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no.1 (1971)

CULTURAL EXTENSION SERVICE

UNIVERSITY OF MINNESOTA

INSTITUTE OF AGRICULTURE
ST. PAUL, MINNESOTA 55101



Dairy Update

METHIONINE ANALOG SUPPLEMENTATION

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UNIVERSITY OF MINNESOTA
DOCUMENTS

ISSUE 1

INTRODUCTION:

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Within the last two to three months, popular farmer magazines (six to be exact) have carried ads or articles on methionine hydroxyanalog reporting increases of 1000 pounds of milk, reduction of ketosis, and correction of milk fat depression. The purpose of this update will be to give you more information and facts so that you can answer questions concerning M-analog supplementation.

INFORMATION:

Just what is M-analog? It's a scientific name for DL-alpha hydroxy gammamethyl mercapto butyrate-calcium or in simpler terms, it is a compound similar to methionine, an essential amino acid. In the ruminant when amino acids reach the rumen, microbial "bugs" deaminate the amino acid releasing ammonia and use the remaining structure for energy or bug protein. Promoters of M-analog initially claimed that M-analog bypassed rumen degradation making it available lower in the digestive tract to function as an amino acid accounting for its beneficial effect. Recently, however, the promoters claim M-analog stimulate greater protozoa growth and multiplication which will result in the beneficial effects. No clear-cut documented research of how M-analog does its "thing" has been published except for indirect use of methionine, the amino acid.

What do the results indicate? Research done by DuPont (which markets Hydan) in three states (Delaware, Virginia, and Georgia) reported an increase of 823 pounds of milk, 46 pounds of fat, and 1019 pounds of 4% fat corrected milk. This was based on 184 cows under field conditions. The greatest response was seen in high producing mature cows with no effect due to location, season of the year, or seasonal change of the diet. Research conducted on the University of Minnesota, Rosemount Station indicated no increase in milk or milk fat in cows receiving M-analog. In research conducted at the University of Wisconsin, Madison, under controlled research conditions demonstrated no advantage to M-analog in milk production, fat test, rumen acid levels, or circulating blood metabolites under normal and milk fat depressing conditions.

	<u>Control</u>	<u>M-analog</u>
Normal Conditions (milk)	40.5 lb.	40.5 lb.
(fat test)	3.6%	3.6%
Milk Fat Depression (milk)	40.3 lb.	39.4 lb.
(fat test)	2.5%	2.4%

Research at Wisconsin demonstrated little if any advantage to feeding M-analog to control ketosis.

This archival publication may not reflect current scientific knowledge or recommendations.
Current information available from University of Minnesota Extension: <http://www.extension.umn.edu>.



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Here are some points to consider:

- 1) The high producing cow could be deficient in methionine (which has not been proven conclusively) which M-analog is thought to correct.
- 2) The FDA has accepted the feed as an additive with no limitation on withdrawal or amounts. The National DHIA has allowed it to be used in feeds for official records since it is considered a form of a natural ration constituent.
- 3) High producers and older cows in peak lactation in the DuPont research responded to M-analog.
- 4) Most of the positive research has been in field studies while under controlled laboratory conditions the results have been minimal. Best results have been seen in the eastern and southern states. Mid-western states have not been successful with M-analog additions.
- 5) If you decide to feed M-analog, mix one gram of analog per pound of concentrate (20-30 grams per day) and mix well because M-analog is unpalatable. M-analog is not a substitute for a sound feeding program.
- 6) The analog costs 80 cents per pound. A cow consuming 4500 pounds of concentrate per year would consume ten pounds of M-analog or cost \$8/year. To break even an increase in production of 150 pounds of milk per cow is needed without considering mixing and added labor costs.

SUMMARY:

The economics of situation is of prime importance. Remember, a farmer must get an increase in production to pay for all costs before it is a good management decision. I feel the research results have not been consistent and would not recommend that every Minnesota dairy farmer begin feeding M-analog. Future research may change our recommendation. Remember, extension personnel do not make decisions; we provide the information to do so intelligently!

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