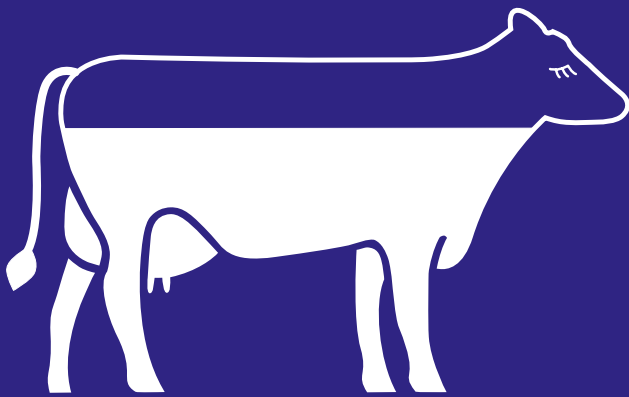




# DRY COW MANAGEMENT

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# The goal of the dry cow period: a fully recharged milk capacity.

The dry cow period represents a unique opportunity to “recharge” a cow’s milk producing capacity. But it is also a period when the risk of mastitis is high. With the right dry cow therapy, husbandry and management, farmers can neutralize these risks while preparing animals for an optimal next lactation.

### Recharge them – because they can’t do it alone!

The “Recharge” concept represents a forward looking approach to addressing and managing the ultimate goals of the dry period: making sure that on the day of calving the udder and cow are in the best physical condition for a healthy and productive next lactation.

Just like recharging the battery of your cell phone, achieving a “full charge” will have a significant impact on performance, i.e. the quantity and quality of milk produced during lactation. This can be achieved only by allowing the udder the time required for optimal regeneration of its milk producing epithelial cells.

### Assisting the cow’s natural immunity

To accompany the cow during this high-risk period, an appropriate antibiotic dry cow therapy must be selected. Ideally, it will be long acting to cover the longer dry cow period, be broad spectrum for a high cure against intramammary infections (IMIs) and be effective in ensuring that no pathogens move forward into the lactation period.

# 60 days to recharge the udder, hooves and rumen.

A full 60-day recharging period results in optimal milk production. It also provides an opportunity to rid the udder of existing infections while increasing the animal’s overall health, particularly concentrating on the rumen, hooves and legs.

### Recharging milk secretion capacity

60 days provides abundant time for optimal renewal of the udder’s milk producing epithelial cells. This includes a margin of security allowing for the inevitable errors in the calving date or cases of early calving.

### Recharging udder health

The principal goals of dry cow therapy are to reduce the level of infection in the udder and to protect it against new infections. The application of a broad-spectrum dry cow treatment that is active during the entire 60-day period accomplishes both objectives.

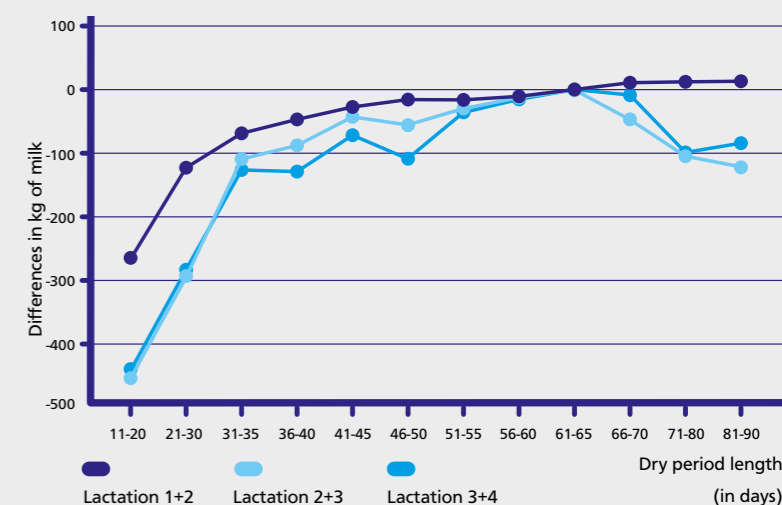
### Recharging the hooves and legs

Hoof health has a major impact on the comfort and contributes to a healthy, productive lactation. Within the 60-day dry period the animal has the time required to generate an entirely new sole.

### Recharging the rumen

The rumen is vital to milk production and cow health. Within the 60-day dry period the microbial population and the ruminal epithelium are fully recovered from possible incidents of ruminal acidosis during lactation.

### A 60-day dry cow period results in optimal milk production



Kuhn et al., 2007.

The above graph measures the milk production of two adjacent lactations with a dry period in between. The x-axis represents the number of days dry. Every measure above or below the '0' value (60 days) on the y-axis represents relative output in 100 kgs of milk. The data shows that a shorter dry period (in spite of the extra milking days) results in reduced milk production when the outputs of the adjacent lactations are cumulated. A dry period lasting longer than 60 days equally results in reduced milk production, except for heifers.



FOLLOW THE TIMELINE TO OPTIMIZED LACTATION

DAY - 07



Selection of cows eligible for dry off.



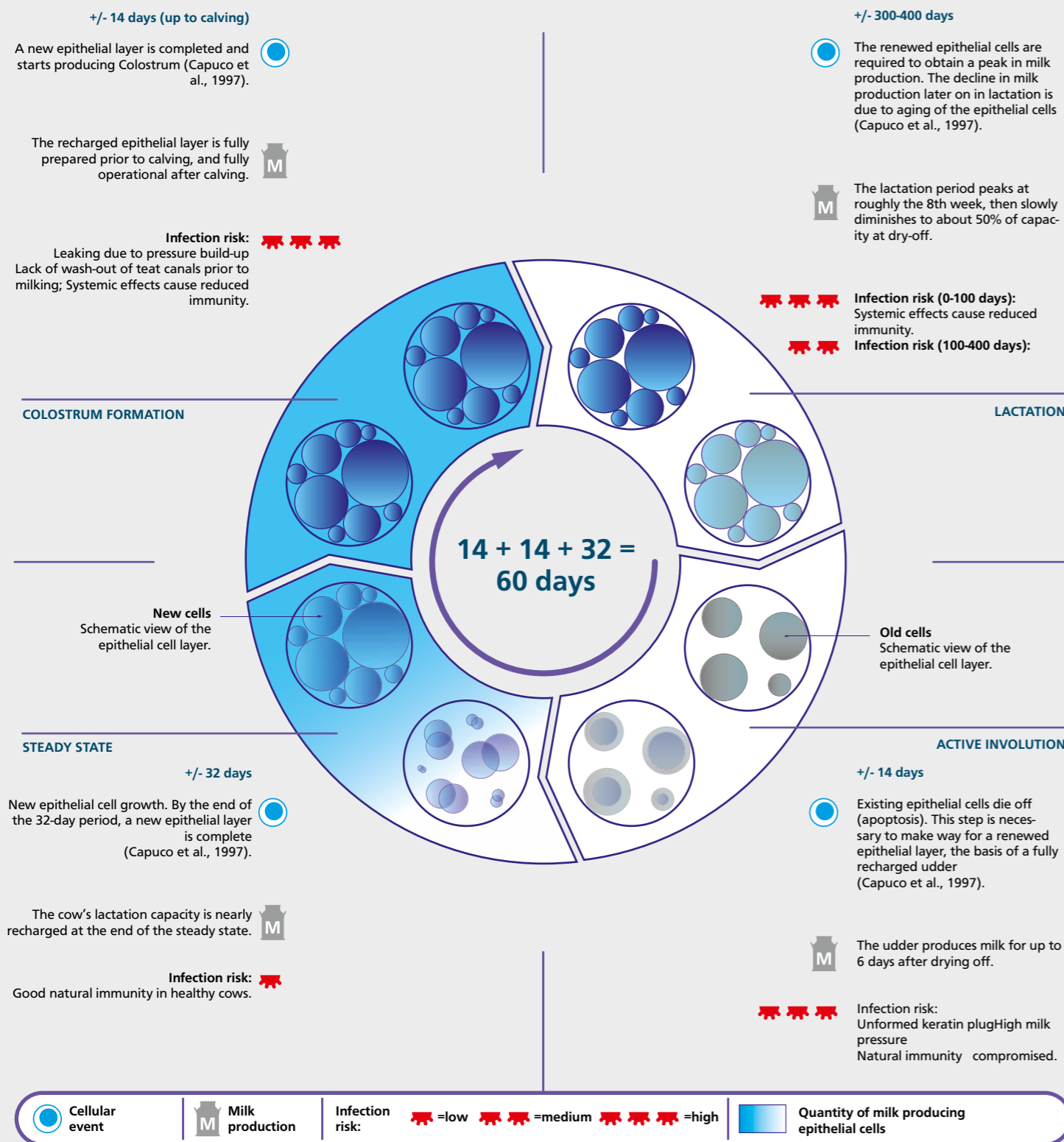
DAY 00



Drying off; apply Cepravin DC.



# Recharging: how it works.



# The dry period: longer or shorter?

*If the dry period is too short, milk production is reduced. But a number of other factors indicate that a single, blanket 60-day period is best, reducing the risks of over complex operations and early calving.*

## Increasing milk yields

The selection of a 60-day dry cow period results in higher milk production. Bachman and Schairer, 2003, compared subsequent milk yields relative to short (30-40 days) and long (50-60 days) dry cow period lengths. The results demonstrate the superiority of the longer period in favoring higher yields.

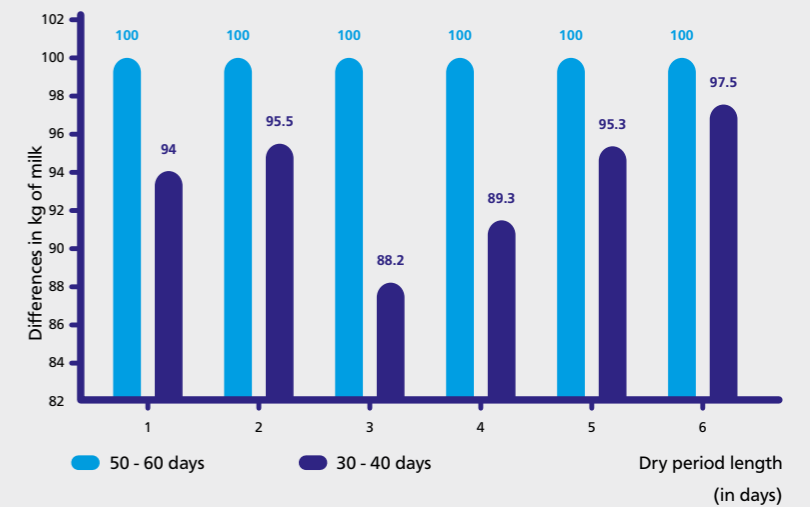
## Objective: significantly reduced culling

A significant number of cows calve up to 14 days early. A shorter dry cow period of say 40 days eliminates any margin of security in the event of early calving. Early calving under a short dry cow period—from abortion, twins, disease and/or mistakes—drastically reduces the time required for recharging the milk producing capacity resulting in low output in the best of cases and culling in the worst case. A blanket 60-day dry cow period avoids these pitfalls.

## Keeping it simple

An approach that sets different dry cow periods for say, primiparous and multiparous cows, increases operational complexity by requiring cows to be treated and followed on an individual basis. The probability of human error easily outweighs the benefits gained with a mixed approach.

## Comparison of milk yield in long and short dry period lengths



Bachman and Schairer, 2003. Milk yield indicated for short dry periods (30-40 days) is shown relative to long (50-60 days) dry periods (100%). A longer dry period thus correlates to higher milk production in the lactation subsequent to calving.

***"The advantages of a simple, blanket approach to dry cow therapy with a single, 60-day duration for all cows far outweighs the added complexity and associated risk of culling of a multiple date approach."***



DAY 14



End of involution period.

DAY 25



Start of recharge. Renewal of milk producing epithelial cells.





# Efficacy throughout the dry period, low SCCs post-calving.

A recent study establishes the efficacy of cefalonium containing dry cow treatment in lowering the Somatic Cell Count after calving. One more reason why this long-acting, broad spectrum formula makes so much sense.

*"Particularly in the first 100 days of lactation, a large number of mastitis cases are caused by infections in the dry period."*  
Bradley and Green, 2000.

## Cefalonium containing dry cow treatment results in a low somatic cell count post calving

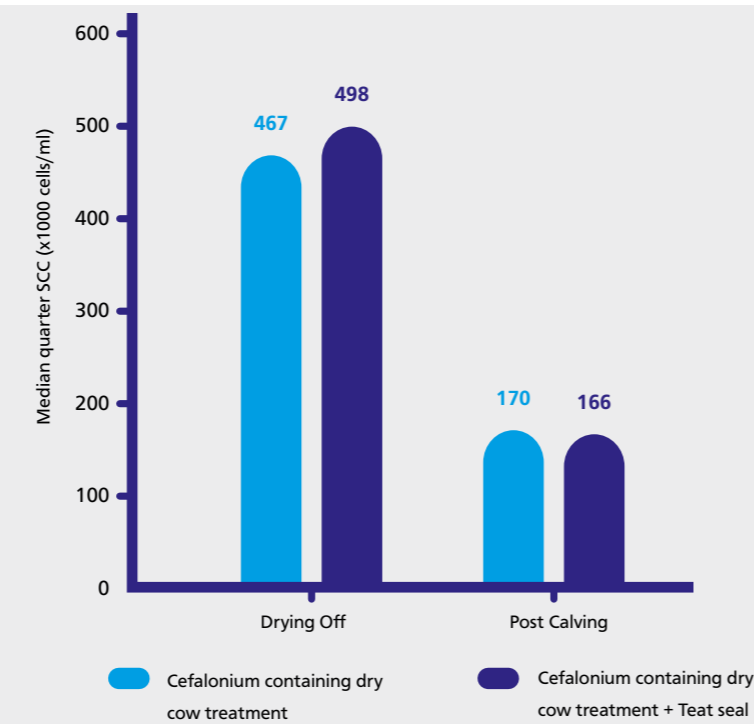
The study looked at the incidence of mastitis in infected cows treated at drying off with cefalonium alone and in combination with an internal teat sealant. Infected cows were defined as those having a cow SCC >200.000 cells/ml.

The data reveal that the quarter SCC was significantly reduced in the infected category after drying off with cefalonium. Adding a teatseal to the cefalonium containing dry cow treatment did not make a significant difference.



## Significant reduction of Somatic Cell Count post calving in infected cows

Cefalonium containing dry cow treatment cures and prevents.



Bradley et al., 2010



DAY 30



Recharge period. Renewal of milk producing epithelial cells.

DAY 40



Recharge period. Renewal of milk producing epithelial cells.





# Dry cow therapy: the basis of your best practices.

## Professional management is key

The dry period must be intensively and professionally managed. Critical success factors include minimizing all forms of stress and ensuring that every dry cow regularly eats a well-formulated ration, favoring the prevention of milk fever (hypocalcemia) around calving. A holistic approach involving all aspects contributing to the cow's well being should be the focus of every dry cow period.

## From the farmer's perspective

The dry period should be managed with as much attention and care as any stage in the lactation cycle. This means that the farmer and assistants should follow clear protocols, planning and monitoring throughout the dry period. A broad spectrum blanket dry cow therapy approach ensures that dry cow operations remain simple and easy to implement and track, avoiding mistakes that can be costly in terms of lost milk production and/or animals.



DAY 50



Recharge period. Renewal of milk producing epithelial cells.

**Cefalonium offers essential treatment and protection during the dry cow period. But a number of additional factors contribute to a successful next lactation.**

## From the cow's perspective

**Good ration/feeding:** even though the dry period represents a period of relative low activity for the cows, providing a healthy, well-balanced ration is essential to supporting lactation. This is accomplished by the use of a ration that is high in fiber and low in fast degradable carbohydrates. Selective eating should not be possible, and dry matter intake should be maximized.

**Avoid stress:** low stress and no-stress housing systems for dry cows are part of well-designed barns. Prevention of stress requires excellent management of individual cows with all procedures and handling focussed on the animal's well being.

**Cow comfort:** enough individual space for the cow around calving with good possibilities to lie down; this means ample housing with about 9 m<sup>2</sup> of space per cow for lying down. Cows should not be made to confront groups of unfamiliar cows prior to calving and should not be visibly isolated from other cows. Access to feed must be unhindered.

**Support immunity:** in addition to a broad-spectrum antibiotic blanket dry cow therapy, the environment should be kept clean with special attention given to mastitis pathogens. Cows with mastitis or high cell counts should not be brought into calving and fresh cow areas. The risks of certain pathogens should be monitored, such as Klebsiella and E. coli in the environment. Always provide excellent ventilation to reduce the moisture content of bedding, walking and resting areas.



DAY 50



Colostrum formation. Renewal of milk producing epithelial cells.





## Going dry - step-by-step.

### An appropriate drying off procedure (NMC recommendations, Oct 2009):

- The dried off cows are gathered into a separate group that receive a low-nutrient ration to reduce milk production. The goal is to bring the daily milk production under 15 kg/35 lbs. Reducing milk production to under the threshold level can be achieved in a period of 4-7 days. Many farms work with a period of 7 days. During the full period cows are milked 2x daily. On farms where the cows produce less than 15 kg/35 lbs at the end of lactation, this "drying off group" is not appropriate.
  - Milking is stopped. Dry cow treatment is applied immediately after the last milking. On farms with a moderately rich partial mixed ration at the feed fence and concentrate provided via dispensers or a milk robot, stopping the concentrate is often all it takes to bring the milk production under 15 kg/35 lbs.
  - Drying off should be a part of the weekly routine, with each action or task described as a standard operation procedure (S.O.P.). A well-designed drying off protocol includes checking the specific physical aspect of the dried off cows and treating when appropriate.
- These tasks can be combined with the administration of dry cow treatment or can be performed at other suitable moments.

## Residue Management.

### Simple rules for managing residues

If cows calve earlier than the indicated 54 days on the leaflet, the milk should be discarded during 54 days after dry off PLUS an additional 96 hours. If cows calve at 54 days or later after dry off, the milk needs to be discarded for 96 hours after calving. Generally, by obeying these simple guidelines residues can be avoided.

You may wish under certain circumstances to test an individual cow's milk. As the available test kits are designed to detect antibiotics and / or inhibitory substances in bulk milk they are extremely sensitive and should be interpreted with care.



### Recommended checkpoints and treatments

- Body Condition Score (BCS)
- Hoof health
- Wounds and infections
- Parasites
- Clipping of hair
- ID-marks
- Vaccination(s)



DAY 60

Renewal of milk producing epithelial cells.

*"The era of dry cows as the "forgotten group" is over. Today, farmers increasingly see dry cow management as essential to the quality and quantity of the next lactation."*



### References

- Kuhn et al., 2007. J Dairy Sci. 90:2069-81.  
 Capuco et al., 1997. J Dairy Sci. 80:477-487.  
 Bachman and Schairer, 2003. J. Dairy Sci. 86:3027-3037.  
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 Bradley and Green, 2000. J. Dairy Sci. 83:1957-1965.  
 Bradley et al., 2010. Accepted for J. Dairy Sci.  
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DAY 100

First 100 days after calving; Peak production.

RECHARGE COMPLETED

