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## Management and Feeding Strategies of Dry Dairy Cows in California

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The dry period of dairy cows has received a great deal of attention from researchers and nutritional advisors in the 1990's. Often considered in the past to be a period of low nutrient need by dairy cows, and a time when a little cash could be saved on feedstuffs, the dry period is now generally accepted to be a critical period in which the cow prepares for the next lactation. Dry matter intake, protein requirements, most desirable energy status, and most effective grouping and management strategies of dry cows have all been recognized as key factors influencing the incidence of metabolic diseases associated with calving, as well as the productive performance of cows in the subsequent lactation. In general, research findings in these areas suggest that it is imperative that the dry period of dairy cows be considered to consist of the *early dry* period, from 8 through about 3 weeks prepartum, and the *transition dry* period from about 3 weeks prepartum until calving.

Yet even within the *early dry* and *transition dry* periods, there are many recommendations relative to the most effective grouping strategies. These include dividing heifers from mature cows, separating over-conditioned from under-conditioned mature cows, and identifying cows carrying twins. However it is difficult to determine the extent to which these recommendations have resulted in changes to actual management strategies employed on commercial dairies in California. Thus the authors visited 15 commercial dairies in California during August (1998) to determine which dry cow management strategies are being employed in practice. The purpose of this article is to summarize the findings of the survey and discuss them in terms of how California dairy ranchers perceive, and use, current dry cow advice.

### Definitions

For the purposes of this article, 'heifers' are considered to include all springing heifers within 60 days of calving, 'mature cows' are considered to include all cows that have

completed at least one lactation and are currently not lactating, 'dry cows' are considered to include all heifers and mature cows within 60 days of calving, the 'early dry' period is considered to include the period from approximately 60 through 21 days prepartum and may be subdivided into 'just-dry' and 'far-off' periods, and the 'transition dry' period is considered to include the period from approximately 21 days prepartum through calving and may be subdivided into 'close-up' and 'maternity' periods.

## **Survey Process**

The authors visited 15 commercial dairies in California over a period of a week in August of 1998. A series of questions had been prepared in advance of the visits and the interviews with the dairy owner and/or manager took about an hour. Dairies in Tulare, Kings, Fresno, San Joaquin, and Glenn counties were visited. All visits were arranged by the county dairy farm advisors who had only been informed that the authors wished to visit dairies that employed innovative dry cow strategies and interview the dairy owners/managers relative to their dry cow management systems. Thus the selection of dairies was not random and may represent more innovative dairy ranchers.

## **Findings of the Survey**

### *Structural Management Strategies*

No dairy used a single dry cow group that included all dry cows of all parities, no dairy used a single dry cow group for all mature cows and only one dairy used a single dry cow group for all heifers. All other dairies divided heifers and mature cows into *early dry* and *transition dry* groups at approximately 21 days prepartum. Of all the dairies surveyed, four utilized essentially the same system of all-parity *early dry* and all-parity *transition dry* cow groups (i.e., two total dry cow groups). However the other 11 dairies utilized unique overall dry cow grouping systems that mixed and matched 13 different dry cow groups. The average number of dry cow groups on all dairies was 3.4, with a maximum of 6 and a minimum of 2. Seven of the fifteen dairies utilized four or more groups.

*Early Dry.* A total of six different *early dry* groups were identified. These included:

- 1) Just-dry. Five dairies utilized 'just-dry' groups into which cows were placed at dry-off. The length of time that cows were in this group varied from 5 to 32 days with an average of 15 days. The only reason given by dairy ranchers for this group was the need to sharply reduce the nutrient density of the diet to facilitate cows drying off. Oat hay was the common feed used during this period, although as the length of the just-dry period increased, the nutritional quality of the ration increased. Several other producers had dropped this group in recent years.
- 2) Far-off. Five dairies utilized 'far-off' groups that combined heifers and mature cows whereas ten dairies divided heifers from mature cows. The two most common reasons given to divide heifers from mature cows during this period were to facilitate the feeding of a higher protein and energy ration to the heifers and to prevent bullying

of heifers by mature cows. One dairy further divided mature cows into two groups at dry-off based upon body condition. Only one dairy identified cows carrying twins before the end of lactation and used this information to make management decisions.

*Transition dry.* Six different *transition dry* groups were identified. These included:

- 1) Close-up. Most (12) dairies utilized 'close up' (i.e., *transition dry*) groups into which cows of all parities were moved at about 21 days pre-partum (one of these dairies did not move heifers). The most common reasons to utilize a close up (*transition dry*) group were to facilitate the use of anionic salts, increase the protein and energy density of the ration, and bring cows to a pen where they could be observed more closely and assisted at calving if necessary. Three dairies also moved cows to a 'close-up' group at approximately 21 days pre-partum, but penned heifers separately from mature cows. The two most common reasons for this split were to facilitate the feeding of a higher protein and energy ration to the heifers and to prevent bullying of the heifers by the mature cows.
- 2) Maternity. Four dairies utilized 'maternity' groups, not to be confused with maternity pens off the close up group, into which cows were moved between 3 and 7 days prepartum. Only one of the four dairies divided heifers from mature cows in this period, but all used a different ration from the preceding 'close-up' ration. The most common reasons given for the use of a maternity group were to move the cows to a pen where they could be observed more closely and assisted at calving if necessary.

#### *Nutritional Management Strategies*

Fourteen of the fifteen dairies increased the nutrient density, both protein and energy, of the *transition dry* ration. The most common reasons given for doing this were reduced intake as cows approached calving and advice from nutritional professionals.

Twelve of fifteen dairies used anionic salts in the *transition dry* rations of mature cows, although only twelve dairies used anionic salts for heifers. Two dairies had dropped the use of anionic salts because they saw no effect or they felt it decreased dry matter intake. One dairy was considering dropping anionic salts to increase dry matter intake.

Four of fifteen dairies increased the nutrient density, both protein and energy, of the far-off ration of the heifers. The reasons given were the higher nutrient requirements of heifers, vs. mature cows, in the far-off period and advice from nutritional professionals.

One of fifteen dairies identified cows carrying twins at the 50 to 60 day pregnancy check and used this information to dry these cows off 10 days earlier and move them directly to the close-up group. Only a few other dairymen were aware of this strategy, to varying degrees, in spite of the observation of all dairymen that their incidence of twinning had increased in recent years (values of 3 to 10% were quoted) and that cows birthing twins were a health problem that they would like to correct.

One of fifteen dairies divided mature cows at dry-off based upon body condition and penned and fed them separately. The most common reasons given for not doing this were lack of available pens and the perception that there was insufficient variation in the body condition of their mature cows at dry-off to justify such a division. The latter perception contrasted sharply with the assessment of the authors who noted extreme variation in the body condition of *early dry* mature cows on most of the dairies.

## Summary

The awareness and use of currently accepted dry cow recommendations on California dairies is variable. The vast majority of dairies are using the concepts of dividing cows between *early dry* and *transition dry* groups, using higher protein and energy rations for *transition dry* groups, and using anionic salts in *transition dry* rations. However very few dairymen are aware of, and even less are using, the concepts of providing higher protein and energy rations for far-off heifers, penning and feeding *early dry* mature cows on the basis of body condition, and identifying cows carrying twins in order to manage them differently from those carrying single calves.

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