# TRANSITION RATIONS FOR DAIRY COWS

The period of time prior to and following parturition is well known for being quite stressful for the dairy cow. It has been acknowledged for many, many years that special care for the cow is needed during this time. However, new approaches to managing the periparturient cow have been developed to the periparturient cow have been developed to minimize health problems and improve milk production. Some of these management strategies have even been necessitated by today's high genetic potential for milk production.

Feeding the periparturient dairy cow is challenging, primarily because of the lack of feed intake. Feed intake begins to decline during the latter two weeks prior to calving, and it increases very slowly following parturition. The reasons for the depressed appetite are limited rumen capacity (primarily prepartum), hormonal changes, palatability of and adaptation to new feeds, and alterations in ruminal fermentation. These aspects imply change -- transition, movement form one state to another.

During this transition period, the cow and the ruminal microbes need to be slowly introduced to the changes that are needed in the feed ration for meeting the nutrient requirements of the high-yielding dairy cow. Thus, **transition rations** are coined to refer to the allocation of feeds during this period of change. The transition period is defined differently among nutritionists, but for the purposes of our discussion, it refers to the period of time from 21 days prior to and 30 days after parturition.

Dry cows need to be housed separately into two groups: recently dry and close-up cows. Cows should be moved into the close-up group between two and three weeks prior to calving. If cows are moved into the group only 10 to 14 days from projected calving date, only about 75% of the cows may benefit from the transition ration because some of the cows will calve early. The major reasons for feeding a transition ration at this time are to: 1) increase nutrient densities in the ration to offset the decrease in feed intake, 2) allow the ruminal microbes to adjust to change in types of feeds, and 3) allow time for the ruminal papilla to elongate (increases surface area to increase absorption of fermentative products). Close-up dry cows may only eat about 20 lbs/day of DM, and the rations should consist of 14 to 15% CP and .65 Mcal NEl/lb DM. Cows should be fed about 8 to 10 lbs of grain. Similar forages and grains that will be fed after parturition should be included in the transition ration. Feeding TMR mixtures for lactating-cow groups can be done, but may create some problems for dry cows. Calcium intake may be too high in such cases, and if refusals from the lactating herd are to be used, don't use refusals from multiple groups receiving different rations. **BE CONSISTENT** with the ration.

When cows calve, energy intake will increase but not at the rate of the energy required; therefore, cows will lose body condition in an attempt to meet this demand. Body condition of cows is very important and should be monutored routinely. Overconditioned cows will have low DM intake and are predisposed to metabolic disturbances after calving. Thin cows will not have the capacity to supply the energy to maximize milk yield. Cows should freshen at 3.25 to 3.5 (1 to 5 scale) and lose about one condition score during early lactation.

From the perspective of feeding management after parturition, the primary goal should be to maximize DM intake. High quality forages must be fed, adequate dietary fiber is needed, dietary level of starch should be limited, and changes in the ration need to occur **gr.a.d..u..ll...y.** Cows in herds being fed forage and grain separately should be fed an additional .5 to 1 lb/day of grain after parturition until the desired level of grain is reached. Also to help avoid rumen upset, grain should be limited to 7 lbs/feeding. Several different strategies are used in herds with the TMR system. If facilities and herd size warrant, a fresh cow group should be formed because cows are not very aggressive at the feed bunk and the cows aren't as likely to get lost in the "crowd". Also, a ration can be specifically formulated to allow acclimation to higher levels of grain yet provide nutrient densities needed with the relatively low DM intake. Rations should contain 18 to 19% CP and .76 Mcal NEl/lb DM. Cows may be kept in the fresh cow group for about 30 days. If cows have not been fed a transition ration prepartum, they may need to spend about two weeks on the low-group ration. On the other hand, if cows have consumed an adequately formulated transition ration for about two weeks, they may, in some cases, do well by being placed in the

high group immediately following parturition.

Proper feeding of the periparturient dairy cow can improve animal health and increase animal performance. Stimulation of an increase in DM intake can improve the rumen fermentation and increase peak milk yield. An increase in peak milk yield by 1 lb can result in 220 lbs more milk for the lactation. The transition from a non-lactating state to one with copious amounts of milk being produced should be done smoothly and included in this strategy should be careful feeding management.