting the genetic needs of your buyer can make a significant difference in profitability and marketability of calves. Your AI representative, local stockyards, calf growers, and your KDDC consultant can all be beneficial advisors when discussing marketing options to find the best fit for your operation.

Calf Care

The calf care procedures should be the same for beef on dairy calves as they are for calves intended for replacements in the milking herd. One of the primary weaknesses of beef on dairy crosses at the feeder stage is health issues including liver abscesses, but with a strong beginning and good calf care basics, these issues later in life can be minimized.

The calf care basics to focus on include a clean birthing area and calf housing, adequate feed and water supplementation during the milk-feeding phase, and- most importantly- good colostrum management and intake at birth.

Colostrum Management

To achieve passive transfer, a 90-pound calf should be fed a minimum of 100 g of IgG in the first feeding of colostrum. However, because producers frequently do not know the concentration of IgG in the colostrum being fed, it is currently recommended calves be fed 10% to 12% of their body weight in colostrum at first feeding. This means the calf should be fed three to four quarts of colostrum at birth and an additional two quarts by 12 hours after birth. Research has shown calves fed four quarts of colostrum at birth and two quarts 12 hours later have higher blood serum IgG levels at 24 hours of life. The calf should be hand-fed a known volume of colostrum using either a nipple bottle or an esophageal feeder to guarantee enough colostrum is consumed.

To determine the concentration of IgG in the colostrum, a colostrometer (graduated cylinder hydrometer) or a Brix refractometer can be used. While both methods are effective ways to test colostrum quality, advantages of the refractometer include more accuracy independent of temperature of colostrum and less colostrum needed for the test. Below are guidelines on using a refractometer to test colostrum. Contact your KDDC consultant about opportunities to receive a refractometer.

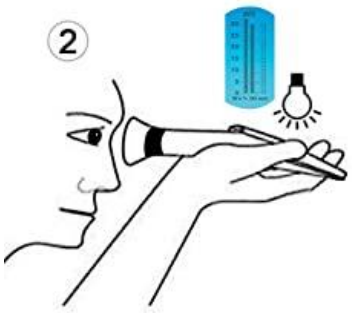
Refractometer

How to use Tiaoyeer Brix Refractometer?

1.Place a few drops of the sample to be tested onto the main prim.

2.Close the day light plate and hold it under a light source,then check the reading.

3.Calibrate to "0"



*Calibrate to “0” using distilled water on the main prim to maintain accuracy.

Understanding readings: Greater than 22% Brix value colostrum is considered high quality.

Colostrum can be fed or frozen in a sterile jug or bag, to be thawed as needed in water between 120-140° F. Labeling the jug or bag with quality, quantity, and date can help keep colostrum inventory organized.

Less than 22% Brix value colostrum is considered poor quality.

If this colostrum must be fed, it should be fed in addition to a quality colostrum supplement or replacer, following the feeding directions on the product label.

Health Protocols for Weaned Calves

The following protocols are recommended when selling weaned calves. When selling wet and pre-weaned calves, work with your veterinarian to establish a protocol that will establish a healthy start, including adequate colostrum intake and a vaccination schedule.

- Hold calves for a minimum of 45 days after weaning
- Trained to eat from a bunk and drink from troughs
- Dehorned and healed
- Castrated and healed (knife castration strongly recommended)
- Treated for grubs and lice (according to seasonal recommendations)
- Dewormed with endectocide a maximum of 60 days prior to the sale
- Vaccinated for Clostridia (7-way or 8-way) according to manufacturers label instructions
- Vaccinated and boostered for IBR, BVD, PI3 and BRSV. Booster injection must be modified live
- Vaccinated for Mannheimia haemolytica toxoid (“Pasteurella”)
- Access to a free choice mineral supplement that meets nutritional needs

Resources

Visit KDDC's online library at kydairy.org for more information regarding beef on dairy. This website is constantly updating and includes:

Calf Birth Certificate (English and Spanish)

Colostrum Management for Dairy Calves, Dr. Michelle Arnold, University of Kentucky

How Many Dairy Replacements Do You Need to Raise to Maintain Your Dairy's Herd Size?, Donna Amaral-Phillips UK Dairy Extension

Feeding the Newborn Calf, Written by Jackie MCCARVILLE, Heather Schlesser and ASHLEY A OLSON https://livestock.extension.wisc.edu/articles/feeding-the-newborn-calf/

Calf Birth Certificate

General Information:

Calf ID: _____ Birth date and time: ___/___/___ _____am/pm

Breed: ☐ Holstein ☐ Jersey ☐ other _____ Sex: ☐ heifer ☐ bull

Dam ID: _____ Dam lactation: ☐ 1 ☐ 2 ☐ 3 ☐ 4+

Sire ID: _____

Calving Data:

Calving area (check one): ☐ group pen ☐ individual pen ☐ pasture ☐ other_____ Attendant: _____

Dystocia score (check one): ☐1 (no assistance) ☐ 2 (easy pull) ☐ 3 (hard pull/surgical extraction)

Number of calves (check one): ☐ single ☐ twin ☐ triplet

Was the calf born dead (check one)? ☐ yes ☐ no

If the calf was born dead please complete the calf death certificate.

Birth weight: _____ lb/ kg

Navel treated (check one): ☐ yes ☐ no

Environmental temperature at birth _____°F / °C

Date and time of removal to calf pen ___/___/___ _____am/pm

Colostrum Feeding Record:

	1st Feeding	2nd Feeding	3rd Feeding	4th Feeding
Colostrum fed (check one):	☐ yes ☐ no	☐ yes ☐ no	☐ yes ☐ no	☐ yes ☐ no
Time of feeding:	am/pm	am/pm	am/pm	am/pm
Source (check one):	☐ dam ☐ other dam ☐ pooled ☐ replacer	☐ dam ☐ other dam ☐ pooled ☐ replacer	☐ dam ☐ other dam ☐ pooled ☐ replacer	☐ dam ☐ other dam ☐ pooled ☐ replacer
Other Dam ID or Replacer name				
Quality (Brix %)	%	%	%	%
Heat treated (check one):	☐ yes ☐ no	☐ yes ☐ no	☐ yes ☐ no	☐ yes ☐ no
Amount fed:	Q / L	Q / L	Q / L	Q / L
Feeding method (check all that apply):	☐ suckling dam ☐ bottle ☐ esophageal	☐ suckling dam ☐ bottle ☐ esophageal	☐ suckling dam ☐ bottle ☐ esophageal	☐ suckling dam ☐ bottle ☐ esophageal

Health Record:

Passive transfer status measured (record measurement if tested):	☐ yes ☐ no	**Total Protein (g/dl)**	**Brix (%)**	**Other**

BVD Tested (check one) ☐ yes ☐ no Result (check one): ☐ negative ☐ positive Retest (check one): ☐ yes ☐ no

If BVD positive retest and euthanize if positive on both tests.

Vaccinations administered in first 24 hours: _____

Was the calf born alive but died before 24 hours of age (check one)?: ☐ yes ☐ no

If the calf died please complete the calf death certificate.

Notes:

From: Lombard JE, Garry FB, Urie NJ, McGuirk SM, Godden SM, Sterner K, Earleywine TJ, Catherman D, Maas J. 2018. Proposed dairy calf birth certificate data and death loss categorization scheme. *J Dairy Sci.* 2019 May;102(5):4704-4712. doi: 10.3168/jds.2018-15728. Epub 2019 Mar 7. *PMID: 30852006.*

CERTIFICADO DE NACIMIENTO

Adaptado de Lombard *et al*, 2019.

Información General

Número de identificación (ID): _____ Fecha y hora de nacimiento: ___/___/___ __:__ am/pm

Raza: ☐ Holstein ☐ Jersey ☐ Otra:_____ Sexo: ☐ Hembra/Becerra ☐ Macho/Becerro

ID de la vaca: _____ # Lactancia/Pariciones de la vaca: ☐1ra ☐2da ☐3ra ☐4ta+

Información del Parto

Donde pario la vaca (marque uno): ☐ Corral grupal ☐ Corral de parto (individual) ☐ Pastura ☐ Otro: _____

Nombre del asistente del parto: _____

Dificultad de parto (marque uno): ☐ 1 (sin asistencia)

☐ 2 (asistencia leve)

☐ 3 (asistencia severa / cesárea)

Numero de becerras (marque uno): ☐ 1 ☐ 2 (twin) ☐ 3 (triplets)

La becerra nació muerta? (marque uno) : ☐ Si* ☐ No

**Si la becerra nació muerta, por favor complete el registro de muerte de becerras.*

Peso: _____lb/kg

Se desinfecto ombligo: ☐ Si ☐ No

Temperatura ambiental al momento del nacimiento: ____°F / °C

Fecha y hora de separación de la vaca y becerra: ___/___/___ __:__ am/pm

Información de alimentación de calostro

	1ra Alimentacion	2da Alimentacion	3ra Alimentacion	4ta Alimentacion
Se le dio calostro	☐Si ☐No	☐Si ☐No	☐Si ☐No	☐Si ☐No
Hora de alimentacion	am / pm	am / pm	am / pm	am / pm
Tipo de calostro	☐Madre ☐Otra vaca ☐Calostros mezclados ☐ Calostro en polvo	☐Madre ☐Otra vaca ☐Calostros mezclados ☐ Calostro en polvo	☐Madre ☐Otra vaca ☐Calostros mezclados ☐ Calostro en polvo	☐Madre ☐Otra vaca ☐Calostros mezclados ☐ Calostro en polvo
ID de la otra vaca / Nombre del calostro en polvo				
Calidad (Brix %)	%	%	%	%
Cantidad	Q/L	Q/L	Q/L	Q/L
Se pasteurizo?	☐Si ☐No	☐Si ☐No	☐Si ☐No	☐Si ☐No
Como se alimento?	☐De le vaca ☐Mamila ☐Tubo	☐De le vaca ☐Mamila ☐Tubo	☐De le vaca ☐Mamila ☐Tubo	☐De le vaca ☐Mamila ☐Tubo

Información de salud

Prueba de inmunidad pasiva (complete si se chequea)	☐ Si ☐No	Proteinas totales (g/dL)	Brix (%)	Otro

Prueba de BVD: ☐ Si ☐ No Resultado: ☐ Positivo ☐ Negativo
Repetición de la prueba: ☐ Si ☐ No
Si el resultado a la primera prueba es positivo, repita la prueba. Sacrifique al becerro si ambas pruebas son positivas.

Vacunas administradas en las primeras 24 horas:

_____

_____

La becerra nació viva, pero murió en menos de 24 horas? ☐ Si* ☐ No
**Si la becerra murió, por favor complete el registro de muerte de becerras.*

Referencia

Lombard, J. E., Garry F. B., Urie, N. J., McGuirk, S. M., Godden, S. M., Sterner, K., Earleywine, T. J., Catherman, D., and Maas, J. 2019. Proposed dairy calf birth certificate data and death loss categorization scheme J. Dairy Sci. 102:4704–4712.