

CALF REARING

If we could only grow them up to breeding age, there is no reason why we should be importing breeding stocks every year. Assuming that we have 1200 cows from our last importation, we could have easily produce 500 to 550 heifer calves every year for the next 5 years from the original stocks. This I consider as opportunity cost lost. Every time we have mortality I always think how much we have lost from that animal up to her productive age. That is why, when some one killed one of your animals let him pay for the lost future production not the value of the animal.

From personal communications, calf mortality rate is as high as 60% and above. There are maybe several factors that cause this mortality. However, calf mortality could be reduced or avoided. But how?

This paper will discuss on how we successfully raised our dairy calves without mortality. Maybe some of you may doubt our report. Here we are not trying to prove or to convince anyone of you but rather we shall present our SOP (Standard Operating Procedures) on how we have done it. On this report I will discuss my experience from my former job in Oman. Neil will discuss our experience. The experience in Oman plus the information gathered in Philippine setting was our basis to set up a new approach in calf rearing. This SOP was made to suit the local conditions and available resources. However, it is our policy that improvement on calf rearing will be every day concern. There will be continuous improvement and development as we go on.

HOUSING:

	SOD (case #1)	Oman
Ø Building Materials	Coco Lumber	First class materials. Two big pens of a big building for adult cows were utilized for calf rearing.
Ø Calf pen dimension 1. For 0 day to 1 week old 2. One week old to 4 weeks old 3. 4weeks old to 2 months 4. 2months old to 6 months old.	2 feet x 5 feet, soil flooring with rice hull as bedding Same as above 4 feet x 5 feet, soil flooring with rice hull as bedding. Partitions were adjusted. One calf in a pen. All partitions were remove and with ample run for exercise.	4 feet x 5 feet pen with elevated wood flooring. 4 feet x 5 feet pen with elevated cemented flooring. 4 meters x 4 meters pen with cemented flooring and half soil. Calves were group according to sex and sizes. Same as above.
Ø Bedding	Rice hulls, when the rice hull become wet we top them with new dry rice hull.	Hay or dried grasses. Dairy change of beddings due to urine and manure spoiling the hay.

CALF FEEDING PROGRAM COLOSTRUM FEEDING

Ø Within 2 hours after birth	2 liters of good colostrum Esophageal feeding of colostrum. Colostrum warm to body temperature before feeding.	Calf have to wait the morning feeding or after feeding. Voluntary intake of calf no testing of colostrum quality. Colostrum at room temperature.
Ø 12houers later	2 litters of good colostrum Esophageal feeding of colostrum. Colostrum warm to body temperature. Colostrum testing.	Voluntary intake of calf. If the calf does not like to suckle, we just leave them until the calf become hungry. And that is the time; we train them to drink from the bucket.
Ø 2 to 4 days	2 liters of transition milk. 2x feeding. The amount is based on 10% initial body weight.	2 liters of transition milk. 2x feeding. The amount is based on 10% initial body weight.
Ø 4days to 27 days old	Whole fresh milk. Amount based on 10% initial body weight. Milk warm to body weight. Milk warm to body temperature before feeding. Preferably newly harvested milk. Feed 2x dairy into equal amount.	Whole fresh milk. As the calf increases in weights we should increase her milk ration to 10% of her body weight. Feed 2x dairy. Milk is fed fresh in the morning. Afternoon feeding of milk was stored in room temperature.

Ø 30 days to weaning	Same as above	Same as above
Ø CALF STARTER	Introduce 2 nd day. Handful of feed offered to the mouth every after milk feeding. This encourages licking the hands with starter. The amount is increase every day until the calf learns to eat by herself.	Introduce 7 th day. Feeds put into bucket whole day. Problems: small amount nibble by the calf, birds eating most of the feeds. Hence feeds become dusty, stale and waste.
Ø GRASS OR HAY	Introduce on 6 weeks old..	Introduce on 7 th day.
Ø WATER	Introduced on the 7 th day as free choice.	Introduced on the 7 th day as free choice.
Ø WEANING PROGRAM: No. of days System	Heifer calves = 35 to 45 days old Bull calves sold 4 months old. Abrupt	Heifer calves = 90 days Bull calves = 60 day Gradual, 6 days once a day milk feeding followed by days every other day feeding.
Ø HEALTH CONCERNS: First week First month	No problem No problem	Scouring Scouring and Pneumonia

OUR RECOMMENDATION

Make your management practices as simple as possible but consistent in your dairy routine especially on..

FEEDING MANAGEMENT

Calf survival and growth depend more than anything else on sound feeding management practices.

Following good nutritional practices will allow them to grow into productive and healthy dairy cows.

How to fed the calf with colostrum?

Let the calf suck for 15 minutes, using bottle with nipple.

Then force-fed the calf using esophageal feeder, whatever colostrum left after sucking.

Note: we don't recommended esophageal feeding for those who are not train to do it. Instead try to use a flexible rubber hose or old liner of milking cups and encourage the calf t o suck the whole amount of colostrum.

Liquid feed after colostrum

It is generally recommended to feed whole milk or milk replacer at a rate of 10% of initial body weight.

10% =

BODY WEIGHT AT BIRTH

NOTE : DO NOT INCREASE THE AMOUNT OF WHOLE FRESH MILK AS THE CALF INCREASE OM WEIGHT. INSTEAD INTRODUCE THE DRY STARTER FEEDS ON THE 2ND OR 3RD DAY.

Feeding Dairy Calves to Weaning

- 1.Keep calves in dry, draft-free housing.
- 2.Make sure calves receive colostrum for at least one day and preferably two or three days.
- 3.Change to whole milk or milk replacer at two or three days of age.
- 4.Do not over feed; over feeding is a serious cause of scours and loss of calves.
- 5.Feed milk or mixed milk replacer dairy at a general rate of 10% of body weights (10 kg. For a 100kg; calf)
- 6.Feed regularly, usually twice dairy. Once-a day feeding has been successful but requires more attention to health problems, especially scours, at an early age.
- 7.Use cleans feeding utensils and makes sure sanitary conditions exist around pens at all times.
- 8.Milk or, milk replacer should be fed at the same temperature each feeding, usually 35 to 38 °C.
- 9.Calves must receive milk or milk replacer until they are at least 3 to 8 weeks of age.
- 10.Age at weaning is dependent on the time required for calves to develop functional Rumen and eat from 1.5 to 2 kg. Of calf starter per day (usual 6 to 8weeks)
- 11.Feed calf starter and high-quality hay starting at 7 days of age. Feed free choice, Allowing fresh feed to be available at

all times. Fresh, clear water must be Available at all times. Fresh, clear water must be available. See table under for Example starter rations.

12. we have to give silage or root crops after they turn 3 months old. Then we start to give them 0.5kg per day and gradually we increase the quantity up to 2.5 or 3kg at 6 months.

13. it is preferable to graze the animals after 6 months old.

Calf-rearing systems

Calf-rearing systems to be used after feeding colostrum are as follows.

1. Nurse cow system.

Two or more calves are allowed to nurse one cow. This is the most expensive system due to the loss of income from one cow. It is usually recommended for real production only.

2. Whole milk system.

Milk is hand fed to calves is usually weaned at about 60 days and will eat 300 to 500kg of whole milk.

3. Milk replacer system.

This method can cut the cost of the whole milk system in half. Calves are hand-fed milk replacers instead of whole milk at the rate of 6 to 8kg per day. They are weaned at 28 days (early weaning) to 60 days, depending on how fast they can eat solid concentrate and forage. Milk replacer should include animal protein, as young calves do not have the digestive enzyme at birth to utilize non-milk ingredients.

4. Combination of milk replacer and whole milk systems.

This reduces the amount of whole milk used by gradually switching from whole milk to replacer at 2 weeks of age.