



Eastern
DAIRY Edition
Spring 2021

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Upright Silo Storage Inventory Calculations

Written by: Sylvia Borucki, Ruminant Nutritionist, PhD

February and March are “inventory” months when we should confirm if we have enough forage before 2021 haylage harvest. This is also a good time to confirm corn silage inventories even though there is plenty of time prior to fall harvest. Corn silage inventories can be checked again in the summer months. Inventory calculations will provide the necessary information to adjust amounts fed, implement usage strategies and purchases, if necessary.

During the past years in Ontario, most farms have increased their stock numbers because of 6% more quota (2017) or promised incentive days. With more

heads on farm we must calculate if there is enough forage before surprises and panic strike in the spring. For example, 5 extra cows on farm eating 20 kg haylage as fed per day, would require 33.55 more tons of haylage in their lactation (305 d) as fed including losses ($5 \times 20 \times 305 \times 1.1$).

Calculations must include all groups: lactating, dry cow groups and replacements. Available tables are easy to use in dry matter terms. This requires that the farm keeps updates of dry matter values of forages fed and do necessary adjustments on feeding tables if dry matter changes.

Table 1: Upright Silo Storage: Capacity in Tons of Dry Matter Per Feet at Different Settled Depths

Silage Diameter in Feet tons of dry matter per ten feet					BOTTOM UNLOADER	TOP UNLOADER
16'	18'	20'	22'	24'		
7.1	9.0	11.2	13.6	16.1	8th 10'	TOP 10'
12.0	12.5	18.8	22.9	27.2	7th 10'	2nd 10'
15.0	19.0	23.7	28.6	34.0	6th 10'	3rd 10'
17.4	22.0	27.2	32.9	39.2	5th 10'	4th 10'
19.3	24.5	30.5	36.7	43.8	4th 10'	5th 10'
21.2	26.9	33.2	40.0	47.6	3rd 10'	6th 10'
		33.2	40.0	47.6	2nd 10'	7th 10'
		33.2	40.0	47.6	1st 10'	8th 10'

*Calculations work for DM of approx. 35%

1. Calculate available forage in dry matter terms: example tower silo (Table 1)

Available haylage.

Notice that forage dry matter is denser at the bottom. We should start counting the number of 10 feet portions based on height when the haylage was filled. For example, if a 20' diameter silo was filled up to 60 ft. the dry matter portions added should be $11.2 + 18.8 + 23.7 + 27.2 + 30.5 + 33.2 =$ total dry matter tones available. Whereas if only the last 10 ft. are available*, the last portion would be 33.2 .

2. Prepare a table that calculates the amount of dry matter use per group per day:

	Kg per cow	# Cows	Kg per day
Far Off	4.6	10	46
Heifers	4.6	20	92
Lactating	8	60	480
			618

3. *Balance $33,200\text{kg}$ dry matter minus (10% losses) = 29,880 kg DM available.

Daily requirement is 618 kg DM per day. Available $29,880/618 = 48$ days

Forage available for 48 more days.

Conclusion

Based on the calendar if we are at the end of March, we may be okay, because there are approximately 48 days to next harvest estimated May 18. The farm can strategize and reduce the haylage use for heifers adding more straw and therefore the haylage will be available for longer into the new harvest. The lactating group would have fermented forage for 3 extra weeks. It is best to wait for the new 2021 forage to ferment and settle for proper homogeneous feeding.

Company Update

By: Phil Roberts, National Sales and Marketing Manager

The good news is the ground hog did not see his shadow, so hopefully an early spring!

I want to thank you, our clients, for your ongoing support as we continue navigating through the challenges of Covid-19. The challenges from the pandemic are slightly different for everyone, yet it is fascinating to observe the creativity and resilience demonstrated in finding new and unique ways to get the job done.

Our supply chains continue to be interrupted by the ongoing global pandemic; however, our teams continue to explore options to keep your feed and our offerings competitive. It is certainly not an easy feat to pilot the market volatility we are experiencing, which is truly quite incredible. Our team is committed to finding options and resources to help you, our business partners, through these uneasy times. Please ensure you are consulting with your New-Life Mills representative to assist you and your operation with the best viable solution to meet your needs.



Finding Your Dry Cow Program

Written by: Erik DeVries, BSc., Ruminant Technical Representative

You check your calendar or computer and see that you have a cow due to calve today. The fresh cows have struggled recently, either too many with ketosis or too many retained placentas, or maybe just too slow to get going. Maybe this cow will be the one that gets things back on track. Maybe.

This scenario is one that sometimes happens on farm, but it shouldn't. The two pillars of ensuring healthy fresh cows are a solid dry cow program and good cow comfort.

So what should the dry cow program look like?

At New-Life Mills, we propose a Goldilocks dry cow program that provides the right amount of protein and fibre, controls the energy, and has balanced minerals. This program is generally based on corn silage and straw, along with a protein source.

Types of Programs

The first type of program is balanced using the 31% UltraTrans Dry Cow Supplement. This supplement is designed to meet the protein needs of the dry cow and her calf, complementing the energy that comes from corn silage. The 31% UltraTrans Dry Cow Supplement contains anionic salts for electrolyte balance to help prevent milk fever, plus organic selenium and rumen protected methionine to boost and enhance immune function.

The fortified version of the 31% UltraTrans Dry Cow Supplement contains yeast to ensure healthy rumen fermentation and bypass choline to improve energy metabolism, liver function, and reduce the risk of ketosis. This is an excellent option for dairy herds that want to use additives to decrease the incidence and cost of the two main transition cow diseases: ketosis and milk fever, as well as increasing fresh cow performance. While feed additives for dry cows have a good return on investment, excellent dry cow management strategies that reduce the amount of stress on the dry cows will also make a large impact.

The second type of dry cow program is formulated



UltraTrans™
Dry Cow Supplement

Enhance Pre and Postpartum Health for a Strong Transition!

- Selenium Yeast**
To enhance rumen function for optimum cow health
- Protected Choline**
To help prevent fatty liver and ketosis
- Optimum Mineral Balance**
To meet dry cow need
- Yeast**
For increased dry matter intake and optimize rumen function
- Blend of Rumen Degradable and Bypass Protein**

Xtra Hi-Mag™ Dry Cow Premix

Chelated
Trace
Minerals

Inclusion of
Selenium
Yeast

Optimum
Mineral
Balance
for Dry Cows



using the 9:4:14 Xtra Hi-Mag Dry Cow Premix with a commodity blend as the protein source. This option does not contain anionic salts for the prevention of milk fever, and as such, should be fed with forages that are lower in calcium. Normally Goldilocks dry cow programs based on straw and corn silage, are naturally lower in macro minerals, including calcium. This premix provides a balanced source of macro minerals (calcium, phosphorus, potassium and magnesium) with microminerals such as zinc, copper, and manganese being supplied from both inorganic and chelated sources. Chelated minerals are more bio-available for the cows and therefore fortify the immune system.

Management Considerations

There are many nutritional factors involved in the preparation of the dry cow diet that need to be discussed with your advisor, including forage type and availability. On farms where haylage or hay must be fed, and a Goldilocks dry cow program is not feasible, the amount of calcium in the diet should be evaluated. Hay crop forages that contain more grass or from fields where manure is not spread will help to control calcium and potassium levels. The amount of haylage that can be added to a dry cow ration is heavily dependent on the calcium and potassium levels in the forage. If a forage is to be used in a dry cow program, it should have wet chemistry analysis performed to accurately evaluate mineral content, as accurate mineral nutrition is essential for fresh cow success.

Cow comfort and feed bunk management is just as essential in dry cows as it is in lactating cows. Overstocking the dry cow pen will inevitably lead to poor results due to increased competition at the feed bunk, decreased lying time, slug feeding, and other stressors. Having a comfortable pen (stalls or pack) will increase lying time which is linked to better fresh cow performance. If using a Goldilocks program, the straw must be chopped fine to avoid sorting at the bunk, potentially adding water to further discourage sorting behaviour.

A strategy to reduce costs in those farms with longer dry cow periods and two groups of dry cows, is to feed a base mix TMR to the far-off dry cows, and then add anionic salts to the TMR for the close-up group. This will provide a negative dietary cation anion difference (DCAD) in the ration to prevent milk fever. The negative DCAD ration fed during the last 3-4 weeks before calving will prepare the metabolism of these animals for the extreme requirement of calcium in the first weeks after calving. The use of a single base TMR helps to reduce costs and facilitate management savings in labour.

Conclusion

There is no one size fits all, cookie cutter approach to dry cow programs. Dairy producers should work closely with their advisor to find the best option for their operation. When a proper dry cow program is in place, coupled with excellent cow comfort, the end result will be a profitable, high producing cow.

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