

Milk Urea Nitrogen Testing Is Monitoring Tool

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STATE COLLEGE (Centre
Co.) — Pennsylvania DHIA is

offering an additional management tool, milk urea nitrogen analysis, which can monitor the urea concentration in milk.

This is another method to monitor your herd's performance along with other records and pertinent information.

Milk urea nitrogen or MUN measures the efficiency by which nitrogen is utilized by the animal.

Nitrogen is an essential component for rumen microorganisms and the production of microbial protein.

Ammonia (NH₃) results from the microbial degradation of feedstuffs.

The rumen microbes use fer-

mentable carbohydrates to provide energy and organic acids in combination with ammonia to form amino acids and subsequently microbial protein.

When rumen ammonia concentrations exceed the ability of rumen microbes to incorporate ammonia into microbial protein, ammonia is absorbed through the rumen wall, converted to urea by the liver, and high levels are found in blood, serum, or milk.

If ruminal ammonia concentrations are low, this can also be reflected as low MUN's.

When MUN values are too low or too high, then problems may exist in the ration which can

impair animal performance, reduce economic efficiency, and affect environmental pollution.

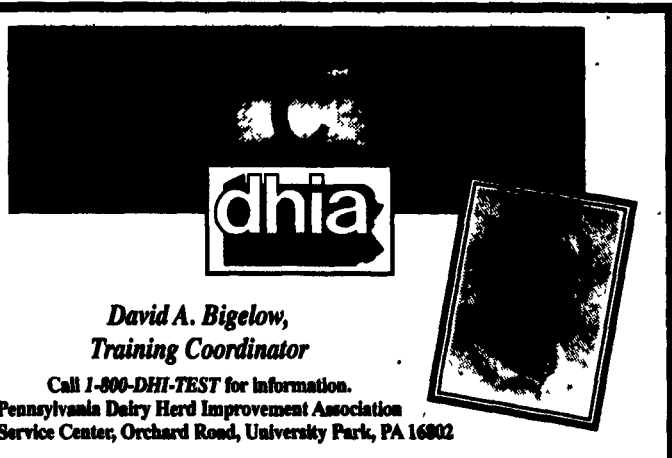
The primary areas in nutrition that affect MUN levels are total crude protein intake, degradable and soluble protein intake, and the amount and type of nonstructural carbohydrates supplied in the ration.

The following areas should be examined closely in a ration program if MUN levels are higher than what is considered normal: * Excess crude protein in the ration * Excess levels of degradable intake protein * Excess levels of soluble intake protein * A combination of any of the first three items * Inadequate nonstructural carbohydrates and excess protein.

Lower than normal levels of MUN's may indicate: * Excess nonstructural carbohydrates and inadequate protein * Deficiency of soluble intake protein * Deficiency of degradable intake protein * Excess level of undegradable intake protein.

These are some areas in nutrition that would need to be evaluated. However, MUN values are not meant to be used as the sole indicator of a possible problem. MUN's are an additional TOOL.

You need to use other information in conjunction with MUN's to evaluate the herd such as records on reproduction and health performance, milk fat and protein levels, and diet composition through analysis of forage, feed, and TMRs.

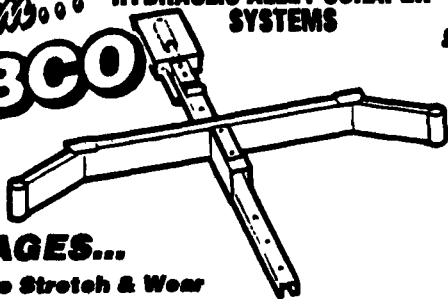


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David A. Bigelow,
Training Coordinator

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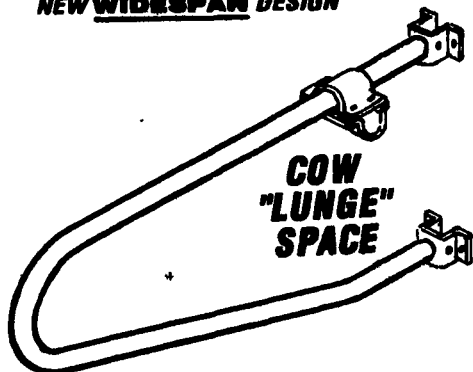


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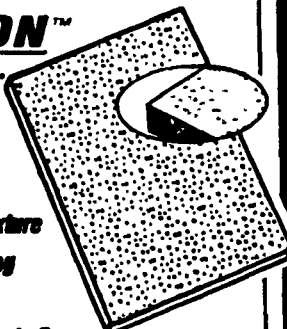


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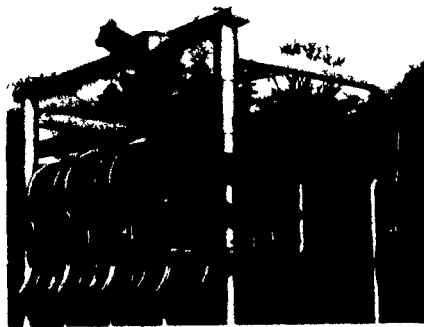
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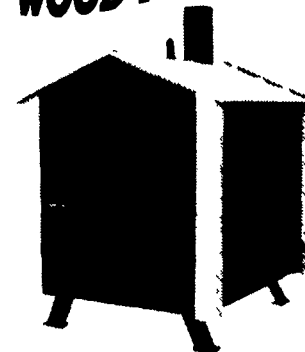
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Milk Urea Nitrogen TESTING ON OCTOBER 1

Economics of MUN Testing



Protein is the most costly ingredient in dairy rations. Some farms overfeed protein by 10-20%. Overfeeding protein by 20% would cost producers about \$50/cow/year > 100 cows = \$5000/year
Cost of MUN testing is 15¢/cow/month
MUN testing can signal excess protein feeding or energy imbalance. If correct adjustments are made it could significantly improve the efficiency of milk production and conception rate.



To learn more, contact PA DHIA .

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