

Managing the Fresh Cow to Minimize Diseases and Disorders – The Goldilocks Diet

Gordon Jones

Central Sands Dairy, De Pere, WI.
Email: gordon.a.jones@att.net

■ Take Home Messages

- ▶ We need to do a better job of managing the transition cow.
- ▶ Central to a successful transition period are cow comfort, adequate housing space (no overcrowding), adequate bunk space, and a dry period of at least six weeks.
- ▶ Proper nutrition during the dry period is needed to successfully transition a cow, but if other factors are limiting performance nutrition won't make up for them and the cow will still under-perform.

■ Introduction

In North America, there has been a failure of the transition period in our dairies. Cows entering the dry period are housed in inappropriate environments, have incorrect nutrient intake (too much of some nutrients, not enough of others) or have too much or not enough body condition (Table 1). What often results from these inadequacies and excesses are milk fevers, displaced abomasums (DA), cows that get off to a poor start and far too much culling in the first 60 days of lactation.

Consequently, dry cow diets are being asked to solve all these problems. What's first needed is cow comfort, where dry cows are not over-crowded and have adequate bunk space, defined as 75 cm (30") per cow. A dry period of at least six weeks is required; shorter periods will decrease profits. Next is proper nutrition, with controlled energy, high-fibre diets that provide just the right amount of nutrients in the correct form—the Goldilocks Diet.

Table 1. It's a matter of too much or too little in the dry period.

Too Much	Too Little
• Body condition	• Body condition
• Weight loss in dry pen	• Weight gain in dry pen
• Time in dry pen	• Time in dry pen
• Energy	• Selenium
• Too many lactations	• Energy
• Twins/triplets	• Dry matter intake
• Grain	• Fibre
• Overcrowding	• Protein
• Excess soluble protein	• Magnesium
• Potassium	• Cow comfort
• Molds and mycotoxins	

■ General Dry Cow Ration Guidelines

Dry cow diets should contain no more than four kg of corn silage dry matter, at least three kg of dry, high-quality, low-energy straw chopped short, and one kg of total grain, all of which will come from corn silage. Other forages should be added to meet the ration guidelines shown in Table 2.

Table 2. Nutrient specifications of the dry cow diet (dry matter basis).

Nutrient	Recommendation
Crude protein (CP)	13.5– 15.5%
Metabolizable protein (MP)	1200 g/day
Net energy of lactation (NEL)	1.25—1.32 Mcal/kg
Neutral detergent fibre (NDF)	40–50%
NDF from forage (minimum)	40–44%
NDF from forage	5.5–6.0 kg/day
Non-fibre carbohydrate (NFC)	< 26%

The diets should contain at least 1,200 grams of metabolizable protein, net energy of lactation levels of 1.25 to 1.32 Mcal/kg and forage neutral detergent fibre (NDF) levels of > 40%. The NDF forage intake should be 5.5 to 6.0 kg/day, which will be nearly identical to the milking cow's diet.

When formulated, mixed and fed properly, these diets can virtually eliminate milk fevers (even without adding anionic salts) and DA can drop drastically. Most dairies have a goal of 4–6% DA, but with these controlled-energy dry cow diets, less than 1% is achievable.

When these diets fail, and they can, it's usually the result of particle lengths being too long, allowing the cows to sort the diet. Another possibility is that the rations might still be too high in energy, or that the cows were on the diets for less than three weeks.

Poor quality forages—too high in fibre or too low in protein—can also be a problem. Mold and mycotoxins and excess potassium are also watch-outs.

Typical nutrient and dry matter intakes (DMI) on low-energy high-fibre dry cow diets are shown in Table 3.

Table 3. Typical nutrient and dry matter intakes (DMI) of low-energy high-fibre dry cow diets.

Parameter	Intake/day
Far off cow DMI	12–14 kg
Close-up cow DMI	11–13 kg
Dry cow NEL (at 12 kg DMI)	15.8 Mcal
NDF (at 12 kg DMI, 50% NDF)	6 kg
Milk cow (at 23 kg DMI, 26% NDF)	6 kg

■ Close-Up Management: Common Pitfalls

Several factors during the close-up period can limit the potential of the cow when she enters the milking string. Several of these are listed below

- ▶ SORTING - #1 Problem
- ▶ Poor quality forages
- ▶ Mold and mycotoxins in the feed
- ▶ Excess potassium in the diet

- ▶ No forage wet chemical mineral analysis
- ▶ Slug feeding / No TMR delivery system
- ▶ Overcrowding

Dry cow management is the single most important phase of production



Central Sands Dairy (CSD) Maternity Area side by side pictures.



In front of the CSD maternity area with feed to the left.



