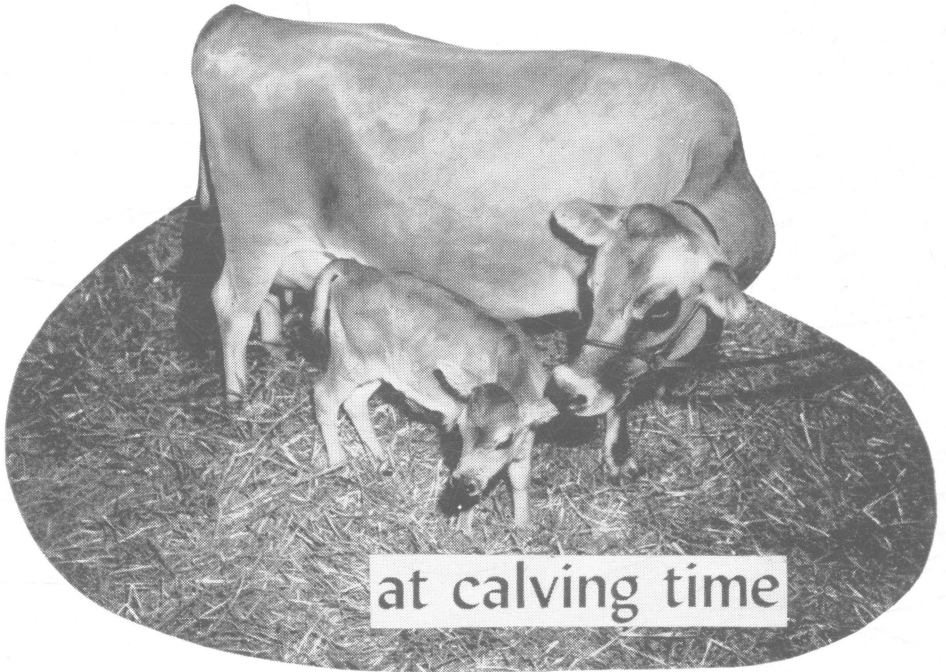


April, 1957

Bulletin 358

*care of the*

# Cow and Calf



at calving time

Agricultural Extension Service  
The Ohio State University

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A keen sense of observation and alertness are two of the prerequisites for success in dairying. These qualities, plus experience and sound judgement, are of utmost importance at calving time. The purpose of this bulletin is to direct attention to and briefly discuss some of the problems which may develop.

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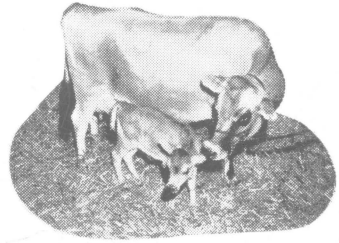
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# Cow and Calf

## at calving time



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Extra care and attention given the cow and her calf at calving time will help insure success and provide large dividends for the dairyman. Difficulties which occur after calving are frequently due to faulty management or neglect at this critical time.

What special feed and care should be given a dairy cow at calving time? The answer to this question resolves itself into 3 phases: (1) preparation for calving (2) care at calving time and (3) care of the cow and calf after calving.

## Preparation for Calving

### Dry Periods

High producing dairy cows usually require a 6 to 8-week dry period after each lactation, so they can rebuild their body reserve. Unless a cow has dry periods of sufficient length, her total lifetime production will be reduced.

The amount of concentrates or grain mixture required by the cow during the dry period is determined both by her condition and by the quantity and quality of roughage she is fed. The successful herdsman, by proper feeding, plans to have his cows in good condition when they begin their next lactation.

The better producing cows sometimes have short dry periods because they are persistent producers or are difficult to dry off. However, such cows can usually be dried off promptly by using proper methods, and their production will increase in the following lactation. When a persistent cow is to be dried off, discontinue feeding grain and feed only a non-legume hay. Feeding either legume roughage or succulent feeds, such as silage or pasture, tends to stimulate milk secretion.

### **Stopping the Milk Flow**

In extreme cases, the amount of water the cow is allowed may be reduced. When the feed intake has been reduced, simply stop milking. The pressure within the udder will cause the rate of synthesis, or secretion of milk, to decrease gradually. Usually within 36 to 48 hours milk secretion will have stopped completely.

If the pressure within the udder is not reduced by milking, the milk-secreting cells become dormant, and the milk is reabsorbed into the blood stream within a few days. After this, the small amount of milk remaining in the gland cistern in the lower portion of the udder may be withdrawn, so the dry udder will completely collapse. Complete the drying-off process as quickly as possible, so liberal feeding of the cow may be resumed.

### **Mastitis Control**

This method of drying off a cow requires courage and careful observation—courage to resist milking the cow when the udder becomes filled and distended, careful observation to detect the occasional attack of mastitis which may occur. The likelihood of udder infection at this time is much greater for those cows which previously have had mastitis.

If this difficulty develops, the herdsman should remove all milk from the infected quarters and follow recommended methods of treatment.

## **Care at Calving Time**

### **Isolation for Herd Health**

To protect herd health, isolate the cow from the balance of the herd and return her to the herd only after discharge from the reproductive tract has ceased. Placental membranes and the discharge which occurs after calving can spread infections such as brucellosis.

An adequately bedded box stall which has a concrete floor is ideal for this purpose. Following each use, clean and disinfect this stall. During the summer months, a small pasture lot may advantageously be used instead of the indoor maternity stall.

### **Predicting Date of Calving**

Predicting the exact day of calving is difficult. However, knowing the approximate freshening date is helpful in deciding when the dry period should begin. This information is useful, too, in deciding

when to watch for signs of calving so the cow can be placed in a maternity stall.

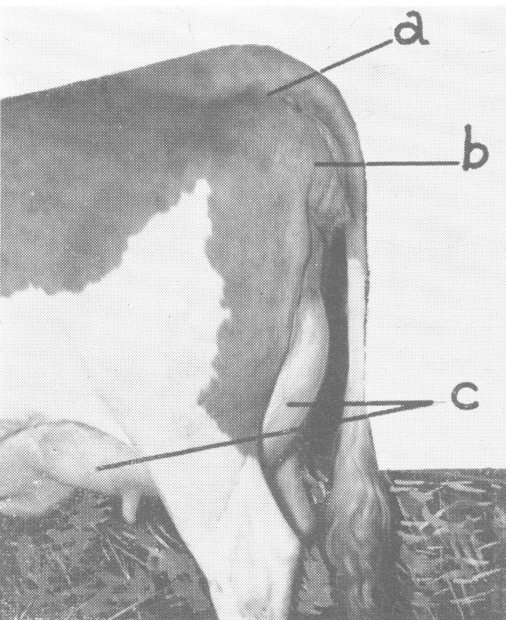
Accuracy in predicting this date is of major importance, if the herdsman uses the milk fever prevention treatment developed by Drs. Hibbs and Pouden at the Ohio Agricultural Experiment Station. This treatment consists of feeding large doses of vitamin D for 5 to 7, but not more than 7, days just prior to calving.

An analysis of the records on the Ohio State University dairy herd and herds at other colleges and experiment stations reveals information useful in predicting when a cow will freshen.

### Duration of Pregnancy Varies

Researchers have found that dairy breeds differ in the length of time calves are carried, and young cows calve earlier than mature cows. On the average, Brown Swiss calves were carried 7 days longer than Guernseys and 11 days longer than Ayrshires, Holsteins or Jerseys.

The average duration of pregnancy was 290 days for Brown Swiss, 283 days for Guernseys and 279 days for the other 3 breeds. These breed differences have been recognized by the American Dairy Science Association and accepted by most of the dairy cattle breed associations.



A depression between the tail-head and pinbones (a), the enlarged vulva (b) and the distended udder (c) indicate calving date is near.

## Gestation Table for Dairy Cows

| Service Date |        | Date Due                                   |                      |                         | Service Date |         | Date Due                                   |                      |                         |
|--------------|--------|--|----------------------|-------------------------|--------------|---------|--|----------------------|-------------------------|
|              |        | Ayrshire, Holstein, and Jersey<br>279 days | Guernsey<br>283 days | Brown Swiss<br>290 days |              |         | Ayrshire, Holstein, and Jersey<br>279 days | Guernsey<br>283 days | Brown Swiss<br>290 days |
| ♀            | Jan. 1 | Oct. 7                                     | Oct. 11              | Oct. 18                 | July 1       | April 6 | April 10                                   | April 17             |                         |
|              | 5      | 11   | 15                   | 22                      | 5            | 10      | 14   | 21                   |                         |
|              | 10     | 16   | 20                   | 27                      | 10           | 15      | 19   | 26                   |                         |
|              | 15     | 21   | 25                   | Nov. 1                  | 15           | 20      | 24   | May 1                |                         |
|              | 20     | 26   | 30                   | 6                       | 20           | 25      | 29   | 6                    |                         |
|              | 25     | 31   | Nov. 4               | 11                      | 25           | 30      | May 4                                      | 11                   |                         |
|              | 31     | Nov. 6                                     | 10                   | 17                      | 31           | May 6   | 10   | 17                   |                         |
| Feb.         | 1      | 7  | 11                   | 18                      | Aug. 1       | 7       | 11   | 18                   |                         |
|              | 5      | 11   | 15                   | 22                      | 5            | 11      | 15   | 22                   |                         |
|              | 10     | 16   | 20                   | 27                      | 10           | 16      | 20   | 27                   |                         |
|              | 15     | 21   | 25                   | Dec. 2                  | 15           | 21      | 25   | June 1               |                         |
|              | 20     | 26   | 30                   | 7                       | 20           | 26      | 30   | 6                    |                         |
|              | 25     | Dec. 1                                     | Dec. 5               | 12                      | 25           | 31      | June 4                                     | 11                   |                         |
|              | 28     | 4  | 8                    | 15                      | 31           | June 6  | 10   | 17                   |                         |
| Mar.         | 1      | 5  | 9                    | 16                      | Sept. 1      | 7       | 11   | 18                   |                         |
|              | 5      | 9  | 13                   | 20                      | 5            | 11      | 15   | 22                   |                         |
|              | 10     | 14   | 18                   | 25                      | 10           | 16      | 20   | 27                   |                         |
|              | 15     | 19   | 23                   | 30                      | 15           | 21      | 25   | July 2               |                         |
|              | 20     | 24   | 28                   | Jan. 4                  | 20           | 26      | 30   | 7                    |                         |
|              | 25     | 29   | Jan. 2               | 9                       | 25           | July 1  | July 5                                     | 12                   |                         |
|              | 31     | Jan. 4                                     | 8                    | 15                      | 30           | 6       | 10   | 17                   |                         |

|   |                |         |         |         |  |               |         |         |         |
|---|----------------|---------|---------|---------|--|---------------|---------|---------|---------|
|   | 31             | Jan. 4  | 8       | 15      |  | 30            | 6       | 10      | 17      |
|   | <b>April</b> 1 | 5       | 9       | 16      |  | <b>Oct.</b> 1 | 7       | 11      | 18      |
|   | 5              | 9       | 13      | 20      |  | 5             | 11      | 15      | 22      |
|   | 10             | 14      | 18      | 25      |  | 10            | 16      | 20      | 27      |
|   | 15             | 19      | 23      | 30      |  | 15            | 21      | 25      | Aug. 1  |
|   | 20             | 24      | 28      | Feb. 4  |  | 20            | 26      | 30      | 6       |
|   | 25             | 29      | Feb. 2  | 9       |  | 25            | 31      | Aug. 4  | 11      |
|   | 30             | Feb. 3  | 7       | 14      |  | 31            | Aug. 6  | 10      | 17      |
|   | <b>May</b> 1   | 4       | 8       | 15      |  | <b>Nov.</b> 1 | 7       | 11      | 18      |
|   | 5              | 8       | 12      | 19      |  | 5             | 11      | 15      | 22      |
|   | 10             | 13      | 17      | 24      |  | 10            | 16      | 20      | 27      |
|   | 15             | 18      | 22      | Mar. 1  |  | 15            | 21      | 25      | Sept. 1 |
|   | 20             | 23      | 27      | 6       |  | 20            | 26      | 30      | 6       |
| 7 | 25             | 28      | Mar. 4  | 11      |  | 25            | 31      | Sept. 4 | 11      |
|   | 31             | Mar. 6  | 10      | 17      |  | 30            | Sept. 5 | 9       | 16      |
|   | <b>June</b> 1  | 7       | 11      | 18      |  | <b>Dec.</b> 1 | 6       | 10      | 17      |
|   | 5              | 11      | 15      | 22      |  | 5             | 10      | 14      | 21      |
|   | 10             | 16      | 20      | 27      |  | 10            | 15      | 19      | 26      |
|   | 15             | 21      | 25      | April 1 |  | 15            | 20      | 24      | Oct. 1  |
|   | 20             | 26      | 30      | 6       |  | 20            | 25      | 29      | 6       |
|   | 25             | 31      | April 4 | 11      |  | 25            | 30      | Oct. 4  | 11      |
|   | 30             | April 5 | 9       | 16      |  | 31            | Oct. 6  | 10      | 17      |

For Ayrshire, Holstein and Jersey cows due to calve during leap year between Feb. 28 and Dec. 4 subtract one day from the above date due. For Guernsey and Brown Swiss cows due to calve during leap year use the dates Dec. 8 and Dec. 15, respectively, instead of Dec. 4.

The above breed differences represent the average of thousands of cows in the various breeds and are useful for prediction purposes. The gestation table in this bulletin is, therefore, more accurate than gestation tables based on 282 or 283 days, the average for all the breeds. Predicting the exact date of calving, even after considering breed differences, is far from a safe bet. Actually, only about two-thirds of the cows will calve within 5 days of the date on the gestation table and about 95 percent within 10 days.

Two-year-old cows usually freshen about 2 days earlier than mature cows. For 3-year-old cows, deduct one day from the date in the gestation table. The sire also influences the length of time his calves are carried. When the sire and the cow, to which he is bred, are of breeds with different gestation lengths, the best estimate of the calving date is the average for the 2 breeds.

### **Records Help Tell Date**

The length of time a cow has carried her previous calves can likewise help in calculating when she is due to calve. If information is available concerning 3 or more pregnancies, an adjustment can be made to the extent of one-third of the difference between her average and the breed average. For example, if a cow's average for 3 gestations is 6 days less than the breed average, she will probably carry her future calves 2 days less than the breed average.

Similarly, after a bull has sired 10 or more calves, the average length of time his calves have been carried can be used in freshening date predictions. This adjustment, like that for individual cow differences, can consist of one-third the difference between the breed average and the time his calves were carried.

### **Sex Affects Pregnancy Length**

The sex of the calf and the birth of twins affect the duration of pregnancy, but these factors obviously are of no value when predicting calving dates. The common opinion that male calves are carried longer than females has been found true; however they average only about one day longer. Twins are usually born 4 or 5 days earlier than single births.

Post-conception services can cause perplexing situations. Such services occur when pregnant cows have heat periods. Heat periods during pregnancy are abnormal and are sometimes referred to as false heat. Records on the Ohio State University dairy herd and on

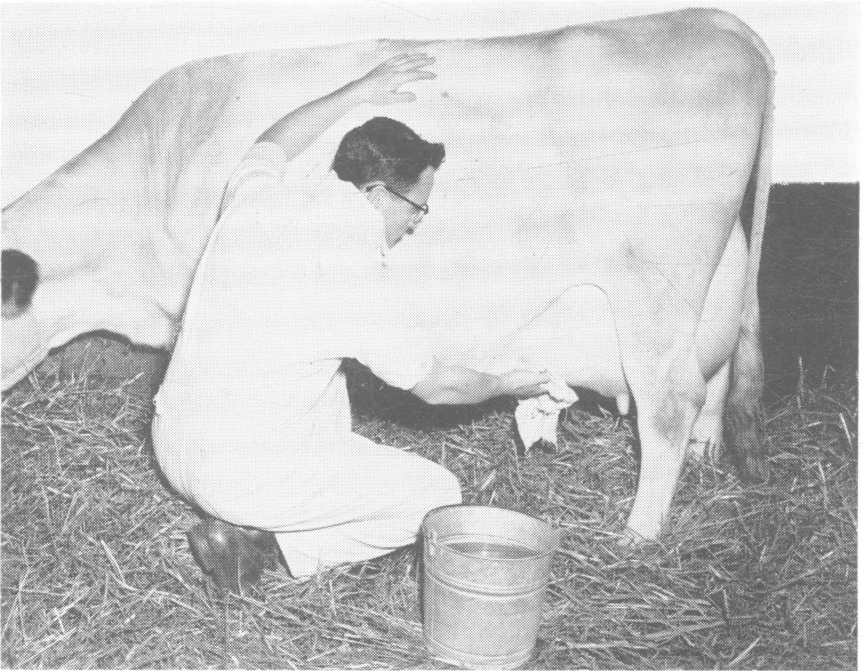


other herds indicate that heat periods occur sometimes during the first few months of at least 5 percent of the pregnancies. Freshening dates cannot, therefore, be predicted with certainty; still the above suggestions will help to reduce the error.

As the date of calving approaches, definite external signs of calving usually become apparent. The vulva, or external genitalia, becomes enlarged, and deep depressions develop between the tailhead and pin bones. The udder not only becomes distended, but the teats usually fill with milk a day or so before the calf is born.

### Feeding at Calving Time

How a cow should be fed just prior to and immediately following calving is a question for which the answers are not in full agreement. The general practice of drastically reducing the amount of grain mixture fed is not supported by experimental evidence either from the standpoint of ease of calving and discharge of the placental membranes or of preventing udder congestion. Feeding from 4 to 10 pounds daily of the dairy herd ration will usually be satisfactory if the cow is kept in a slightly laxative condition.



Massaging the congested udder and bathing it with warm water stimulates the flow of lymph, thereby reducing congestion.

### **Prepartum Milking**

Another frequent question, during the last few days before calving, is whether or not the milk should be removed from an overly distended udder. Milking before calving is known as prepartum milking. This practice reduces, at least temporarily, the pressure within the udder and the weight of the udder. Prepartum milking of large or greatly distended udders may delay the time when the supporting ligaments become weakened and thereby permit the udder to settle away from the body wall.

A disadvantage of this practice is that no colostrum is produced after calving. Nevertheless, colostrum produced by other cows can be preserved by freezing and fed to calves whose dams have been milked prepartum.

When the time of calving arrives and the cow has been placed in suitable quarters, she should not be disturbed or excited. Assistance should be given only after labor has failed to produce the calf and only by a competent person. The removal of any mucous that may be present in the calf's mouth or nostrils is advisable, if the herdsman can be present when the calf is born.

### **Preventing Navel Infection**

The herdsman should either permit the cow to lick her new-born calf or give the calf a brisk rubdown to hasten drying. The new-born calf's navel can serve as an entrance for bacteria into the body. As a safeguard against this type of infection, commonly referred to as navel ill, the navel should be disinfected by dipping it into an iodine solution. This practice is particularly important when it has not been possible to effectively disinfect the maternity stall.

When the placenta or afterbirth has been passed, it should be removed promptly and buried or destroyed so other cattle will have no contact with it. Considerable difference of opinion exists concerning the time to remove a retained placenta. However, if the placenta has not been passed within 12 to 24 hours after calving, it is then time to consider providing assistance. Since injury frequently results in permanent sterility and the eventual loss of the cow, a properly trained person should perform this task.



The new born calf needs colostrum soon after birth to provide nutrition and resistance against infection.

## Care of the Cow and Calf after Calving

### Milk Fever

If milk fever develops, it is most likely to occur just prior to or within the first day or 2 after calving. Paralysis is the most readily observed symptom of this metabolic disturbance. The cow often lies with her head turned to one side and her muzzle pointing toward her flank. A period during which the cow is ill at ease normally precedes this final stage of milk fever. The cow's eyes are dull and her gait may be unsteady. A low calcium level in the blood is believed responsible for the paralysis.

Milk fever usually responds readily to the administration of a calcium-sugar solution directly into the circulatory system. The success of this treatment depends largely upon close observations by the herdsman, so treatment can be made promptly.

### “Caked” Udders

Congested or “caked” udders sometimes develop at calving time. This condition is due chiefly to an abnormally large accumulation of lymph, body fluid, in the udder. Frequent bathing of the udder with warm water and repeated massage tend to stimulate the flow of lymph and to remedy the situation.

Calf losses, which frequently range from 1 to over 20 percent of the calf crop, illustrate the importance of care for new-born calves. Losses in excess of 10 percent not only constitute a serious economic loss but dishearten the herdsman when calves intended for herd replacements die. Calf scours and/or pneumonia occurring during the first few weeks after birth take the heaviest toll. The importance of colostrum for the new-born calf cannot be overemphasized, because it is an unexcelled source of both vitamin A and antibodies which aid the calf in resisting these as well as other infections.

### **Overfeeding Dangers**

Overfeeding damages the health of young calves more frequently than underfeeding. A good guide for feeding whole milk to young calves is one pound of milk daily for each 10 pounds of body weight. Regularity in respect to feeding time and a minimum variation in the amount and temperature of the milk fed are also important in successful calf raising.

The age at which the calf is to be separated from the dam depends largely upon the discretion of the herdsman. Generally, the earlier the calf is weaned the less effort required to teach him to drink from a pail.

Calves of lower vitality will often gain more rapidly and have a better chance of survival when they are left with their dam for a few days. Advantages are that the calf has the opportunity for more frequent feeding, the milk is at the proper temperature and the possibility of contaminated or unclean feeding pails is eliminated.

On the other hand, the longer the calf remains with his dam the more difficulty she will have eventually in adjusting herself to the loss of the calf and the greater the possibility of injury to her teats.

### **Housing the Calf**

Elaborate quarters for housing calves do not insure success. The more important aspects of good housing for calves include maintaining dry bedding at all times, protection from drafts and proper ventilation. Under practical conditions the temperature of the quarters is of minor importance.

After calving, the cow's reproductive tract usually requires about 2 months to return to normal and be in condition for another pregnancy. For this reason cows should not be bred earlier than 60 days after calving.