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How long should a short dry period be?

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- The dry period:
  - The ‘conventional’ 60 day dry period goes back more than 100 years but was more or less standardized in the 1940’s.
  - The intention of the 60 day dry period is to establish a balance between lost milk production at the end of one lactation and the increase in productivity in the next lactation.

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- The dry period:
  - Theories about why a dry period works:
    - Gives cows a chance to focus on energy and nutritional demands of the fetus and the cow herself.
    - Breaks the constant stimulation of the cow's hormonal stimulation of lactation (galactopoietic and milk stimulating hormones).
    - Allows generation of new milk-producing tissue in the udder.
    - Allows replacement of less active milk producing tissues.

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- The dry period:
  - There have been substantial changes in dairy management that has increased milk production (and exploited the cow's genetic potential to make milk).
  - Feeding management for increased production has introduced increased risks to the cow's health (DA's, ketosis, fatty liver, etc) that are greatest in fresh cows.

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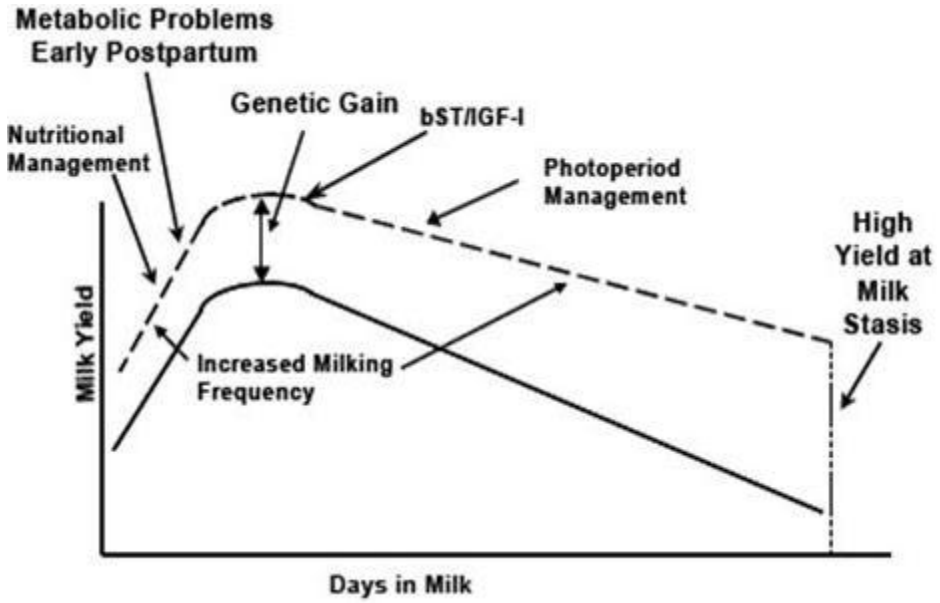

Changes in dairy cow management that impact on overall milk production.

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Å What happens in the dry period?

- ï The dry period is a time where the udder replaces cells that have died or are not producing milk.
- ï There is an increase in the overall milk-producing cells in the udder during the dry period.
- ï Milk production will be anywhere from 10 to 25% less than for cows with no dry period than in cows with a conventional dry period…….some US studies promoting limited dry periods boost production through the use of rBST.

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- The dry period:
  - There are management challenges in 60 day dry periods:
    - The drying off procedure is more difficult in higher producing cows;
    - Going through a conventional dry period means twitching rations up to 3 times (the short dry period eliminates the far off group);
    - Going through a conventional dry period often means moving to new social groups at least twice

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- Theoretical benefits of shorter (28-35 day) dry periods:
  - Better exploitation of higher end-of-lactation milk production.
  - Easier to dry off cows milking for longer.
  - Fewer ration changes-so fewer transition periods.
  - Better maintenance of dry matter intake (DMI).
  - Lowered risk of metabolic diseases.

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- Theoretical benefits of shorter (28-35 day) dry periods:
  - In the past 20 years, research into shorter dry periods has followed two paths:
    - Prospective/controlled trials
    - Assessment of production records (not as useful).
  - Neither approach is perfect so they only serve as guides to the benefits and dangers of shorter dry periods.

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- If you can shorten the dry period, why not do away with the dry period entirely?
  - Cows are much less productive (up to 40% less) in the complete absence of a dry period.
  - Use of rBST can offset much of the production loss which combined with the extra days of production that would have been the dry period……..

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- So what is it about a shorter dry period that might be useful:
  - Only cows, not heifers, seem to benefit from shorter dry periods.
  - Cows with shorter dry periods are moved directly to the close up ration at drying off.
  - Shorter dry periods can reduce crowding in dry cow housing.
  - Fewer dry cow groups?

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- So what is the length dry period might be useful:
  - Research studies have focused on 30 days as a good target for dry period length.
    - Studies comparing cows with 30 or 60 day dry periods show that ***cows*** with 30 day periods:
      - No production loss in the subsequent lactation;
      - Have greater post-partum DMI;
      - Less loss in post-partum body condition.

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- So what is the length dry period might be useful:
  - In reality, the ability to plan for a 30 day dry period depends very much on how variable the dry periods in the herd are now……..how well are you hitting your current target.
  - There are downsides to going too short (<28 days) or too long (45 days)

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ent to maximize production and health

D. E. Santschi*[1], C. L. Girard[2], R. I. Cue[3], D. Pellerin[4], D. M. Lefebvre[1]
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"Data were obtained from a previous study comparing effects of short (SDP; 35d dry; pre-calving ration only) and conventional DP (CDP; 60 d dry; dry-off ration until d-21 and 21d of pre-calving ration) management."

DP length in a 21d of pre-calving ration management									
	≤42d	43-49d	50-56d	57-63d	64-70d	≥71d	se	*P*(DP)	*P*(Parity)
N	59	63	112	107	48	163			
d dry	36.2[a]	47.7[b]	54.8[c]	61.9[d]	66.3[d]	102.2[e]	3.3	<0.01	0.06
Avg ECM (kg/d)	29.5	32.5	31.9	30.9	31.5	31.2	1.0	0.62	<0.01
Ketosis (%)	11.7[a]	31.3[b]	31.9[b]	37.1[b]	35.4[b]	38.9[b]	7.8	0.07	0.04
RP (%)	34.8[b]	15.3[a]	12.1[a]	13.4[a]	8.2[a]	8.5[a]	9.1	0.09	0.33
TCI	-756[a]	10[b]	178[bc]	164[bc]	49[c]	23[b]	202	<0.01	0.82

DP length in a 35d of pre-calving ration management							
	≤28d	29-35d	36-42d	≥43d	se	*P*(DP)	*P*(Parity)
N	100	132	106	74			
d dry	22.3[a]	32.0[b]	38.6[c]	56.2[d]	1.2	<0.01	0.79
Avg ECM (kg/d)	29.8[a]	31.8[b]	32.5[b]	31.5[b]	0.7	<0.01	<0.01
Ketosis (%)	7.3[a]	26.2[b]	15.7[b]	26.9[b]	7.6	<0.01	0.02
RP (%)	31.0[c]	18.7[bc]	13.4[ab]	8.1[a]	6.6	<0.01	0.05
TCI	-256[a]	64[b]	247[bc]	446[c]	132	<0.01	0.03

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Within the ***conventional dry period group***, the actual length of the dry period had no impact on milk production. A dry period of Ò42d tended to lower the number of cows with ketosis and increased the number of cows with retained placenta (RP) compared to the other DP lengths. Pregnancy rate was lower in cows that were dry for more than 57 days.

Within the ***short dry period group***, a dry period of less than 28d increased risk of RP and decreased milk production but decreased the risk of ketosis compared to DP Ó29d. Increased incidence of early calvings was also observed in this group (P<0.01).

ñResults suggest no beneficial effect for longer than 56d DP when a strategy of 21d of pre-calving ration is used. With a management of 35d of pre-calving ration, a minimal DP of 29d is required to maximize milk yield and facilitate transition.ò

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Transition Cow Index™

A Transition Cow Index™ (TCI) has been developed to objectively monitor the performance of fresh cows. TCI uses the DHIA data from the previous lactation in an equation to predict performance at the first test day of the new lactation, compares actual performance to that predicted, and the difference is TCI.

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...y Period Length?*

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ñUltimately, the decision to shorten or eliminate the DP becomes a question of economics. Profitability of decreasing days dry will depend on milk yield and composition during the extra days of milking and the subsequent lactation, colostrum quality and calf survival, incidence of metabolic disorders and disease, reproductive performance, herd level effects, and management factors such as labor and housing costs. There is a growing body of literature on the effect of DP length on milk yield, but information on other affected parameters is limited or nonexistent.ò

ñCows with longer calving intervals and older cows may be more likely to avoid negative effects of shortening dry periods on subsequent milk yield.ò

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Shortened Dry Periods: Research and Recommendations

ñAll cows or herds may not be ideal candidates for a shortened dry period. Excellent management and record keeping is important for appropriate evaluation. There is some data to indicate herds with short calving intervals are more likely to experience reduced milk production in the subsequent lactation when shortening the dry period.ò

ñHerds with a high twinning rate must be cautious if implementing a shortened dry period because cows with twins calve eight to 10 days sooner.ò

ñOverall, we recommend herds consider a reduction to a 40-day dry period followed by an evaluation prior to implementation of a 30-day dry period.ò

Ric Grummer
Professor
Dairy Science Department
University of Wisconsin ï Madison
2007

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- Take home messages:
  - This is a controversial topic with not a lot of agreement, except:
    - Heifers do **not** benefit from nor are they more productive if they have a dry period shorter than 50 days after their first lactation. They will be less productive in their second lactation.
    - Something like a 30 day dry period might be an ideal alternative to a 60 day target (aim for 35 days).
    - Short dry periods do not necessarily improve productivity but they permit fewer feed changes.

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- Take home messages:
  - This is a controversial topic with not a lot of agreement, except:
    - Missing the target will get you into trouble (what trouble depends on how you miss).
    - Whatever your target, dry periods that are shorter than 30 days, or are 42-45 days or are longer than 60-70 days cause greater problems.

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- Take home messages:
  - This is a controversial topic with not a lot of agreement:
    - Studies are often completed by examining production records. In these studies, cows will longer or shorter dry periods didn't have those dry periods planned out. The conclusions may not apply to situations with planned dry periods
    - Studies may only look at part of the lactation (say, 60 day milk) or have >2x milking or may have estrogen use at dry off or may have rBST use.

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"A lie that is a half-truth is the darkest of all lies"

Alfred Lord Tennyson