

## Popular Article

## Care of Pregnant Animals

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### Care of Pregnant Animals

- Adequate health care and nutrition can ensure rapid growth of female calf as well as attaining puberty at an early age. Timely insemination of such animals can help them to calve at 2 to 2 ½ years of age.
- As foetus develops rapidly during last 3 months of pregnancy, adequate care needs to be taken during this time.

### Recommendation

- Animals in the last trimester of pregnancy should not be taken far away for grazing, uneven paths should also be avoided.
- A lactating animal should be dried within a period of 15 days after the 7th month of gestation.
- Pregnant animals should have enough space for standing and sitting comfortably.
- Pregnant animals need suitable ration to reduce the possibility of diseases like milk fever and ketosis at the time of calving and also to ensure adequate milk production.
- Water should be provided round the clock to pregnant animals with a minimum of 75-80 litres of fresh and clean drinking water daily.
- A heifer after 6-7 months of gestation should be tied with milking animals; and its body, back and udder should be massaged.
- 4-5 days before calving, the animal should be tied in a separate clean and airy area having sunlight. Bedding materials like paddy straw should be spread on the ground.

### Daily Feed Requirements of a Pregnant Animal

Even though the Parturition is a normal physiological process, it requires to take due care at all stages of Parturition by manager of the herd.

## **Before Parturition**

- **Turning cow into a loose box:** To isolate from other animals, animal of advance pregnancy must be separated into calving box which must be cleaned and properly disinfected, bedded with clean, soft & absorbent litter.
- **Guarding Against Milk Fever**
  - In advanced pregnancy stage high yielding & first calves are susceptible to Milk fever.
  - To avoid it, provide enough minerals especially calcium by bone meal in daily diet.
  - Give large doses of Vitamin D about a week period to calving.
- **Avoid Milking:** Prior to parturition this is likely to delay parturition by few hours.
- **Watch for parturition signs:** Signs to know primary stage of parturition which are udder become large and distended, depressed or hollow appearance on either side of tail head, vulva enlarged in size, thick mucus discharge from vulva, and uneasiness of the animal.

## **During Parturition**

1. Identify pregnant-after A.I.-90 days
2. Provide gentle treatment
3. First quarter of gestation period are critical
4. In early stages of pregnancy disturbances can cause abortion.
5. Provide concentrate feed 3.5 kg per day.
6. Provide 25 – 35 Kg. Greed fodder per day and 5 Kg. Paddy straw.
7. Minimum 45 – 60 days of dry period is essential.
8. Avoid long distance travel.
9. Avoid slippery condition in the shed.
10. Avoid chasing by dogs, bulls or children.
11. Avoid infighting between pregnant animals.
12. Separate pregnant animals from recently aborted animals or carriers of diseases like brucellosis.
13. Provide adequate clean drinking water
14. Protect against extremes of climate.

## **Feeding Dry Cows**

A cow's body condition at drying-off should be close to that desired at calving. Adequate body energy and nutrient reserves are required to attain and hold top production during early lactation. Cows in poor body condition will drop off in milk production and are difficult to get bred. The late lactation

is more efficient in restoring reserves than the dry period. The desired body condition in dry cows (3+ to 4 score) is where the chine and loin areas are rounded and continue into the rump. The back should begin to show some fat deposition. The hips and pins are round. Some fat should be deposited around the tailhead and pin bones. For more information, see VCE Publication 404-104, Body condition scores for evaluation of nutritional status, 1990.

Dry cows should be fed a specific ration balanced to meet nutrient requirements of dry cows. The ration dry matter should contain 10-12% crude protein, 60% TDN, at least 33% acid detergent fiber, 2.6-3.2 g calcium per lb. (60-80 g per day total), and 1.4 g phosphorus per lb. (30-40 g per day total). Corn silage should be limited to 30 lb. per day for 1500 lb. cows. Feed at least 10 lb. hay, preferably grass hay or grass-legume mix. Do not feed legume alone, as it contains excessive protein and calcium. Examples of dry cow rations are shown in Table 1. Amounts are expressed per 100 lb. body weight. Take the average body weight and divide by 100. Multiply this factor by the suggested amount of feed. For example, the factor would be 15 for dry cows averaging 1500 lb. (factor = 1500/100 = 15). Ration C would provide 30 lb. silage, 10 lb. hay, 1 lb. corn, and 2.25 oz of each mineral per cow daily.

<b>Table 1. Feeding Guidelines for Dry Cows at Different Body Weights Example</b>			
<b>Feeding Programs</b>			
Feedstuffs	Example Feeding Programs		
	A	B	C
	lb. per 100 lb. body wt		
Grass Hay	2.0	0.67	---
Alfalfa Hay	---	---	0.67
Corn Silage	---	2.0	2.0
Shelled Corn	---	0.13	0.06
Soybean Meal	---	0.067	---
Dicalcium Phosphate	---	0.1 oz	0.15 oz
Limestone	0.1 oz	0.2 oz	0.15 oz

A good quality bluegrass-clover pasture is excellent for dry cows. Such a pasture probably needs no supplementation. Clover and bluegrass contain considerable amounts of vitamins A and E. Stored forages lose vitamin levels with time. The dry cow ration should provide 40,000 I.U. vitamin A, 20,000 I.U. vitamin D, and 1,000 I.U. vitamin E daily if cows are not injected at drying off or if fresh forage is not provided. **Rotational grazing** of such pasture would provide excellent feed to both

dry cows and bred heifers, especially since both groups often need additional attention. Rotational grazing would have an advantage over continuous permanent pasture which is usually low quality. Groups of animals would need to be rotated every 3 to 7 days, depending upon pasture quality, growing conditions, and numbers of animals. Several types of pastures could be included in the rotation, such as cool season grasses, legume-grass mix, and sorghum-sudan for summer months. Small amounts of hay (3-4 lb.) should be available to prevent bloat.

### **Two Weeks Before Calving (Transition period)**

**Isolate cows due to calve** from other dry cows and the milking herd. A small pasture beside the barn or near the center of activity is ideal. Feed provides nutrients to the cow, the calf, and to the microbial population within the cow's rumen. Rumen microorganisms require adaptation to changes in the ration. A dramatic change after calving from a high forage, high fiber ration to a high concentrate, low fiber ration can throw cows off-feed or result in ketosis or acidosis. The cow must be conditioned so that she can consume large amounts of carbohydrates and proteins after calving. Starches in concentrates are rapidly converted to short-chain acids. Microbes that utilize these acids are slow to develop. The cow spends less time chewing her cud, and therefore reduces the amount of saliva that is added to the rumen to buffer the increase in acid production. A similar phenomenon occurs when finely ground or chopped feeds are consumed.

The energy density necessary in a dry cow ration increases from .57 Mcal/lb. at 21 days to .66 Mcal/lb. at 7-10 days before calving to .88 Mcal/lb. during the last three days<sup>1</sup>. During this period, it is important to feed sufficient fiber or bulk to maintain a healthy rumen and keep it distended, while boosting energy intake or non fiber carbohydrates (NFC or starch) to increase production of propionic acid. This acid would stimulate growth and development of rumen papillae so that acidosis is unlikely and send a signal so that the cow mobilizes less body fat which may reduce fatty liver or ketosis. Too little fiber may lead to acidosis. The diet should be more energy dense than the typical dry cow ration containing .57 Mcal/lb. A diet containing .88 Mcal/lb. is not practical. A transition diet of .70-.72 Mcal/lb. was recommended, with NFC between 35-40% of dry matter and neutral detergent fiber (NDF) at 32% or above. The amount of concentrate should be limited to 7-8 lb. per cow daily, preferably fed in a total mixed ration. If transition cows cannot be grouped separately from other dry cows and fed this ration, the transition diet should be fed to all dry cows.

At 2-3 weeks before expected calving, offer limited amounts of corn (35-40 lb.) or hay crop silage (30-35 lb.) and provide at least 10 lb. hay. Introduce the milking herd concentrate but restrict the amount to 4-8 lb. per day. Hold the amount constant until after calving. This ration would approximate 25-29% acid detergent fiber, 42% NDF, and 35-40% NFC. Avoid free-choice salt or protein

supplement, forages with over 3% potassium, and buffers. Very little is known regarding the cause of udder edema, but excessive salt, energy, or protein intakes may contribute.

### **After calving**

Keep milk from fresh cows out of the bulk tank for at least three days. Remove calves from cows and feed colostrum by hand to insure adequate intake. "Hand walk" cows through parlor for milking. After 3-5 days, feed the milking herd ration. If milking cows are grouped, do not put fresh cows into the high group for two weeks after calving. When concentrate is offered at milking, increase the amounts gradually (2 lb. increments). If cows do not receive corn silage until after calving, consider adding sodium bicarbonate to the ration to buffer the dramatic change in feeds. Microorganisms in the cow's rumen are slow to adjust to ration changes, thus drastic changes in the feeding program result in detrimental effects on this microbial population.

### **Vitamin E and Selenium**

Supplementation of the diet with vitamin E and selenium has reduced mastitis. Selenium injections (4.5 mg/100 lb. body weight) may be given at 21 days before expected calving and the ration of bred heifers supplemented with vitamin E. Together these practices have reduced mastitis in early lactation more than either practice alone (Hogan et al., 1993). The effect of vitamin E on clinical mastitis was more pronounced for first lactation than older cows (Weiss et al., 1997). Vitamin E levels of at least 1,000 IU/day during the dry period and 500 IU/d during lactation were more beneficial than National Research Council's recommended 100 IU/d. Selenium was added to the ration to provide 0.1 ppm, which resulted in plasma selenium levels lower than accepted as adequate. Selenium also may be added to dry cow and milking herd rations (3 and 6 mg/head daily, respectively). Vitamin E and selenium also reduced retained placenta, metritis, and cystic ovaries.

### **Calving areas must be clean and dry**

They should be cleaned and sanitized after 1-2 calving's, with one box stall per 15-20 cows and bedded with straw, shavings or sand. Organic materials, e.g., straw, sawdust, and shavings, as bedding have been associated with an increase in environmental mastitis. Sand does not support bacterial growth but could be a problem with liquid manure systems. When cows are confined to freestall barns, adequate dry bedding should be provided to keep freestalls and pens clean, dry, and comfortable. Free stalls should be properly designed and maintained. Daily removal of wet and soiled bedding is recommended.

For herds with a high incidence of mastitis at calving, or high average SCC at first DHI test among first lactation cows, either prepartum milking or prepartum antibiotic therapy may have

considerable merit.

### **Lactating Cow Treatment to Bred Heifers**

In Tennessee, several studies administered a lactating cow antibiotic treatment containing either cloxacillin or cephalixin at 7 days before expected calving in heifers (Oliver et al., 1992). In a subsequent study, cephalixin was given at 14 days before calving. Treatment of pregnant heifers at 14 days prior to expected parturition with cephalixin lactation therapy gave greatest reduction in intramammary infections, with greater milk production and little risk of antibiotic residue in milk at 3 days after calving unless heifers calved shortly after treatment. Use treatment precautions indicated under Dry Cow Therapy. If antibiotic treatment is used, remember to follow label withholding recommendations for discarding milk. It is recommended that treated animals should be tested with an antibiotic residue test at 3-5 days after calving and milk discarded until it tests negative.

### **Prepartum Milking**

Incidence of mastitis infections after calving was reduced in seven New York dairy herds when heifers were first milked 14 days before calving. Milk yield was unaffected. Two years later, four herds had continued prepartum milking of heifers because of easier adaptation to milking. The April 25, 1997, issue of HOARD'S DAIRYMAN described a New York dairy farm where 2-year-old heifers were milked a minimum of 2 weeks prior to calving, preferably 4-6 weeks (Wilson, 1997). The practice acclimated heifers to the milking environment and cut down on congestion and soreness. Heifers were put in the holding area for 1-2 days before being brought through the parlor. After several days of coming through the parlor, teats are wiped. After a couple more days, milking machines were attached. This practice may be considered for herds with mastitis problems at calving; however, heifers will secrete no colostrum at calving. Thus, new-born calves will need frozen colostrum, preferably first colostrum from older cows, to acquire needed immunoglobulins against disease. In Michigan dairy herds, 30% of drug residue violations during 1996 were related to dry cow therapy. The causes included: (1) Dry cows housed with lactating cows and milked accidentally, 15; (2) Milk from fresh cows not withheld sufficient time, 11; (3) Dry cows in separate lot but escaped to milking lot, 8; and (4) Lactating cows accidentally dry treated but milked, 6. To reduce the risk of antibiotic residues because of treatment during the dry period: dry cows and fresh cows should be separated from the milking herd; dry treated cows should be marked differently from treated lactating cows; milkers should understand different markings and have access to treatment records: milkers should be trained to detect cows with udder edema and the potential risk; and cows receiving any extra-label treatment should be tested with a screening test before their milk is added to the bulk tank.

## **Conclusions**

The management of dry cows needs as much planning and attention as that of milking cows. Certain precautions are necessary at drying off and around calving. Neglecting facilities, environment, and feeding can dramatically influence the long-term success in a herd.

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