Less replacement heifers due to poor calf rearing

Insufficient dairy heifers affect growth prospect of dairy industry in Ethiopia.

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Due to a chronic shortage of dairy heifers, farmers in Ethiopia face problems in establishing professional dairy herds. Rearing heifers starts right after birth of the calf and rearing practices in Ethiopia need improvement as the study of Jettie Veerman has shown.

The calf mortality rate on dairy farms in Ethiopia is very high. Because many calves die, there are only few calves left for rearing. As a result, after a few years the herd is decreasing, there are no investment possibilities and a farmer will earn less income. Therefore, it is important that the percentage of calf mortality decreases and through this, the replacement rate of the dairy cows rises. To increase the rate of replacement in the livestock, some significant changes are needed on Ethiopian dairy farms.

Calf rearing

Calf rearing in Ethiopia leaves much to be desired. This is initially seen in the percentage of calf mortality on dairy farms. The calves that survive the first weeks are extra valuable to the farmer. But for the calves that survive, it is not guaranteed that they get a proper rearing and will be able to calve within 24 months. Calf rearing is not a priority for most of the dairy farmers in Ethiopia. The dairy cows get their first attention because the sale of milk directly results in a visible income. Raising of calves costs money and doesn't generate visible money. There is a lack of knowledge to know that investing in good calf rearing, gives a better heifer that produces more milk. Calf rearing is eminently an investment on the long term. This fact is a great challenge for advisers to convey knowledge and convince farmers that investing in calf rearing is very important for the farm's future progress.

The average age at calving of heifers in Ethiopia is 36 months (Ketema, 2015). Because the heifers calve in 36 months instead of 24 months, fewer calves are born. This is the first problem. But what should change to ensure that calves grow faster and therefore calve earlier?

Feed

Calves receive on average 4 litres of milk a day (Bongen, 2014). In addition, the calves are fed roughage like wheat straw, hay, elephant grass and rarely alfalfa. Most farmers have hay during the rainy season only. The rainy season in Ethiopia is from the end of June up t half of October. The farmers grow elephant grass during the rainy season. Most of the year, the calves are fed only wheat straw and

Internship and field survey

Jettie Veerman, student animal husbandry at the Aeres University of Applied Sciences in the Netherlands, was doing a field survey on calf rearing practices on commercial dairy farms in Ethiopia from April 4th till May 26th. She did her field work together with the advisors of the technical training programme.

Main objective of the study was to analyse current calf rearing practices on commercial farms in Ethiopia and advice DairyBISS on improvements which can be incorporated in our training programmes.

During her studies, she has specialized in the topic of calf rearing and done similar surveys and undertaken research in post weaning dips.

some elephant grass. The farmers feed them milk until the age of 3 or 4 months. The reason is they expect calves to grow better and stay healthier when they are fed milk for a longer period.

Calf rearing pellet is not provided on most of the farms because it's too expensive for most of the farmers. Instead of rearing pellet, the calves get, after weaning, concentrates for dairy cows, which is not suitable for them. Most of the calves do not have ad libitum access to water.

Housing

New-born calves are not individually housed. When calves are born, they are separated from the mother and kept in the same room, only a few meters away from the dairy cows and tied with a rope. The calves are housed with different ages together. The barn floor is made of concrete. Straw is used as roughage and is too expensive to serve as bedding. The dairy cows and young cattle are kept in a stuffy stable and tied because of space shortage. As a result, the young animal becomes weak due to lack of movement. Also for the claws it is bad because they do not wear down. There are many claw and leg problems.

This calf gets only straw. As a result, the calf is skinny and slim and she gets a swollen belly through shortage of protein. This calf is about 7 months old.

Farmers have little space in the barn and the occupancy rate is high, resulting in high infection pressure. In addition, most stables have high walls. Ethiopia has a warm and dry climate, so there is less ventilation. As result it is stuffy and warm in the barns. These barns are a source of viruses and bacteria.

Diseases

The biggest cause of calf mortality is diarrhea (Ketema, 2015). Almost all calves have to suffer from diarrhea in the first weeks. In addition, a calf at birth is already weak or is born-in because the mother had a poor ration of hay and straw during pregnancy and did not get minerals. But the biggest cause of diarrhea is the lack of hygiene. The calves are fed raw milk because commercial milk replacer is not available in Ethiopia. Refrigeration is often too expensive. Milk is stored in a bucket and gets spoiled quickly due to the high temperatures. Also, the milk is soon unclean because the bucket is not sealed off airtight.

Calves in a stuffy group shelter. The concrete floor is broken, thus a high risk of damage to legs or hoofs.

Calves are more susceptible to pathogens causing diarrhea because of their poor resistance. Calves get only 4 liters of milk each day. This is almost enough for own calf maintenance (Gaast, van der, 2013). In addition, the roughage quality is poor and low in nutrients. If a calf is suffering from diarrhea there is no growth at all. Pneumonia also affects the dairy farms due to poor housing and high infection pressure.

Pneumonia usually begins around the 4th or 5th week of life and seizes its chance to attack when there is poor resistance. Once a calf has pneumonia, it damaged the lungs and this calf will always remain in growth and can never catch up with growth.

Solutions

First, it is important that the calves grow faster during the first 8 weeks of life. This growth can determine the milk yield (Elanco, 2015). In the first few weeks the foundation is laid for the udder formation. A calf that drinks more milk and therefore grows faster, will develop more udder tissue. And will produce more milk in the future (Elanco, 2015). So, calves should receive 4 liters of colostrum a day for the first 3 days and 6-8 liters milks in the first 2 weeks. After that, the amount can be decreased to 5 liters in week 2 to 8 and phased out to 2 liters up to

weaning in week 10. In addition, it is important that the milk that is supplied, is fresh and clean. The buckets must be clean before the milk is stored in it. In addition, it is important that there is a cooling system or that the milk is delivered to the calves immediately after milking to prevent spoilage and contamination. This reduces the chance of diarrhea. The calves also get more resistance when they absorb more nutrients. This reduces the risk of diarrhea and pneumonia.

For the development of the rumen, it is important that the calves are fed calf rearing pellets during the first period. Due to a good intake of concentrates, the rumen develops smoothly. This is essential because after weaning, the calf is fully accustomed to the feed that has to be digested in the rumen. The rumen develops mainly through the starch in the calf rearing pellet (Berends, 2012). After the first week of life, farmers should start providing calf pellet. This is available at Alema Koudijs Feed PLC, the feed factory in Debre Zeit which is selling feed throughout the whole country.

To reduce the infection pressure and improve control of the calves, it is important that they are housed individually during the first two weeks at least. It is also important that a thick layer of straw is present so that the calf does not become dirty and can lie dry. With individual housing, each calf can be monitored optimally on health and nutrition. This is important for limiting the disease pressure (Hof, 2016). After two weeks, the calves can be housed in a group of calves with the same age. This gives the calves some movement space. Soft bedding must be present, such as straw. Research has shown that calves that are housed in a group after several days, will absorb more feed and thereby grow better and develop better social skills because calves stimulate each other in feed intake (Costa, 2016).

Adviser's message

The biggest problem of farmers is lack of knowledge about calf rearing. They copy their father's or neighbor's practice. They don't know and have never seen a good example. Therefore, it is important for the advisor to convey the knowledge easily and clearly. Ethiopian dairy farmers are still at the beginning and there is still a lot to be improved.

At first the basic needs feed and housing should be improved. This already is a big improvement. This ensures that calves have a chance to grow faster and thus can give birth earlier. As a result, the replacement rate of the adult cows can be increased and a more profitable dairy herd built up.

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