
Experience of milk based farm monitoring of Livestock Performance Testing (LTP) Ltd.

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Abstract

The one page summary report was developed by LPT Ltd. The report not only provides easy to use information about the urea content of the milk samples, but also informs about subclinical acidosis. It is easy to point out if any changes occur in protein or energy supply by lactation numbers and stages. High urea level has negative effect on reproduction due to excess of protein (degradable, soluble protein).

High milk urea (higher than 32 mg/dl) or increasing value (higher than 4 mg/dl) is caused by the following feeding situations:

- Feeding too much total crude protein.
- Feeding too much rumen degradable (RDP) or soluble (SP) protein.
- Amino acid imbalance.
- Ration low in fermentable carbohydrate or non-fiber carbohydrate (NFC).
- RDP and fermentable carbohydrate are not synchronized in time.
- Inefficient rumen fermentation due to subacute ruminal acidosis (SARA).
- Heat stress.

High urea level (> 36 mg/dl) can be connected to the failure of conception rate by 15-20%. A high MUN value suggests that energy is being utilized to convert ammonia to urea and is being diverted from milk production. Hutjens (1996) suggests, using the Cornell model, that cows with MUN values over 42 mg/dl will produce 3,5 kg less milk.

Low milk urea (less than 18 mg/dl) or decreasing value (higher than 4 mg/dl) is caused by the following feeding situations:

- Low feed intake.
- Too low total crude protein or low in RDP or SP in the diet.
- Feeding too much NFC.
- Inefficient rumen fermentation.

Milk fat content depends on many factors, like milking interval, season, number of rumination, heat stress etc. However, milk fat depression reaching the point of 2,5% milk fat content is most likely related to acidosis, as agreed by most of the authors. If the relative frequency is over 10% of the cows producing less than 2,5% milk fat in any herd, they most likely suffer from subacute ruminal acidosis (SARA).

Our experience with farm monitoring reflects that milk urea and the occurrence of SARA are independent of quantity and contents of milk. Optimal values can be obtained by good feeding and sound management at any milk production level.

Keywords: milk urea, protein supply, SARA

Introduction

Milk urea is the fraction of milk protein that is derived from blood urea. Milk urea in Holstein normally represents about 0.19 percentage of the normal 3.2% total milk protein. The milk urea content is mainly determined by the feeding program. Following the changes of milk urea can effectively support the controlling and fine tuning of the feeding program. The synchrony of protein and energy balance can be evaluated. The values show the consequence of the feeding program. Do not forget, there are at least 3 diets at the farm:

1. the formulated diet.
2. what can be scaled and mixed in the TMR wagon.
3. the consumed diet and what sorted out.

How to use urea value

Urea dates differ from farm to farm and are specific of them. Having determined the farm specific urea value, the raising and decreasing tendency informs about any challenge in the diet and feeding management as well. It is essential to analyze feed ingredient in order to make accurate formula. Beside the raw material analysis, do not forget to examine the TMR time to time. The key factor is providing available carbohydrate to provide the energy for rumen microbes to convert ammonia into microbial protein. The desired milk urea level varies from 20 to 30 mg/dl.

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SARA: Sub Acute Ruminal Acidosis

Oetzel G. R. (2013.) determined the three major causes to consider -over-feeding unsaturated fats, monensin feeding, and ruminal acidosis. Since monensin only can be used by individual treatment by bolus, it has no significance under Hungarian conditions. Excessive intake of dietary unsaturated fats is the most predictable and repeatable of all the causes of milk fat

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Our practical report is applicable to show changes in protein and energy supply and to monitor the prevalence of SARA. Our experience with farm monitoring reflects that milk urea and the occurrence of SARA are independent of quantity and contents of milk. Optimal values can be obtained by good feeding and sound management at any milk production level.

List of references

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