Dry Cow Management - Space and Stress

By Dr. John Popp

When cows enter the last trimester of pregnancy they gain both in weight and size. Typically cows need to spend more time resting in order to deal with this period of pregnancy. Cows in late gestation have a growing fetus that displaces rumen space and the cows are able to consume less feed. Just a few days prior to calving, cows may eat as little as 10 lbs of feed in the day, putting extra strain on body stores and resources. As soon as the calf is born, the cow needs to consume significantly more feed in order maintain her body and produce a large quantity of milk. The degree of comfort, along with the amount of feed the cow consumes pre-fresh has a profound effect on her health and production after freshening. If the cow experiences 'stress' in the dry period her milk production for the coming lactation can be negatively affected. I am using the term "stress" as it entails many things such as:

1) Improperly balanced dry cow diet - too much or not enough energy and/or feed intake
2) Dry cow diet that contains no feed ingredient that is in the milk cow ration
3) Moldy feed
4) Lack of bunkspace
5) Lack of available feed during the dry period - an empty bunk
6) Overcrowding
7) Poor stall dimensions and comfort
8) Environmental Stress (heat, cold)
9) Fly/insect stress

In an attempt to develop some 'real world' guidelines,

(Continued on Page 10)

Dry Cow Management

(Continued from Page 9)

Dr. Bill Stone studied the number of freshenings of 160 New York dairy herds over a 365 day period. Approximately 26% of the herds freshened at least 5% more than the total number of calvings expected. The study also examined the monthly distribution of calving to see if herds exceeded a uniform monthly calving rate by 25, 35 and 50%. Only 10% of the herds surveyed never had over crowded prefresh and maternity areas. Where pre-fresh and maternity areas were sized according to a uniform calving model, 65% of the herds were 25% overcrowded for at least 2 months of the year, while 40% were overcrowded 35% for at least 2 months. For at least one month, over 40% were overcrowded by 50%. Therefore, it seems that facilities for pre-fresh and maternity cows should be sized perhaps 30% larger than the uniform model to reduce overcrowding of these areas.

Increasing facility size increases initial investment. While the exact cost of overcrowding pre-fresh and maternity areas is difficult to determine, it can lead to increased stress that may increase the incidence of freshening health disorders such as retained placentas (RP) and left displaced abomasums (LDA). Some estimates indicate that each RP and LDA cost a dairy over $200 and $300, respectively. Relatively minimal decreases in each of these disorders can justify the additional costs to provide more space and reduce stress (Stone, 2000).

Suggestions on stall dimensions for Far-off and Close-Up Cows

'Far-off' Dry Cow: From dry-off until ~3 weeks pre-freshening

- Freestalls: Should be 52" wide (This is 4" wider than those typically used for lactating cows).
- Bedded pack: 80 - 100 ft^2 bedded area per cow
- Provide 27" - 30" of feeding space per cow
- Provide restraint facilities for vaccines & observation (headlocks or chute)

'Close-up' Dry Cow: Cows that are 3 weeks (heifers 4 wks) pre-fresh to a few days (hours) pre-calving

- Freestalls: Should be 52" wide (This is 4" wider than those typically used for lactating cows).
- Bedded pack: 100 - 120 ft^2 bedded area per cow
- Provide 30" of feeding space per cow

Of further interest to this topic is work done at the University of Wisconsin by Dr. Ken Nordlund on developing a transition cow index along with transition friendly barns. He also indicates a positive payback for dry cow barns if capacity is built at 130 to 140% of average to accommodate fluctuations in calving densities. Additionally, Dr. Nordland emphasizes the importance of stable social groups and having a minimum nine foot length on freestalls, with a minimum width of 52" for dry cows.

Nordlund, K. 2011. Cow comfort drives transition. Midwest Dairy Expo., St. Cloud, MN. November 29'2011.

Stone, B. 2000. Defining and Managing Special Cows. Dairy Housing and Equipment Systems (NRAES-129). Natural Resources, Agriculture and Engineering Service, Ithaca, NY. pp 333 - 339.