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Dairy Update

THE DRY OFF PROCEDURE IS IMPORTANT TO
MAINTAINING MASTITIS FREE COWS.

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Many dairymen treat the dry period as the end of the lactation. The dry period was once considered a time for cows to rest, gain weight and "stand still" while turned out with the heifers and fed whatever was available. In reality, the dry period is the beginning of the next lactation.

More attention is being given to the dry cow program due to an increased incidence of the fat cow syndrome, higher levels of milk production, and more herd health problems associated with the dry period. A sound dry cow program and controlled transition to the milking ration can represent an extra 500 to 3,000 lb. milk per cow lactation.

The sanitary conditions under which dry cows and heifers are kept is a major factor in the cause of early lactation mastitis. However, poor dry off management may also result in mastitis problems. With today's trend toward higher production, it is common for many cows in high production herds to be producing 40-50 lbs. per day at dry off. This high level of production not only makes it more stressful for the cow but also more difficult for the dairy farmer. Careful attention to detail and good herd management are needed during this critical period to avoid problems.

When milking is stopped for 18 hrs. or more, milk flow will be reduced. This cessation of milk secretion is largely due to the effect of intramammary pressure on the milk secreting cells. There are two generally recognized methods of drying off cows: once-a-day milking for several days, or the abrupt cessation of milking. Researchers in the 1950's found no difference in the incidence of new infections when either system was used. However, later research revealed that high producing cows had higher new infection rates at dry off, particularly when the abrupt method was used and no dry cow treatment was employed. New York studies revealed that as long as dry cow treatment was used in all quarters at dry off, either drying off method worked satisfactorily.

Dry cow treatment is intended to remove existing infection and prevent new infection from occurring during the stressful period following the last milking. Since there appears to be more stress on the udder of high producing cows at dry off, it may be more important to dry treat these cows. There seems to be a little gained by selective dry cow therapy in today's high producing dairy herd. Current recommendations are that all quarters should be treated.

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The feeding program during the dry off period should be aimed at stopping milk production rather than meeting nutrient requirements. This principle needs to be emphasized, especially in high producing cows. This will remove the nutritional stimulus to milk production, thus decreasing udder stress, making uneventful dry off more likely. Grain, good quality forage and corn silage can be eliminated from the ration and replaced with lower energy forages such as grass hay or oat hay.

Once milk secretion ceases, managing dry cows becomes less critical. Vulnerability for establishment of new infections is less, once involution is completed. Therefore, it would seem that the dry off procedure that most quickly achieves this process should be favored. The most widely accepted method of drying off cattle is the stop method. This is the most labor efficient and the quickest means of completing involution of the mammary gland. There is no doubt that this system works very well on the sound uddered cow.

On those cows with subclinical mastitis at the end of lactation, it may be appropriate to use the intermittent method. This method does give some advantage in monitoring for clinical flareups. Cows should be retreated after each milkout with an approved dry cow product. Care must be taken that drug withholding requirements do not overlap due dates. The disadvantage of this method is that both treatment and labor cost are increased.

Regardless of the method used to dry cows, it is good practice to monitor the cows for flareups daily until they are completely dry. If clinical flareups occur, they should be milked out and treated immediately. In addition, it would seem advisable if management conditions permit, to teat dip cows in the early stages of dry off.

Cows with leaky teats pose additional problems at dry off. In these cows, dry off is often delayed, and easy penetration of bacteria through the teat canal makes mastitis problems inevitable.

Length of Dry Period

Delays in dry off can be a problem. Dairy cows should be dry for 40 to 70 days. Dry periods of less than 40 days do not allow enough time for udder involution and dry periods of longer than 70 days can result in excess body condition. Body condition is best put on during late lactation, rather than in the dry period. The overall efficiencies of converting feed to body tissue metabolizable energy was 61.5 percent for lactating cows and 48 percent for nonlactating cows.

Dry periods longer than 70 days will increase production in the following lactation, but lifetime milk production is less. Cows not allowed a dry period will produce only 75 percent as much milk in their second lactation and only 62 percent as much in their third lactation as cows with a 50 to 60 day dry period.

A 1982 study of Minnesota DHIA herds showed that the average cow was dry 65 days. Management procedures in the higher producing herds not only provide for fewer dry days, but also permit less variation among dry cows within the herd (Table 1). Adequate breeding records must be maintained and used to accomplish this.

Table 1. Days Dry Before Calving Among Minnesota Holstein Herds.

	Herd average (pounds of milk/cow/year)			
	11,000 to 12,000	14,000 to 15,000	17,000 to 18,000	Over 20,000
Number of herds	392	1,111	473	38
Days dry, average	70	65	61	55
Dry less than 40 days, %	17	13	10	16
Dry more than 40 days, %	39	29	22	16
Dry 40-70 days, %	44	58	68	68

From Steuernagel, et al. (1982).

Summary of Recommended Dry Off Procedure

1. Monitor SCC reports or do CMT tests on cows approaching dry off to determine problem cows.
2. Stop grain feeding two weeks prior to anticipated dry off date.
3. Abruptly stop milking the cow.
4. Dry treat all quarters of all cows immediately after last milking with a single infusion package of an approved dry cow product.
5. Limit feed and water and/or feed lower quality feed at dry off.
6. Move cow to unfamiliar location (change stall or move to dry lot, etc.).
7. Place dry cows in clean, dry environment.
8. Teat dip several days following dry off.
9. Observe dry cows daily until the udders are fully collapsed.