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WHY THE MILK CONTROL LABORATORY
IS OF MAJOR IMPORTANCE

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I THE HEALTH RISKS OF A CENTRALIZED MILK SUPPLY

The centralization of milk marketing which resulted from the establishment of the early city milk plants with payment of milk producers according to the fat content, led to more effective control of adulterations of milk but at the same time increased the health hazards. Following pooling of the contaminated milk an eventual milk-borne infection would attain a much wider radius of action and spread. Especially so, as the traditional practice of boiling milk prior to use will be discontinued since the public relies on the alleged better quality of the milk treated in a dairy plant.

The early period of city milk plants in Europe, as well as in the U.S.A., therefore became the era of the great milk-borne epidemics. In this connection, stress should be laid on the great responsibility undertaken by authorities who try to force through the establishment of market milk plants for the distribution of bottled pasteurized milk within certain less developed areas where the necessary system of control for technical and economic reasons cannot be introduced at the same fast pace as the building and construction of modern dairy plants.

To change the milk supply to marketing of bottled pasteurized milk when the necessary conditions are lacking, as regards disease control in dairy herds, milk hygiene and milk control, incurs great risks in general, because the public, confident in the improved keeping quality of the pasteurized bottled milk over the raw loose milk to which it has been accustomed, will abandon the milk boiling practice. Thus the public is left at the mercy of the safety of pasteurized milk, and from experience gained, we know it takes a highly developed hygienic organization to produce pasteurized bottled milk which is safe and free from recontamination. Hence it is to be expected that such change-over of the milk supply system will make the problem of milk-borne epidemics of current interest within areas where this problem was non-existent up till now. It is hoped that such countries will be able to learn, faster than did Europe and North America, how to command the centralized dairy plant operation's risk, i.e. the milk-borne epidemics. In Denmark, the era of milk-borne epidemics ended only about 1945.

II THE ROLE OF THE MILK CONTROL LABORATORY

An indispensable tool in achieving a safe milk supply is an efficient system of laboratory control of milk based upon a decentralized network of milk control laboratories equipped and staffed to carry out chemical and bacteriological work.

Laboratory control of milk started with a physico-chemical control, to combat adulterations and falsifications of milk but today, it has developed into a much wider field of activity owing to the introduction of hygienic-bacteriological methods. In this field, milk control can claim to be among the pioneers. Already at an early stage, it was realized that bacteriological testing of milk would constitute a very efficient means of promoting milk-hygienic work in the milk-producing herds as well as in the dairy plants. Later, this kind of applied bacteriology spread over other fields of food control, and today, hygienic-bacteriological food control must be considered just as important, or in many cases, even more important than chemical food control.

The bacteriological era of food control has led to a new evaluation of food control activities. One cannot put an end to microbial contamination by police action or legal proceedings only. To the chemist, the analytical result in itself offers a self-explanatory direction on how to remedy the deficiencies. Bacteriological data have no such intrinsic value. They need interpretation and professional advice to correct the situation. What matters is that action should be taken to fight undesirable types of micro-organisms and to improve the general hygienic standards of production. Obviously this cannot be achieved merely by quoting figures from a laboratory report. Teamwork between laboratory and field workers is generally the only way to tackle the problem of tracing sources of bacterial contamination or localizing faulty procedures in handling and processing foods.

Hygienic-bacteriological milk control therefore takes the form of a consultative control programme rather than that of a police action. Cooperation between the milk control organization and the milk industry is what is called for.

Perhaps there are some people who still do not understand this concept and believe they can rely on the setting-up of standards and the performance of tests, leaving the police to deal with sub-standard results. People with a background in biology, of course, cannot **accept** such a procedure.

If laboratory methods are to be utilized in the hygienic control of milk - or other foods of animal origin - as is essential in the interest of public health, the closest possible coordination and cooperation must also be instituted between laboratories and field staff. This requires considerable decentralization of the laboratory service. Laboratories will have to be located in the field as the centre of activity with field staff attached to them.

Bacteriological and biological hygienic examinations of milk cannot be performed effectively for a large area at one central laboratory. The laboratory staff must become familiar with the work and problems of the herd inspection service and dairy plant operations, and the workers in the field must be given an opportunity to learn about the work in ~~the~~ laboratory and its possibilities. The objective should be to amalgamate the whole staff into one homogeneous group with a common way of thinking, prepared to create an active and progressive line of milk hygiene policy. The field should bring its problems to the laboratory for solution through investigation and experimentation, and the laboratory findings should be converted into practical results through the field staff, acting as an executive branch.

By building up the control organization in accordance with these principles, the milk control laboratory becomes a real and useful tool with which the milk industry and the farmers will find it profitable to maintain a cooperative relationship instead of **fighting** or tolerating the milk control service.