

# WEAK CALVES

**SYMPTOMS, CAUSES, AND TREATMENT**

**BOTTLE AND TUBE FEEDING**

**A PERSONAL ACCOUNT**

In the past few years I've had three zebu calves that were weak at birth. They were lethargic, wouldn't get up, and wouldn't even try to nurse. The first two calves actually had to be taught how to stand and how to lie down...



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Vet exams showed no physical problems. After a few days of tube feeding in the house, both calves went back out with their dams who accepted them eagerly. The third calf was rejected by his dam: perhaps she was confused by his strange behavior. She left him in the pasture where I found him a few hours later; his body temperature was 95 degrees. The vet placed an IV and put him in a heated oxygen tent for 18 hours. Back home it took 10 days of tube feeding before he would take a bottle. I'm happy to say, at three weeks, he's now normal in every way and takes a bottle with great vigor.

Studies suggest that as much as 30% of postpartum sucking problems are due to the lack of an instinctive ability to suck. This condition is often referred to as the "Dummy" or "Silly" Calf Syndrome, Poor Sucking Reflex Syndrome (PSR), or Weak Calf Syndrome. These conditions have been known to occur in Angus, Hereford, Chianina, Brown Swiss and Brahman cattle. The syndrome occurs with calves of any birth weight, size and sex.

**Without aggressive management, many calves die within days of birth.**

## SYMPTOMS

Calf looks normal at birth

Calf is slow moving, lethargic, and may have a hunched posture if it is able to stand

Calf spends more than 1 hour to stand

Poor or absent suckle reflex when the teat or finger is placed in the calf's mouth

Intermittent teat seeking around inappropriate areas

## CAUSES

Cold or wet conditions	Neonatal infections
Difficult labor	Neurological disorders
Maternal rejection	Abnormal milk production by the dam
Inadequate nutrition of the dam during gestation	Selenium and iodine deficiency
Bovine Viral Diarrhea Virus	Leptospirosis
Unidentifiable cause	

## TREATMENT

Tickle the calf's nostrils with straw to stimulate breathing and drainage of amniotic fluid. Don't hang the calf upside down; drainage will come from the digestive tract, and the pressure from the abdominal organs will make it difficult to breathe. Take the calf's rectal temperature; it should be 100.5 to 102.5 degrees. 94-100 degrees is mild-moderate hypothermia; bring the calf inside and warm with blankets, heating pads, heat lamps, hair dryers, and/or space heaters. Very cold calves (under 94 degrees) should be immersed in a warm bath, taking care not to submerge the head.

Bottle feed or tube feed colostrum.

If you pinch the skin it should spring back immediately. If it doesn't, the calf is dehydrated. Inject 30cc. dextrose solution (available from Tractor Supply). Use a large bore needle (18 gauge). Inject in any loose skin you can find. The solution is very thick and hard to push in; it's also painful to the calf. It will form a large bubble at the site, but will absorb quickly.

Dextrose can be given at frequent intervals and will help to energize the calf.

I think it's a good idea to give the calf antibiotic injections just in case.

The calf should be closely monitored for the first few weeks of life, as weakness at birth predisposes it to scours, respiratory disease, and other infections.

## **PREVENTION**

The most effective prevention is the nutrition of the dam during pregnancy. 50% of fetal growth is in the last trimester; this is the most critical period for nutrition.

Another factor is a deficiency of selenium in the dam's diet. Many regions in the US lack adequate levels of selenium in the soil, leading to reduced selenium in forage. A county-by-county US map is available here: [mrddata.usgs.gov/geochem/doc/averages/se/usa.html](http://mrddata.usgs.gov/geochem/doc/averages/se/usa.html)

Hay purchased from a selenium-deficient area should be supplemented with selenium-rich loose minerals and/or protein tub containing higher selenium levels. Newborn calves can be injected with Bo-Se in an amount recommended by your veterinarian.

Results from studies indicate there can be a genetic factor. Cull the cows and sires that show a high incidence of the problem.

Infectious causes can be addressed by a proper vaccination program. Consult your veterinarian for recommendations.

# **COLOSTRUM**

## **WHAT IS COLOSTRUM?**

Colostrum is milk produced during the first few days after calving which is reinforced with blood proteins, vitamins and immunoglobulins (Ig). Antibodies giving immunity to disease are produced by the dam and are absorbed by the calf through "passive transfer." Studies show that calves with low Ig levels in the first 24 hours have twice the death rates of calves with higher Ig levels. Colostrum differs from normal milk in many ways: it is much higher in solids, fat, protein vitamins and immunoglobulins and lower in lactose. The amount of solids and Ig decline rapidly after a day and by day 4 milk reaches its normal composition.

## **IMPORTANCE OF COLOSTRUM**

Dummy calves are at particular risk of Failure of Passive Transfer (FPT) due to lack of colostrum. Newborn calves are born with very low levels of Ig which are critical to the proper function of the immune system. The newborn's digestive system can only absorb Ig for a

limited period of time after birth so early feeding of colostrum is essential. After six hours the calf can only absorb 66% of Ig; after 36 hours the percentage drops to 7%.

## COLOSTRUM QUALITY

The amount of Ig in colostrum depends on a number of factors, including the exposure to disease, disease history and the age of the cow. That is, cows produce Ig in response to disease challenges. The greater the number of exposures to disease, the higher the levels of Ig. Cows raised on a property will produce colostrum with antibodies specific to the disease challenges on that farm.

Colostrum can be refrigerated for only about 1 week before quality declines.

Colostrum may be frozen for up to 1 year. Thaw it in warm (not hot) water. It should not be frozen and thawed more than once.

## FEEDING COLOSTRUM

For a Miniature Zebu calf (weighing 20 lbs. or less), feed 16 oz. at a time. Check with your vet for his/her recommendations.

It is preferable for the calf to nurse a bottle but if it can't, careful stomach tubing is the next best option.

	DO	DON'T
<b>Colostrum Feeding</b>	<p>Feed first feeding of colostrum as soon as possible.</p> <p>Use fresh colostrum if available.</p> <p>Feed amount recommended by your vet.</p> <p>Stomach tube first feeding if calf has a poor suckle reflex.</p>	<p>Use colostrum from cows with leaking teats or mastitis.</p> <p>Avoid storing colostrum that contains blood or is low quality</p> <p>Do not use faulty or dirty equipment.</p>
<b>Colostrum Quality</b>	<p>Use only good quality colostrum.</p> <p>Save good quality colostrum in 1-2 liter bottles.</p> <p>Thaw out colostrum carefully to preserve antibodies. Use warm water.</p> <p>Powdered colostrum supplement can be used if no other is available.</p>	<p>Use thin watery colostrum, especially from heifers.</p> <p>Use abnormal colostrum.</p> <p>Place frozen colostrum in hot water or heat in a microwave under high power.</p>

<p><b>Other Management Tasks</b></p>	<p>Dip navel with iodine as soon as possible. Isolate the calf in warm dry surroundings.</p> <p>Continue to feed sufficient intakes of consistent quality. Check for bacterial infection and dehydration.</p>	<p>House calves in wet/drafty surroundings. Feed using poor techniques at erratic times.</p> <p>Overfeed the calf and use antibiotics without vet consultation.</p>
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## BOTTLE FEEDING

There are two types of calf bottles: screw-on and snap-on. Make sure you have the right combination. There are several types of nipples also. The big nipples have a “flutter valve” that will vent air when the calf sucks, but I find that they don’t work with my Miniature Zebu calves. Sometimes I poke an icepick hole near the top of the bottle so I can control the vacuum with my finger. The nipple holes always need enlarging; I keep several nipples on hand because I always make the holes too big. Nipples will crack with age; buy them yearly and store for emergencies.



STANDARD BOTTLE/NIPPLE



SHAPED NIPPLE WORKS BEST FOR ME



LAMB NIPPLE, VERY SOFT  
PULLS OVER COKE BOTTLE



PRITCHARD NIPPLE, VERY SMALL  
(I HAVEN'T USED THESE)

## TUBE FEEDING

I have a calf tube feeder from Tractor Supply. I modified it to fit a Miniature Zebu calf by cutting off the tube 2" from the bottle and inserting a smaller vinyl hose from Home Depot, and smoothing the end with a Dremel tool. The hose should be longer than the distance from its mouth to its belly, about 16" total.



The tube has a natural curve to it. Hold the tube so the curve is pointing down.

Pick the calf's head up and insert the tube at the side of its mouth. Get it over the tongue and probe gently. The windpipe is hard and ridged while the esophagus is soft. The tube will naturally want to go in the right direction and the calf will begin to swallow it.

When you have about 6" of the tube left outside the calf's mouth, elevate the bottle and pour the liquid in slowly. It should take a minute or so to get 16 oz. in. If it quits pouring, pull out the tube a little so it quits backing up. When it's empty, remove the tube slowly, making sure not to dump liquid into its mouth.

Keep the calf's head stretched up in the nursing position.

**IF AT ANY TIME THE CALF COUGHS, STOP IMMEDIATELY!**

**CALVES CAN EASILY DEVELOP PNEUMONIA FROM ASPIRATING FLUID.**

## **CLEANING EQUIPMENT**

Wash in hot soapy water with bleach added. Scrub inside with a bottle brush. Colostrum, being so high in fat, leaves grease on all surfaces. It's a good idea to boil the tubing and cap, making sure the plastic doesn't touch the sides of the pot.

**ALWAYS CONSULT YOUR VET. THIS IS ANECDOTAL INFORMATION AND MAY NOT APPLY IN ALL CASES.**

## **Annabelle and Simba's First Days: a Personal Account**

*Day One--8pm (approximately):*

*Born, I wasn't there. Dam (Annie) in stall with heat lamps. Weather about 40 degrees. Dry.*

*9pm. I came out. Eyes open, head raised, but lying down. Licked off but not dry at all. Get towels, hair dryer. Mom agitated. Focus rubbing on head to keep brain warm. Legs cold. Rub them. Mom licking only once or twice every two minutes. Rub her vigorously. Has a little snorkle when she breathes. Never opens her mouth. Tickle nostrils with hay, no sneeze. Has a weak suckle response. Shivering a lot. One of her eyes is weird—all opaque and blind-looking. Her tail is kinked in an S-curve.*

*When I lift her up to stand, she doesn't. In 20 minutes of working on her, her front legs stand a little but back legs stay raised in the air. Her head is up at all times.*

*10pm. Take her in house. Towels all around, rubbing a lot. Get her almost dry but for feet. Keep working on them. Take to Mom.*

11pm. Lying down, no interest. Catch Mom's horns and tie to wall. Try to tie her leg back but that makes her flip out. Leave rope on her leg. Tom milks her, getting about 4 oz. She kicks cup out of his hand. Milk again. Get 3 oz. total. Tube feed baby.

1130pm. Back to house. All I have is electrolytes, no colostrum, dammit! Give her 16 oz. electrolytes by tube.

12am. Tom gets her to stand on all four legs by supporting her between his knees.

I take her in my lap with towels and heating pad on medium. Pees on me. Her head still staying up. Quiet, no sleep.

1230am. Struggling to get up. Stand her up and she starts walking around well. Bends her front legs like she wants to lie down, but falls. Gets up.

Take to bathroom with a lot of towels and room heater. Clear bathroom floor of things she could get into. She pees a lot.



Day Two (14 hours old):

8am. Uneventful night. Uninterested. Tube her with 16 oz. colostrum. Hard to figure out measurements because the package says "one whole package with XX? water." It says "use entire solution at once; do not store." I use a stick blender to mix; it's really lumpy and hard to blend.



12pm. In the bathroom. She's backed up into corner like she can't figure out how to go forward. Towels don't look slept on. Big pile of meconium poop (this is the "first poop": it's black and sticky).

1pm. Back to Mom. No interest in anything. "Meh" in a soft voice.

2pm. Back in house. Go to Tractor Supply. Get 2 bags medicated colostrum and Vitamin B Complex injection.

3pm. Out to two different storage sheds for bottles and nipples. Get organized, fool! Check that nipples aren't cracked and that I have the correct combination of either snap-on or screw-on nipples and bottles.

330pm. Mixing colostrum and messing up math all over the place. Get Tom to check math and argue about it for a while. Correct my measurements. (OK, my excuse is that I was ruined by an education fad called "The New Math" in the third grade.) Put 24 oz. water in and 175 g. (half bag) colostrum into tube feeder.

4pm. Back to Mom.

430pm. She's lying down. Decide to leave her with Mom until sunset around 5. Outside temp around 40, strong sunshine. Heat lamps still on in stall.

5pm. Go to barn, she's lying down, uninterested in Mom. Back to house.

6pm. Nurses a bit from bottle, then I tube her. I realize her weird eye is because the iris rolls back a lot. Sometimes I can see the iris rolls halfway normal. Starts having bright yellow colostrum poop.

Day 2 (30 hours or so):

9am. I have to go to school—it's the first day. Put her in the front seat, but she struggles, so I get a dog kennel. Struggling is good. She stands all scrunched into the kennel the whole time.

1p. To vet.

- a) Doc finds nothing wrong but a little fluid in her lungs; gets diuretic shot.
- b) Weighs 20 lbs., high for my calves who tend to be 17 lbs. (but I haven't weighed my newborns for years—they always look the same).
- c) Wonky eye little better. Doc thinks might just be weak muscles ("lazy eye") and might improve. Can't definitively tell whether she's blind or not.
- d) Doc notices asymmetry of face. Calf's left side is a tiny bit smaller and flatter; very hard to see until you look for it. Doc agrees is "Wry Face."
- e) Her tail is also "Wry Tail." It has an S-curve and might have one or more kinks.
- f) Get Gentacin (antibiotic) and Banamine for pain (she grinds her teeth sometimes, which is a sign of pain).
- g) Told me to give her 20cc Dextrose (from Tractor Supply) 3x/day although she's not really dehydrated.
- h) Told me B Complex shots were fine.

The night before, when I was on the web looking for info, I wonder about a selenium deficiency. Lots of my friends around the country give selenium injections at birth because their soil is deficient. I looked at the US map and found my county has a lot of selenium, but it can vary all around here.

**AND—I'VE BEEN BUYING HAY FOR TWO YEARS NOW FROM THE SAME GUY. HE BRINGS IT INTO N. TEXAS FROM SOMEWHERE IN LOUISIANA. I HAVE NO IDEA ABOUT ITS SELENIUM LEVEL. Oh. My. God. I feel like a detective on TV!**

*I ask the doc about this. She's kinda doubtful, but gives Annabelle a shot of Bo-Se, and is ordering me a bottle to use at home on future weak calves.*

*A friend tells me that some protein tubs have elevated levels of selenium, so I buy some of them from Tractor Supply. I already use high-quality loose minerals, but I'm not the greatest at keeping the feeder full.*

*4pm. Back home, in the house. Still trying bottle, having trouble getting nipple opening right. Finally tube her. (Somewhere I heard that you shouldn't tube for long because it takes away their suckle reflex. I'd asked the doc in the past about that; she told me that's false—you can tube forever.)*



*Day 3. (40 hours or so) About the same. Couple hours out with all cows. Didn't seem to enjoy it much but wasn't shivering. Found her backed up between water trough and the fence like she didn't know how to get away. Mom puzzled and weirded out. Next feeding will be with black lamb nipple recommended by my Facebook friends. It goes on a plastic coke bottle. I enlarged nipple opening. No luck—it's too soft. Got a baby (human) baby bottle—no luck—too soft and too small. Tube.*

*I've had two--full siblings—with identical newborn behavior.*

*According to the web, most dummy calves were chilled at birth. Neither of these were. Heat lamps on, no drafts, warm enough for me to take off my coat. Sluggish. Weak suckle reflex.*

*The first one, Napoleon, had to be taught how to stand. Napoleon would stand in front of the bathroom heater, dozing off. He'd catch himself and wake up again. On day two, I got a bed pillow by his side and knocked him over onto it. He was pleasantly surprised. Had to tube feed him. To vet where she said nothing wrong with him, gave me antibiotics anyway. I also gave him 25 cc. dextrose a few times which didn't seem to energize him. Took him to Mom where he seemed learn how to nurse, but actually just made loud smacking noises. Back to house and tube feed. He finally got the hang of it and was back with Mom by Day Three. Then stayed with her fulltime. Napoleon is a fine yearling bull and just as intelligent as a regular bull.*

*This one, Annabelle, is on a bottle somewhat unwillingly. She sees me and licks her lips, but that's it. Tried several different nipples (with enlarged holes) and settled on one that pours in. It's a red lamb nipple. Gets 8 oz. per feeding at 4 days, 3x/day, I'm slowly trying to work up amount. If she got to 16 oz. per feeding I'll be thrilled. Is gaining weight. Pees like a racehorse at feeding. Last night she jumped around a little after milk. Mainly wanders around the house and lies in front of the electric faux-fireplace heater in the bathroom. She's calm and placid, mildly interested in her surroundings. Spending a bit of time out in the herd.*

*Day Five. Finally drinks 20 oz. from her bottle!*

*Day Six. Unbelievably, after I took her out to the herd, Mom Annie still wants her back. She nurses! So she stays out with her.*



*Three weeks later. All OK! Her eye is perfect; face and tail are still wonky. The left side of her face looks a tiny bit smaller than the other side. If it doesn't somehow "even out", she'll be spayed as an adult to avoid passing on this trait, as it could be genetic.*



*I think back over the years about three other calves, two from one mom and the other from a different one. Two were born in winter, one in summer. I tried to take the "wait and see" approach, but still brought them in the house and bottled them. Two went back to Mom on Day Two and I found them dead that night. The last went to the vet at Day Three; her kidneys were shutting down and she had high white blood cells but no identifiable infection. Tested her for everything and treated her for everything. Stayed lackadaisical and died at 10 days. The last, born in summer, kept walking away from her mom and the herd—way far—and died at three days.*

## Simba, a weak calf born two weeks after Annabelle

*Simba was found in the pasture abandoned by his dam Sabela, a Gyr who's an excellent mother. His sire is my herdsire Lil Prince. He was chilled, could walk but had no interest. The weather was 60-70 degrees and dry. It was late afternoon, February 9, 2016.*

*Inside the house, very weak suckle. Tube him w/ 16 oz. colostrum every 6 hours. I'd loaned my space heater to a friend, so I kept a heating pad and towel around him.*

*To vet the next morning where his body temp is 95 degrees. He gets IV fluids and goes into the heated oxygen kennel until the next day. Shot of Bo-Se. Come home with antibiotic shots and some pills in case of scours. More dextrose injections—30cc each time.*

*Day 2-5. Tube feeding him, raising amount a few ounces per feeding. Poop all OK. Take out to Mom repeatedly; she licks him once and walks off.*

*Around 1 week. Finally takes a bottle and goes crazy on it. I used the nipple with the largest hole—it actually runs out. He sucks the bottle constantly till it's gone. Very quickly he's on 48 oz. 3 times a day. I'm afraid to increase that—I read that calves should have 10% of their birth weight in milk daily. So that's 40lbs birth weight—10% is 4lbs—1 gallon of milk is 8lbs. Uh-oh; I must ask vet. He's super hungry, runs all around, and my legs are bruised from him bunting and chewing on me. He's starting to chew electric cords so I have to watch him. I start giving him grass, hay, and calf starter. I make a bundle of grass 2-3" long and stuff it in his mouth. He eats 4 mouthfuls after each bottle. Chopped up some of the small pellet size calf starter and stuff it in his mouth. I keep a bowl of hay and fresh water in the bathroom, but he doesn't eat it by himself.*



*2 weeks. He now goes out with the cows every day until after dark. I feed him at 10am, 4pm (outside), and 9pm. He's in the bathroom at night with the heater on low speed. When he's out he runs a lot, very happy.*

3 weeks. I start him on the 21-60 day milk replacer. Always checking for scours, always fine, thank goodness. He's making friends with the other calves, runs a lot, and knows to stay away from Maybelle, the giant 50% Brahman with a bad temper. Knows to avoid Hobart the evil goose. Looks like he's eating hay sometimes. Isn't ruminating yet, web sources say 25% calves will start at 2 weeks. On our very reliable home scale he weighs 42lbs, 2 more than birth weight at vet. Must ask her.



Simba's sire Lil Prince, dam Sabela, and full brother Tarzan (at one year)

*Human and cow social skills: I'm trying to blend to make the best of both. He's scared of Tom who's only fed him a few times. He takes the bottle readily from visitors. I brush him for long periods, which he loves. Bottle fed bulls can be very dangerous as adults because they think humans are part of the herd, so I'm trying to make him recognize the difference. When bull calves are raised in a group, they adjust much better and can be worry-free adults. But with Simba being with us half the time, I'm concerned. If he proves to be a problem at breeding age, I will have his semen collected, then steer him.*

*I'm happy to say that, out of the seven calves I've had this winter, five have been completely normal.*

I hope my experiences can help you in an emergency situation. Active intervention is required in calves with Poor Sucking Reflex Syndrome. It is better to intervene too soon than to take the "wait and see" approach.

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