

Straw: The Counterproductive Ingredient In Dry Cow Rations



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The Dry Cow Diet

The dry cow diet is arguably the most important ration on the dairy farm; setting the stage for a successful lactation. Cows that freshen with metabolic problems of ketosis, milk fever or a displaced abomasum cost

time and money to treat; often preventing the cow from reaching her full potential for that lactation. The goal of the dry cow diet is to limit these metabolic issues and support optimal health and rumen function going into lactation. Dry cow diets should be balanced with the following guidelines in mind:

1. Maximize dry matter intake.
2. Keep the DCAD low and minimize the risk of milk fever by providing the cow with feedstuffs low in calcium, potassium and other cations.
3. Balance the ration for moderate energy levels (0.65 to 0.67 Mcal/lb. Nel) to maintain a stable body condition and limit the risk of subclinical ketosis from weight gain.
4. Deliver crude protein levels of 12.5% to 13.5% to support fetal growth and milk production during lactation.
5. Provide adequate and balanced levels of vitamins and minerals, especially vitamin E and selenium for mammary recovery and development.

Why Is Straw Used In Dry Cow Diets

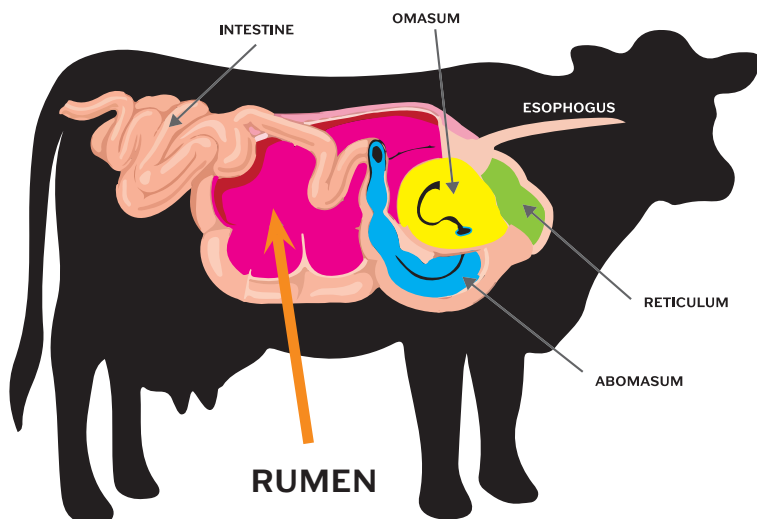
Straw is low in energy, calcium and potassium, while contributing to rumen fill. For these reasons, straw meets the requirements for dry cow rations quite well on paper. While being the perfect candidate for making a dry cow ration look good on paper, straw does not benefit rumen function. A common conventional dry cow diet consists of corn silage and straw along with supplemental protein, anionic salts, vitamins, minerals and corn. By feeding straw, which is essentially

devoid of sugar, protein, or digestible fiber, the physical space is taken up in the rumen but very little is being done to jump start rumen microbe health and productivity. Straw is extremely difficult to digest with high levels of indigestible Neutral Detergent Fiber. Rumen microbes are unable to break straw down. A typical dry cow diet consisting of corn silage and straw requires a high rate of supplemental protein which increases cost. Rumen microbes require digestible fiber, sugar, and soluble protein to proliferate.

Figure 1 GRASS HAY VS. STRAW

Requirements Needed by Rumen Microbes to Grow and Multiply	Grass Hay Provides	Straw Provides
Soluble Protein	+	-
Sugar	+	-
Carbohydrates	+	-

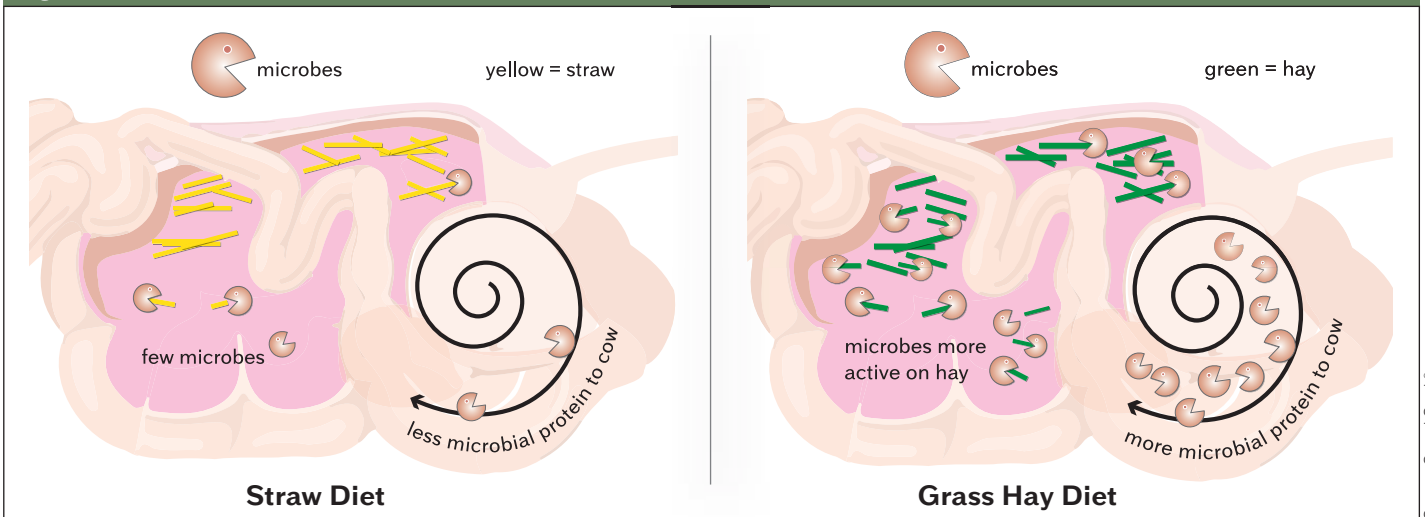
By replacing straw with a low calcium/ low potassium grass hay, the diet will deliver sugar, digestible fiber and protein to the rumen microbes (Figure 1). Rumen microbes utilize the grass hay to multiply, increasing the by-pass microbial protein to the cow which can reduce the amount of supplemental protein needed (Figure 2).



Source: Crystal Creek®

Figure 2

RUMEN MICROBE HEALTH AND PRODUCTIVITY



Source: Crystal Creek®

Grass Hay: The Better Alternative

Feeding grass hay to dry cows accomplishes many of the same goals as straw but does so while providing nutrients and benefitting the health of the rumen. Grass hay provides the adequate particle length to fill the rumen while also often being low in calcium and potassium. This rumen fill helps decrease the risk of a displaced abomasum, while providing a higher nutrient level of sugar and digestible fiber. The low level of cations often associated with grass hay decreases the risk of milk fever in fresh cows. Grass hay has a higher level of protein when compared to straw which keeps costs down by decreasing, or eliminating, the need for supplemental protein to be fed. In Figure 3, a dry cow ration formulated predominately with straw has been compared to a ration balanced with grass hay to show nutrient level and cost differences:

This cost savings can be a profit maker for dairies. An easy cost breakdown example is listed below:

Figure 3 DRY COW DIET GRASS HAY VS. STRAW

Ingredient	Crystal Creek Diet with Grass Hay	Conventional Diet with Straw
Corn Silage (DM lbs.)	10.50	12.23
Grass Hay (DM lbs.)	12.68	0
Soybean Meal 46% (DM lbs.)	2.61	3.02
Soy Chlor (DM lbs.)	0	2.02
Wheat Straw (DM lbs.)	0	7.13
Corn Grain (DM lbs.)	0	1.11
Crystal Creek Dry Cow Mineral (DM lbs.)	0.21	0.21
Calcium Carbonate (DM lbs.)	0.03	0.32
Total Dry Matter Intake	26.03	26.02
DCAD	2.20	-0.62
Crude Protein %	13.5	13.5
Energy Levels (Mcal/lb.)	0.66	0.66
Total Ration Cost (hd./day)	\$2.54	\$3.51
Savings from Grass Hay Diet	\$0.97/cow/day	

100 Dry Cows x 60 Days Dry x \$0.97 Cost Savings/Cow/Day

=

\$5820.00 Savings During Dry Period on Grass Hay Diet

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Straw: The Counterproductive Ingredient In Dry Cow Rations

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Aside from being a lower cost ration for the producer, the dry cow ration based on grass hay stimulates the rumen microbes and improves rumen health leading into lactation. Optimizing rumen function helps reduce stress on the fresh cow and allows her to utilize the lactating diet more efficiently.

A properly balanced dry cow ration that is formulated with the correct cation levels, energy and dry matter intakes, is crucial to the overall profitability on a dairy and will allow the

cow to transition easier into the new lactating diet. While straw may allow the diet to meet ration criteria easily on paper, grass is a much more appropriate choice that meets pre-fresh requirements while providing the beneficial nutrients of sugar and digestible fiber to feed the rumen microbes and improve rumen function going into lactation. Crystal Creek's strong focus on using grass hay to properly balance dry cow rations increases profitability. Contact a Crystal Creek® nutritionist to learn more or have a ration balanced for your farm.

