

# Training Self-Motivated, Independent “Cow” Employees



By Donna M. Amaral-Phillips

Much has been written and discussed regarding the keys to transitioning dairy cows from the dry lot to the milking herd. Scientists, dairy farmers, and allied industry personnel alike agree that this time frame is critical in determining the success or failures seen during the next lactation. Gone are the days where “she is placed in the back lot” and managed and fed as cows were in years’ past. Diets, feeding management, and housing have changed to reflect our improved understanding of the processes that naturally occur during this timeframe and how we can help dairy cows best cope with these natural changes associated with the initiation of lactation. Some, including myself, have made the statement that the next lactation starts, not at calving or even just before calving, but as early as the later stages of the previous lactation.

Continuing these discussions along with the correct implementation of key practices on-farm for transitioning dairy cows are critical to achieving a profitable next lactation. In short, well designed and implemented transition cow programs “produce invisible milking cows”. These invisible milking cows go about their “jobs”, needing little supervision or special attention from their owners. They eat, rest, rebreed, and milk well without drawing special attention to themselves. To achieve a herd of mostly invisible dairy cows, scientists point to the successful implementation of protocols associated with 5 different areas. Reviewing these areas on your farm is critical to ensure that these hard working, “cow employees” can do their jobs efficiently.



## #1. Cow Comfort

The guiding principles associated with cow comfort apply to not only the milking herd, but also cows housed in dry cow facilities. Dr. Jim Drackley put it best in a symposium on transition dairy cows; improving cow comfort entails not only managing the facilities themselves, but more importantly “managing cows through that facility”. Management of facilities as well as cows through that facility, be it a barn or pasture lot, should strive to minimize potential stresses during all phases of the dry period, post dry off as well as pre-fresh. These stresses can be associated with overcrowding in resting or feeding areas, repeated movement of cows between groups, and/or heat or mud-related stresses. In recent years,

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the negative impacts of heat stress have been studied. Heat stress impacts production of the cow herself, as well as future production of her calf and future calves of the heat-stressed fetus. When feasible, dry cow barns or pens should use fans and sprinklers in operation throughout the day, when temperatures warrant, providing cooling for these cows throughout the dry period. Overcrowding can become an issue when larger numbers of cows are expected to calve within a set timeframe and housed in a facility designed for fewer cows. Dr. Nigel Cook from the University of Wisconsin – School of Veterinary Medicine noted that we should be promoting the 3 S’s as they relate to managing transitioning cow facilities:

**S**oftness- providing a comfortable place to lie down

**S**pace—providing adequate bunk space (at least 30 inches/cow) to maximize intake

**S**creen- to identify cows, which are failing. Protocols utilizing technology definitely have a place in the management of transition cows. However, they cannot replace the need for a “cow person” to walk around, observe cows, and implement protocols. This serves as a reminder that people with good cow sense and who pay attention to details are invaluable in avoiding potential disasters.

## **#2. Body Condition at Calving**

The current recommendation is to calve cows at a body condition score of 3.0, thinner than the previous recommendation of 3.5. Higher body conditioned cows have more difficulty transitioning back into the milking herd. Overconditioned cows often are associated with a higher incidence of metabolic diseases and lose more condition after calving. We now have data showing that not all cows lose body condition during the first 30 days after calving. In a study in 2 Wisconsin herds representing 1,887 cows, 42% of the cows lost body condition, 36% maintained body condition, and 22% gained body condition. Energy corrected milk the first 3 weeks after calving was not different between the 3 groups of cows. However, the number of pregnancies per AI at 60 days after breeding was higher in the group of cows that either maintained or gained condition. Cows that maintain or gain body condition after calving have greater conception rates, less pregnancy losses, and were healthier than cows who lost body condition within the first month after calving. Cows with longer calving intervals the previous lactation, i.e. breeding issues, carried more body condition at dry off and at calving and lost body condition during the first 30 days after calving. Thus, pointing to the importance of getting cows pregnant in a timely manner (researchers in Wisconsin suggest targeting cows being pregnant by 130 DIM) and feeding late lactation cows such that they do not gain too much body condition prior to dry off.

## **#3. Do Not Overfeed Energy to Dry Cows**

Far-off dry cows overfed energy have more problems transitioning back into the milking herd after calving, eat less during the pre-fresh and fresh period, and have increased number of days to pregnancy. The current recommendations are to balance the energy density of far-off dry cow diets at 0.60 to 0.62 Mcal NEL/lb DM. To achieve this energy density, far-off dry cows must be fed a limited amount of corn silage (often less than 20-25 lbs as fed) along with higher NDF forages, such as straw or more mature forage. These diets still need to contain adequate amounts of metabolizable protein and minerals and vitamins. With these diets, feeding behavior of cows needs to be observed to ensure cows are not excessively sorting their TMR. Diets for close-up dry cows generally are intermediate in energy density between those for far-off dry cows and fresh cows. In close-up dry cow diets, the same amount (concentration adjusted for difference in intakes) of NDF should be fed as will be fed in the fresh cow diets and vice versa.

#### **#4. Routinely Use Anionic Salts in Pre-fresh Diets**

For the most part, cases of clinical milk fever, also known as hypocalcemia (low blood calcium), have been eliminated. However, controlling and minimizing the effects of subclinical milk fever still needs to be addressed on many farms. With subclinical milk fever, the classic symptoms are not seen and can only be diagnosed through timely, post-fresh blood samples analyzed for calcium concentration. Subclinical milk fever has been linked to the increased incidence of other diseases in fresh cows, decreased feed intake, and suboptimal immune function and rumen motility; all potentially contributing to suboptimum performance in early lactation. With the initiation of lactation, a drop in blood calcium is normal just after calving because large amounts of calcium are needed to support milk synthesis. Calcium must be reabsorbed from bone to meet these metabolic demands at this time. Fresh cows that can successfully *recover quickly* within a couple of days from lower blood calcium levels have fewer metabolic issues during early lactation. Feeding the correct amount of anionic salts for 21 days prior to expected calving date helps “prime” the body to be ready to more quickly reabsorb calcium from the bone needed for the onset of milk synthesis. To ensure the correct (adequate, but not excessive) amounts of anionic salts are fed, urine pH must be checked. More recently, feeding anionic salts has shown positive responses related to reproduction. More research is needed to better understand the role of anionic salts and the amount of calcium needed in these pre-fresh diets and their effects on reproduction.

#### **#5. Dry Cow Diets and Additives Impact Performance**

Besides controlling energy intake, feeding sufficient amounts of metabolizable protein (especially heifers), macro and trace minerals, and vitamins have beneficial effects post-calving. Trace minerals and vitamins need to be fed in the appropriate amounts throughout the dry period, not just pre-fresh since they need time to have their beneficial effects. Feed additives are beneficial during the pre-fresh period as well as in the post-fresh cow. We are learning that feeding ruminally protected (rumen bacteria degrade them if not protected) methionine (an amino acid) and choline are beneficial along with monensin and yeast supplements in the close-up dry cow. Scientists are learning more about how various nutrients regulate biological functions through the regulation of gene expression. In addition, certain nutrients act as nutraceuticals and positively impact performance. As such, we will continue to modify recommendations to better match the needs of these cows.

#### **Take-away Messages**

In summary, we have learned how to better manage dry cows so they are best able to enter the milking string, “do their jobs unsupervised”, and become invisible cows. Now the challenge is to successfully implement these key management areas on-farm and to constantly re-evaluate their effectiveness. By practicing these concepts, one can have a herd of mostly invisible dairy cows. As we look to the next frontier in research area to put our attention on, improvements in fresh cow management will be on the horizon. However, the foundation laid down when cows are between lactations will be critical in the successes in the fresh period.