

A SURVEY OF LEUCOCYTE COUNTS OF MILK IN FLORIDA

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In 1950 the first National Conference on Interstate Milk Shipment was held in St. Louis, Missouri. This group was composed of industry and regulatory people. One of the problems they recognized was that it would be necessary to eliminate abnormal milk from the market supply, and started proceeding towards this objective. Late in the 50's through the combined efforts of the National Conference on Interstate Milk Shipments and the International Association of Milk, Food, and Environmental Sanitarians, the National Mastitis Council was formed. They started working for a national uniform approach for combatting abnormal milk in the market supply.

In the 1963 meeting of the N.C.I.M.S. in Memphis, the first report and recommendation was given for a comprehensive plan for abnormal milk control. Continued work of this group resulted in an agreement that all states participating in the N.C.I.M.S. program would develop a method for screening the milk supplies for the presence of abnormalities by July 1, 1966, and be fully operative by July 1, 1967.

The National Mastitis Council had described abnormal milk as milk with a leucocyte count in excess of 500,000 per millilitre. The question then is asked: What are leucocytes? They are a normal constituent of the blood and are commonly called white blood cells. Certain types of the white blood cells are one of the body's important defenses against infection. When an infection occurs in the body these cells migrate to the infected area in large numbers, in an attempt to combat and limit infection.

Should this infection occur in the udder, it is known as mastitis. By making a count of the leucocytes, one is able to determine if mastitis or abnormal milk is present. The U.S.P.H.S. in their publication, No. 1306 "Screening Tests for the Detection of Abnormal Milk" has described five tests or procedures that can be used for screening milk. The Wisconsin Mastitis Test is the test of choice, since it is most strongly recommended by the Public Health Service; also many of the States have selected this procedure.

Of the five screening tests described in the above mentioned publication comparisons were made between the Catalase, Wisconsin Mastitis Test, and Direct Microscopic Leucocyte Count. The Modified Whiteside and California Mastitis Tests are more adaptable for cow side testing and were not considered for laboratory use. It was found that results of the WMT and the DMLC compared much more closely than those of the catalase test. The WMT was then chosen because (1) it is much more rapid and (2) one can obtain reproducible results.

The Florida State Board of Health Laboratories started making WMT tests on all raw milk samples submitted, beginning with July 1, 1967. The laboratory results are sent to the person or agency submitting the samples, who in turn, informs the individual dairyman of the results on his milk. The reports are compiled by the Division of Veterinary Public Health, Florida State Board of Health, beginning in the month of August, 1967. The results are totaled on a county basis under four headings: (1) Numbers of samples showing a leucocyte count of less than 500,000. (2) Those between 500,000 and 999,999. (3) Those between 1 million and 2 million. (4) Those over 2 million. The following table including results of August 1967 - February 1968, shows the percentage of the samples tested falling under each heading:

	<u>&lt;500</u>	<u>500-999</u>	<u>1mil.-2mil.</u>	<u>&gt;2mil.</u>
Aug.	30.40	44.42	24.47	.71
Sept.	21.97	46.62	30.92	.49
Oct.	34.98	41.85	22.19	.98
Nov.	30.36	42.08	26.68	.87
Dec.	31.69	42.90	25.14	.27
Jan.	51.13	40.60	8.27	.00
Feb.	38.18	44.09	17.73	.00

You will note by this limited data that there is no definite trend toward general improvement. It appears that those over the two million may be lessening; however, those under the other headings are up and down. As the study continues, we are hopeful that the counts will improve.

I was interested to see if there were any differences in different areas of the State, so I computed the percentages for the various areas, and found that a similar picture existed throughout the State. I then took a look at different size dairies and found no significant difference between the large, medium, or small dairies.

I believe this points out that there is still a lot to be done in order to get the leucocyte counts down to an acceptable level. Certainly the work of the University personnel and the Quality Milk Council can aid materially in the accomplishment of this objective.