

Winter care and feeding of young animals

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In India, winter creates havoc for both human and animals. The season mostly lasts for about four months. Human can adjust according to the changing environmental conditions but animals' feed and shelter need to look after in an intensive system of farming. Due care of young animals is essential because of the breeding season and susceptible towards diseases during this period. About 32-35% mortality is noted between birth and 3 months of age in calves. Producers need to plan for shelter beforehand. Loss of young flock causes future monetary loss in a profitable herd. Regular deworming for both ecto and endoparasites are essential. Footrot and pneumonia are the major problems in winter with wet and cold temperature. In winter feeding depends on both feed availability and body condition scores of animals. Attention in winters for dairy calf and heifer management is of prime importance for maintaining growth rates, minimizing health problems, and optimizing the current and future profitability of the dairy farm.

Keywords: Feeding of animals, Severe winter, Young animal

Management in Severe Cold Weather

Heavy snowfall, cold breeze and frost in the North Indian region mainly in Kashmir and Himachal Pradesh are very well recorded. Necessary steps need to be taken in order to protect neonate-calf from such inclement weather as they are unable to maintain their body temperature in an open shelter. Chill wind negatively affects the health of young compared to dam or does, which can generate more body heat. Wind and precipitation together create a problem for young animals in maintaining body temperature. Heat lamps installed in the shed should not be in contact with the walls or bedding of animals. Extra bedding mainly consisting of dry and organic material like straw should be provided to young ones to keep them warm and dry as it

helps in reducing heat loss which is the major problem noted if inorganic bedding material like sand is used. Wet bedding also increases conductive heat loss. Deep bedding traps the warm air. When laying down, the calf's legs should be buried in the straw. Clean and dry blankets or jute gunny bags can be used to provide extra protection from

the cold for goat, calves and even horses. Beef cattle boost their heat production from the body by increasing basal metabolic rate and growing long hairs in winter. Moreover, cows have the natural instinct of standing together (huddling), protecting young ones from cold (Fig. 1).

In severe weather, animals like goats eat more than normal in order to maintain their body temperature. Good quality feeds like quality hay, grains (corn, barley, wheat, oats etc.) should be available to them so that their body condition can be maintained. A gradual changes should be done always in diet of the animal. Mineral mixture supplementation is essential to withstand stress conditions. Never skimp on the quality or quantity of feed provided



Fig. 1. Flock standing together to protect young calves from chill wind.

to the growing animals as it affects their growth.

If an animal suffers from cold, regularly supply the animal with lukewarm water to avoid any adverse effect on feed intake and nutrients utilization. Regularly check for foot-rot and hoof condition and care accordingly by trimming and treating.

In severe weather, animals crowd together for warmth. This activity may increase the chances of injury and respiratory diseases. Regularly monitor the animals and ensure appropriate shelter for each animal. Extra care is needed for weak and sick animals. Remove and replace bedding as needed for safer air quality and animal comfort.

The thermal neutral zone for a newborn calf is 50-78°F but it is also dependent on variables like wind, moisture, hair coat and bedding. By one month of age, the calf is able to tolerate colder and the thermal neutral zone expands to 32-78°F. Cold stress to young stock predisposes to diseases condition.

Feeding and Care of New Born Animal

Soon after the birth, clean the neonate and make the animal start breathing. The naval cord should be cut with sterilized scissors or blade and must apply tincture iodine/antiseptic on the naval cut region. Feed the animal with colostrum which is the mother's first milk, within 1-2 hours of birth. Colostrum being rich in immunoglobulins protects the young by increasing immunity. Moreover, colostrum is also rich in minerals and vitamins. Muonium, first faeces are expelled easily due to laxative nature of colostrum. Deworming the animal at 10 days of age is essential and again repeats it after 21 days. Generally, calf weigh 30 kg at birth, so 1.5 kg colostrum should be given in the morning and the same amount in the evening. If colostrum is not available, mix one egg in 300 ml warm water and add 600 ml milk and half teaspoon of castor oil. In the mixture add one spoon of fish liver oil and 80 milligrams of Oreomycin powder. After 15 days calf may be provided dry hay and concentrate. The

concentrate offered may be increased @ 50-100 g per week. At 3 month of age, animal is able to eat green fibrous feed. Extra teat if present in young, should be cut at the early stage. Normally, milk replacer or milk-fed from the 4th day is insufficient to meet the extra energy requirements of young calves in order to keep warm in extreme temperatures. When the temperature falls from 10 to -9.4°C, maintenance requirement increases by 44% and if temperature fall is up to -15°C, maintenance requirement increases by 55%. So, higher amount of milk or milk replacer needs to be offered. With the advancement of age, older calves are able to consume larger amount in order to fight cold. If the young animal falls sick, do not withhold their feed of milk/milk replacer, as energy obtained from milk helps the animal to fight illness. In addition, electrolytes that provide minerals, energy and protein should be fed to animals suffering from diarrhea after 2 hours of milk feeding because electrolytes may interfere with clot formation in the abomasum.

Feeding of Animals after 3 Months

As the rumen starts developing, the young one is able to consume more of the fibrous material which helps in getting energy required for maintenance, growth and withstand cold stress. Rumen gets fully developed by six month of age. Animals usually eat about 2.5% of body weight, so regular supply of high-quality forages like straw, available green along with concentrate needs to be offered. Mostly, roughages are preferred as they are safe, cheap and release more heat during the digestion process. If forage supplies are limited, concentrate quality and quantity needs to be altered. Grain feeding if accessible and affordable that can be offered in a small portion at frequent interval instead of feeding in a single instance as it can lead to acidosis. Reduced content of fibre in diet is well indicated by the fall of fat content in milk of lactating cow. Weak as well as cows in good/bad condition animals cannot tolerate the

cold. Weak cow body score needs to be improved by feeding good quality feed.

In winter, gradual change of feed is necessary as animal has to adjusted to new environmental temperature. The rumen microbes require time to adjust to a new feed. Cattle grow thick winter coat and increase body heat production to cope with colder temperature. This is usually accomplished by increasing heart rate and respiration thereby increasing blood flow to body extremities. In relative comfort zone, about 20% extra feed intake is usually noticed to withstand cold stress. In case of thin cows, first estrous after calving appear 20 days later compared to normal healthy cow. First service conception rates are also about 20% less for thin cows with more complications during calving. When such animals breed in future, they face more problems during the breeding season. Colostrum produced from such weak animals is also inferior in quality and quantity and young ones born have weak immunity and are more susceptible to different infections.

Common Problems in Winter Season

Calf scour/diarrhea: It usually occurs due to excessive milk feeding, worm infestation and other infections in stomach. Soon after birth, the calf should be fed colostrum about 1/10th of body weight of calf. Skipping this may leads to severe calf mortality at an early age. Antibiotic and antibacterial medicines need to be given orally or injected for recovery from this problem. In dehydration, electrolyte needs to supply to cater the electrolyte balance of the body. Periodic faecal examination is necessary. Coccidiostat feeding is essential if problem of coccidiosis occurs and blood starts appearing in faeces. Diarrhea may also take place due to catching of cold, so protect young animals from the winter chill.

Pneumonia: It leads to fever and respiratory problems due to inadequate or excessive air exchange in young animals which in later stages can cause death in animals if timely treatment is not done. Poor ventilation in building is the main

cause of pneumonia and other breathing problems. The high humidity is the main cause of the decrease in insulating capacity of cow's coat.

Salmonellosis: Bloody diarrhea with fever is symptom of this problem. Antibiotic and antibacterial medicines are needed for treatment.

Foot and mouth disease: Rarely noted in young but if infection occurs, it mainly affects heart causing death. High fever along with soars in mouth and foot are noted. Adequate precautions help in preventing secondary infections. Washing of shelter should be done by 0.1% potassium permanganate solution and apply boroglycerine on the wounds. Feet should be washed with phenyl solution. Separate diseased animals from healthy animals. Vaccination should be done at 1 month, 3 month and 6 month of age and repeated at every 6 months interval.

General Precautions Needed to Care for Animals in Winter Season

- If milk replacer is used for feeding it should contain at least 20% fat. The solid content of liquid from milk replacer should be increased from 12.5 to 16.0%.
- Number of feedings should be increased and the same amount should be fed each time. Maintenance requirement of animal increases if animal becomes wet or there is cold wind. The lowest critical environmental temperature for livestock is about 32°F while for wet animal it is 60°F. Energy requirement of animal with healthy and dry coat increases by 1.0% per degree drop of wind chill temperature while for animal with the wet coat it is 2.0%.
- Hypothermia is a major problem encountered in neonatal, so housing, feeding and hydration of animal needs to be taken care. Provide lukewarm feed and water to drink. Milking animals need to be fed mixture of oilcakes and jaggery as it helps in preventing colic and impaction. In cold, wild birds should be provided a blend of seeds which include sunflower seeds to provide high calories.
- Housing/shelter should be located in well-drained areas. Usually, indoor feeding is not advised but care is required while doing so due to the smell of ammonia. Outdoor feeding is perfectly comfortable and cleaner activity. If culling is possible, remove unproductive animals as such animals will unnecessarily increase the feed of farm cost.
- Stress alleviating activities like vaccination and dehorning should be minimized.
- Piperazine needs to be given for deworming on regular basis. Ectoparasites can be prevented by keeping animal shed clean. Feeds like lemongrass, basil and nirgundi can be hung in sheds to keep off ecto-parasites. Usually, neem oil based disinfectants are of great use. Anti-parasitical drugs help in increasing health and productivity at farm.
- Naval infection needs to be checked due to maggots or other causes. Application of any antiseptic cream is essential.
- High moisture rations get chilled in feed bunks and are the cause of reduced feed intake which also requires more energy in winters. Feeding time of animal should not be disturbed.
- Feed, mainly fodder like perennial grasses should be collected and stored properly. Green fodder should be given in limited quantity as it promotes diarrhea.
- Vaccination against diseases like foot and mouth disease, peste des petits ruminants (PPR) also known as 'goat plague', is a viral disease of goats and sheep, haemorrhagic septicaemia, enterotoxemia, and black quarter needs to be done on time since in the winter infections mostly effect the kids and lambs.
- Precaution is required for prevention of mastitis in animals. After milking, animal udder should be washed with disinfectants
- After shearing sheep, drenching with disinfectants is done after 21 days in order to provide protection from ecto-parasites.
- If frost is there, adequate arrangement should be made for artificial lighting and heating. Weak and sick animal should be protected with sack clothes or jute gunny bags and at night, all animals should be provided covered shelter. Pet animals like dog and cat need to be provided with coat or warm sweater. Damp areas should be avoided and protect animals from smoke as together these conditions can lead to pneumonia.
- Fodder crops like lucerne and berseem needs irrigation to be carried out at 25 days interval while for oats it is 21 for supplying regularly green fodder for animal.

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