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By V. S. Packard
Extension Specialist Dairy Products

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THE ABNORMAL MILK CONTROL PROGRAM (AMC)

At a number of dairy producer meetings this winter, and from other sources, it has become apparent that much confusion exists among dairymen regarding results of screening tests applied to their milk. This is due, we believe, to several factors, among them (1) abbreviated forms of reporting, (2) reporting screening test results as somatic cell count rather than specific test values, and (3) confusion over which test is being applied. In some cases, all test results are reported, in others, only those test results found to be at 1.5 million or higher somatic cell count levels. If we are to get all that we should out of the AMC, some attempt should be made to clarify the situation.

WISCONSIN MASTITIS TEST (WMT)

The WMT is probably the most widely used of the screening methods, but problems have arisen, due in large part to misunderstanding of the relationship between WMT readings and somatic cell count which, at best, are only rough approximations. The relationship observed by the original researchers has been shown to be in error to some extent. As well, the influence of sample age was not clearly defined until a number of years after the program got underway. As a matter of interest, we went to the work of Kroger and Jasper (1) to prepare the information found in table 1. In all cases, please note that test results decline markedly with age. But remember, these are rough estimates at best, and the reporting of anything but screening test values as such could be misleading.

We put together the information in table 2 to show the general relationship between various screening tests over a range of somatic cell counts.

Table 1. Wisconsin Mastitis Test readings and approximate somatic cell count of milk samples of various age⁽²⁾

Approximate somatic cell count	WMT readings at		
	<u>1-day⁽¹⁾</u>	<u>2-days⁽¹⁾</u>	<u>3-days⁽¹⁾</u>
250,000	9	8	5
500,000	15	13	10
750,000	18	16	12
1,000,000	22	19	15
1,250,000	23	21	16
1,500,000	24	22	17
2,000,000	28	25	20

(1) This designation indicates the average age of the milk supplies making up the sample, i.e., age average does not exceed 24, 48, and 72 hours for 1-day, 2-day, and 3-day samples, respectively.

(2) Table data derived from the work of Kroger, D. and D. E. Jasper, Journal of Dairy Science 50(8):1226. 1967.

Table 2. Significance of somatic cell counts over a range of counts

<u>Somatic cell count/ml.</u>	<u>Significance</u>
0 - 250,000	No pathogenic bacteria present, no mastitis. Negative reactions by MWT ⁽¹⁾ and CMT ⁽²⁾ tests. WMT ⁽³⁾ readings of 5 or less.
250,000 - 500,000	Considered normal milk (no pathogenic bacteria). May show trace (T) reaction by CMT. (A precipitate begins to form, thickening into a gel as concentration of cells increases.) MWT--(trace reaction). WMT--(5 - 13 mm.).
500,000 - 1,000,000	Some mastitis or other abnormality is present. CMT--weak positive (1) (a distinct precipitate forms, but no gel, and may be reversible, disappearing upon continued movement of the paddle). MWT--trace reaction; about 40% of the tests may still show negative. WMT--(11 - 19 mm.).
1.0 - 1.5 million	Milk is abnormal, either from mastitis or for other reasons. Warning letter is sent to the producer. CMT--(weak positive (1)). MWT--(83% of tests show 1+ reaction). WMT--(17 - 22 mm.).
1.5 - 2.0 million (and higher)	Milk is abnormal. CMT--positive (1 to 2). Mixture thickens immediately, with some suggestion of gel formation. Upon swirling, mixture tends to move toward the center, leaving bottom of outer cup edge exposed. MWT--(1+ to 2+). WMT--(20 - 25 mm.).

(1) MWT = Modified Whiteside test.

(2) CMT = California Mastitis test.

(3) WMT = Wisconsin Mastitis test.

SOME THINGS WE MIGHT DO TO IMPROVE MATTERS

It seems to us that there are two or three thoughts we might consider to help dairymen and to clarify misunderstandings.

These follow:

1. Report all test findings, irrespective of results. This way the producer will have some kind of record indicating trends within his herd. It may well be the only record he has.
2. Report screening test values per se. Don't try to report somatic cell counts except when they are determined by the microscope or other suitable means. Screening tests results are only that. The relationship between such values and somatic cell count is a general one. Exceptions may be numerous.
3. Don't abbreviate screening test results when reporting them to dairymen. When reporting somatic cell counts as determined by the microscope, be sure, if you do abbreviate, that values are readily understandable.
4. Be consistent. Once you've informed dairymen of your specific program, stick to it religiously--or inform him of any changes you may make.

Agricultural Extension Service
Institute of Agriculture
University of Minnesota
St. Paul, Minnesota 55101

Roland H. Abraham, Director

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