

valacta

# Dairy Knowledge at your fingertips

## Editorial



JEFF GUNN, Valacta Regional Manager for Atlantic Canada.

Well, it has certainly been an enjoyable and exciting first few months on the job as Regional Manager for Valacta here in Atlantic Canada. I have spent much of my time traveling the region and speaking with as many of the technical team, producers and industry partners as I possibly can - learning and listening. This has been invaluable in helping me gain a true sense of the state of the industry here in the Atlantic region, the challenges it is facing and the many opportunities. This information will help our team plan and implement the direction for Valacta in response to the needs

of our stakeholders, while continuing to offer the valuable services currently in place.

One of our focuses over the next months will be ensuring that we continue to provide value in an ever-changing industry. Our dedicated team combines years of experience in milk recording and data collection. The information collected contributes significantly to the improvement of the industry. The management tools and benchmarks provided in the Valacta reports ensure profitability of the farm operation. We have been told that you want a better understanding of the information that is in your reports. Some producers want more time to review reports and objectives with their technician. This will also be our focus in the next few months.

Our team will receive more training on reports this fall. We will also be discussing the upcoming producer "Forage Challenge" workshops that will be held around the region in late winter. Following these meetings, we will ask for a few minutes of your valuable time to provide you with basic information on tools such as the MUN test which has been proven to put "MUN-ey" in producer's pockets! This is a tool that is

being used by veterinarians, nutritional consultants and feed companies and we hope to get more producers benefiting from it over the next few months.

In closing, let's congratulate Valacta for receiving the Bronze Level Canada Award for Excellence (CAE). These awards have been presented annually to private, public, and not-for-profit organizations that have demonstrated excellence in the areas of Quality and a Healthy Workplace. On behalf of our team, thank you to all partners, clients and staff for making this a reality! We could not be more proud!

To follow on our quality objectives, we will be sending out a survey to producers this fall to ask for your feedback on our services. Providing us with this information will help us ensure we continue to offer a product that the customer wants and needs.

If you have any questions or concerns, please contact myself at [jgunn@valacta.com](mailto:jgunn@valacta.com) or (902) 759 4866 or any member of our technical team. We will follow up - that is what we are here for...



### SUMMARY

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IN PRODUCERS' POCKETS...

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# MUN

## A tool to put “mun-ey” in producers’ pockets...

**MUN (milk urea nitrogen) is a tool that is being offered by Valacta here in Atlantic Canada. MUN is being used more and more by veterinarians, nutritionists and feed reps as an indicator of the efficiency of protein digestion in the ration.**

### THE ABC'S OF MUN

Urea is a small molecule, soluble in water, coming mainly from the liver. The liver synthesizes urea in order to eliminate excess nitrogen coming either from the cow's protein metabolism, or ammonia coming from the rumen. The latter source is usually the most important. Urea generated in the liver is then carried by the blood toward the kidneys, where it is filtrated and transferred to urine, which is the main form of nitrogen excretion. Since urea is water-soluble, its concentration tends towards an equilibrium between the blood and other bodily fluids, notably saliva and milk. Saliva urea can be recycled toward the rumen and be used as a nitrogen source for microbes. In the case of milk, this equilibrium allows us to use the milk urea nitrogen concentration as a reflection of the urea concentration in the blood. Blood urea concentration varies along the day, notably in response to feeding. When we take a milk sample two (or three) times a day, the MUN concentration from a specific milking reflects the average blood concentration since the previous milking.

As already stated, the main source of urea is ammonia coming from the rumen. Ammonia comes from the degradation of the feed protein by the rumen bacteria. Also, silage can provide part of its own nitrogen as ammonia. In order to be used by the cow, this ammonia must be picked up by the rumen bacteria and incorporated into microbial protein, since this

is the main source of metabolizable protein for the cow. In order to pick up this ammonia, bacteria need to multiply. The available energy (coming from fiber and non-fiber carbohydrates) determines the speed at which they will multiply and, consequently, the amount of ammonia that will be picked up. Hence, the amount of ammonia coming out of the rumen depends



**Values**

**Possible Causes**

**Possible Effects**

**Observations at the Barn**

**High**

- Lack of fermentable energy
- Grain milling too coarse
- Deficient feeding sequence
- Too much DIP

- Low production (\$)
- Low protein test (\$)
- Embryo mortality (\$)
- Nitrogen wastes (\$)

- Liquid manure
- Grains in manure
- Poor body condition
- Increased water intake
- Lower DMI
- Low persistency (\$)

**Low**

- Low feed intake
- Deficient calving preparation
- Too much fermentable energy
- Forages poorly degraded
- Forages low in DIP
- DIP deficiency
- High P requirement for growth

- Limited microbe population
- Increased UIP requirement (\$)
- Lower production (\$)
- Acidosis (\$)

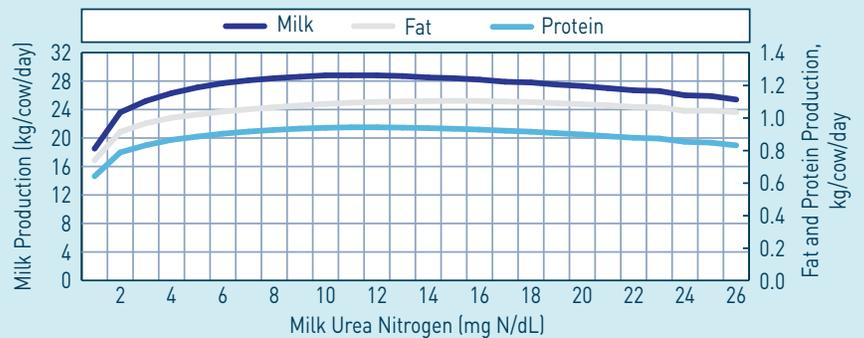
- Lower DMC
- Pale manure
- Firm manure
- Grains in manure
- Fibres > 5 mm in the manure sifter

directly on the amount of degraded protein in the rumen and the energy available to capture it.

**MUN AS A MANAGEMENT TOOL**

The scientific literature indicates that the safety range is between 10 and 16 mg N/dl, but we should aim for an average that does not exceed 12-13 mg N/dl. A higher MUN means a larger amount of feed protein wasted, and a higher nitrogen excretion through urine. On the other hand, in order to optimize microbial growth, a minimum concentration of ammonia is required in the rumen all day long. In the absence of ammonia, microbes could face a lack of nitrogen, which would deprive the cow of microbial protein.

**MILK, FAT AND PROTEIN PRODUCTION VERSUS MUN**



Source: Valacta database, Quebec herds on milk recording, 2000-2009



**"Milk urea nitrogen testing is an excellent tool. As a nutritionist, it helps me to prevent overfeeding of protein- which saves money on the farm. Also, it helps me fine tune rations in case I am underfeeding fresh cows. I recommend it on a regular basis, as the cost far outweighs the value it provides." - DANIEL SCOTHORN, SCOTHORN NUTRITION.**

Hence, the optimal MUN concentration should be the lowest concentration which has no negative effect on milk production. Indeed, a low concentration is better, first, from an economic viewpoint, since we make the best use of feed protein, and second, from an environmental viewpoint, since we reduce waste. However, any nitrogen deficiency in the rumen resulting in a lower milk production would of course negate these benefits.

MUN values below 8 will result in a lower production, corresponding to a shortage of protein available in the rumen. Conversely, MUN values higher than 14 will not translate into higher production. They correspond to a non-optimal use of feed protein and, consequently, increased nitrogen waste.

**For more information on MUN or any other Valacta services, contact Customer Service at 1 800 266 5248, your Valacta technician, or Jeff Gunn at [jgunn@valacta.com](mailto:jgunn@valacta.com) or (902) 759-4866.**

## A Good Partnership to Serve You!

The Dairy Composition section of PEI Analytical Laboratories tests the raw and processed milk, as well as all milk samples received as part of the Valacta herd recording program. The PEI laboratory delivers the results to the Valacta data processing center in Quebec electronically. Final reports are delivered quite quickly, sometimes within one work day.

Valacta provides the results of individual cow samples of all participating herds in Atlantic Canada.

Milk recording is still the best known managing tool to improve a dairy herd performance.



Dairy Production Center  
of Expertise Serving  
Dairy Farms in Quebec  
and the Atlantic Provinces



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