

Dry Cow Managements

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The Dry Period

- **Optimum production or income over feed cost during the subsequent lactation occurs with 50- to 70-day dry periods.**
- **Dry period less than 45 days result in reduced milk yields during the following lactation ??**
- **The first 35 days after start of drying off , the mammary gland goes through active involution.**
- **15 to 20 days before calving, lactogenesis and colostrogenesis begins.**

Drying Off Strategies

- **Change group and environment**
 - **Dry cows need to exercise and to get off concrete**
 - **Reduced bacterial environment**
 - **Lot should have abundant shade, be well drained, and be free of drainage ditches and swampy areas**

Drying Off Strategies

- **Change feed**
 - **Reduction of dry matter intake**
 - **Restriction.....**
.....
 - **Change to adiet**
 - **Control the.....intake**

Drying Off Strategies

- Reduction of milk < 40 lbs (Drying Off)
 - Stop bST, Stop milking abruptly.
 -
 - Milk production will be reduced if the amount of concentrate decreased at 1 to 2 weeks before drying off specially if the cow to be dried off is producing more than 50 lb/day.
 - Limit water carefully?
 - Monitor the udder

M. F. Hutjens

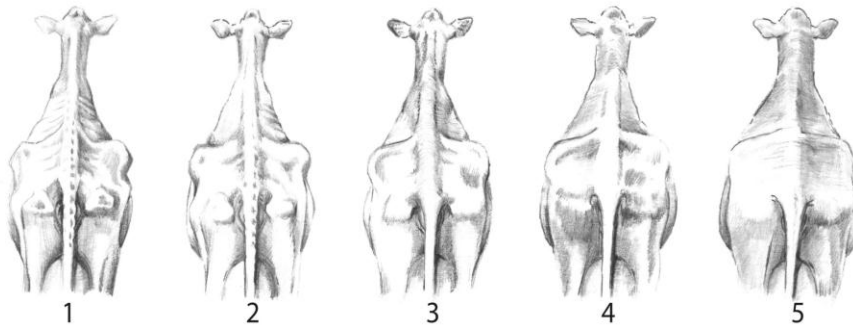


Fig 47-1. Body condition scoring is an effective technique for estimating body fat in cattle (Courtesy of Dana Boeck)



Although they will gain weight through the dry period due to rapid fetal development, body condition scores of dry cows should not increase prior to calving (Courtesy of John Smith)

Drying Off Strategies

- **Monitor body condition**
 - Score cows aboutdays into lactation to prepare cows for a proper body condition at drying off
 - Thin dry cows need to put on body condition
 - Heavy dry cows must maintain their body condition

Monitor body condition Cont.

- Target BCS
(maximum)
- **Remember**, rather than try to adjust body condition during the dry period, it is better to feed cows so they are in the right condition at drying off

Feeding Dry Cows

- ***Problem with NRC recommendation:***
 - Gives avg. requirements for the entire dry period
 - Cows being overfed energy during early dry period (during the mammary involution)
 - Cows being underfed during in the last 4 wks of dry period (during the initiation of lactogenesis and colostrogenesis)

Nutrition Managing of Dry Cows

- **Two-tier System**

- 1) **Far-off** dry cow (60 to 25 d before calving)

- 2) **Close up** or transition cows (30-25 d before calving)

- Best matches increasing pregnancy requirements and declining intake ability

- Feeding two separate dry groups should be considered

Nutrition Managing Of Dry Cows

- Cost of Feeding Dry Cows

- Far-off dry cow = \$...../day

- Close up = \$...../day

- Depending upon the environmental condition and feed availability cost may slightly change

Preparation of rumen papillae and microorganisms

- **Concentrates**

- Grain should be introduced 4-5 wks before calving
- During the last 2 wks (.....lbs/day; ~1/2 DM)

Hints:

- Reduce grain if high corn silage is being fed
- In non-TMR system feed hay before grain

Far-off Dry Cow Ration

- Example (Dr. Hutjens U of IL)
 -lb corn silage
 - Quality of forage (> 0.55 Mcal)
 - > 10 lb long fiber forage
 - Add vitamin and trace minerals

Nutrient requirements (dry matter basis) for dry cows

Nutrient	Far-Off	Close-up
DMI (% BW)	1.6	2.0
NEL (Mcal/lb)	0.60
Crude Protein (CP) % DM
SIP % of CP	35-40	30
UIP (RDP);% of CP	25-30	35-40
ADF, %		
NDF, %		
Forage NDF, %	30	24
NFC, % Max	30	34
Crude fat, %	2	3
Potassium, %	0.65	0.65

Major Mineral requirements (dry matter basis) for Close-up Dry Cows

Nutrient	% Dry matter
Ca	1
Phosphorous	0.30-0.40
Mg	0.30
Potassium	0.65
Na	0.07
Chlorine	0.15
Sulfur	0.2-0.3

Bad Dry Cow Ration

- Low quality forage
-forage
- Finely chopped ensiled forages and lack of coarse dry hay
- Moldy feeds
- Cheap feed

Dry Cow Trt. (Mastitis Prevention)

Dry treatment:

- new mastitis infections most prevalent at calving (early post-partum) and dry-off
- dry treatment is most effective way to prevent new mastitis infections
 - protect udder during dry period
 - cure mastitis from previous lactation

4. Treat each quarter of every cow at drying off with a specially-formulated, commercially-available, antibiotic preparation.



dry treatment, cont'd

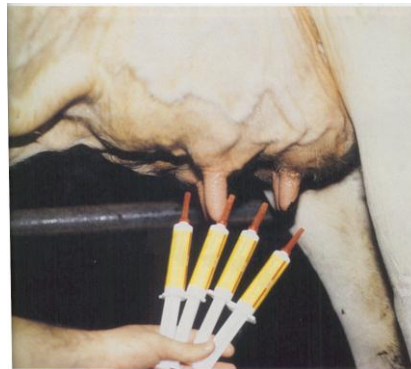
Advantages of dry treatment:
(vs. lactating Ab treatment)

- higher legal dose of Ab
-
- Better.....
- no milk discard

4. Treat each quarter of every cow at drying off with a specially-formulated, commercially-available, antibiotic preparation.



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Short Dry Cow

Advantages:

- **More milk (longer milking period)**
- **No need for far-off dairy cow diet**
- **Easier transition**
- **Less over crowding dry cow facility?**

Short Dry Cow

Some questions?

Possible negative on the subsequent lactation?

Extra milk revenue overcome the cost of production

Some Comparison

	60 day dry	30 day dry
Milk (adjusted 305 d ME)	19,848 lb	20,295 lb
Metabolic disorder	7	3
Mastitis	2	6

Adapted from Dr. Grummer, Univ ogf Wisconsin

Take Home Message

- **Prepare two rations for far-off and transition dry cows.**
- **Prepare the rumen for the diet of early lactation.**
- **Prevent energy and protein deficiency (energy deficit may negatively impact the immune system (J. P. Goff)).**

Take Home Message

- **Prevent major decrease in blood Ca concentration at calving by monitoring potassium intake and(DCAD).**
- **Supply trace minerals at ~35% above NRC recommendations.**

Take Home Message

- **Maintain a strong immune system by providing proper environment for dry cows and providing adequate amount of selenium (0.3 ppm) and(2000 IU/day) for the 3 weeks before calving.**

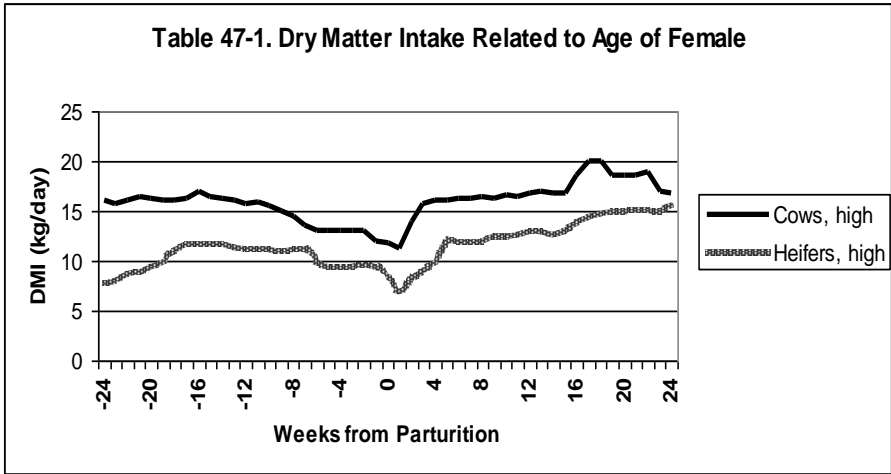


Fig 47-4. The dynamics of the changes in dry matter intake (DMI) during the periparturient period for both heifers and cows.

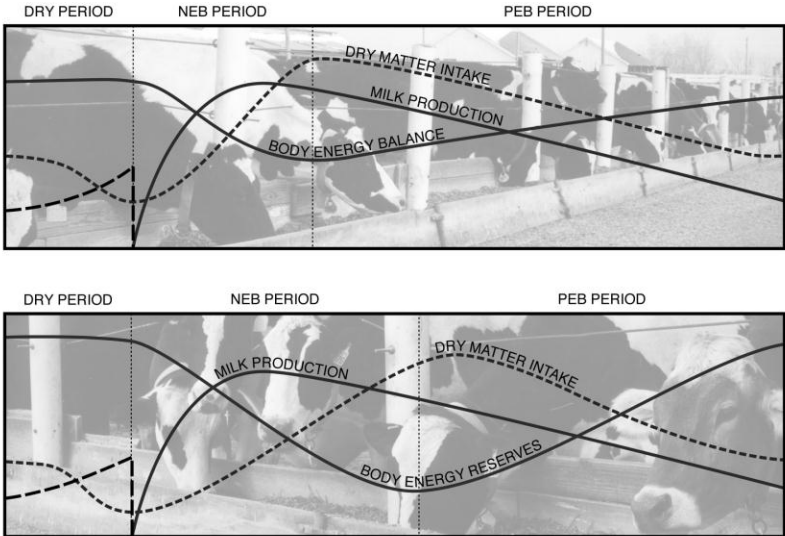


Fig 47-5. The effects of decreased feed intake in the transition period is felt throughout the entire lactation. The top panel represents a 30% decrease in feed intake while the bottom panel represents a 70% decrease in feed intake. (Courtesy of Dana Boeck)

Managing Transition Cows

- Palatability of ration ingredients
 - Anionic supplements need to be adjusted carefully
 - Intake of TMR's tend to be higher than component-fed rations
- If milk fever is a problem, the cation-anion difference of ration should be closely monitored



Fig 47-8. Maternity pens should be clean, dry, and well-bedded (Courtesy of Iowa State University)