

DAIRY LABORATORY, WALLACEVILLE.

The number of samples dealt with to assist the Dairy Division's instructional staff during the past year shows a slight increase to not far short of 3,300. By the introduction of improved methods and organization during the past few years the number of samples dealt with has increased considerably. It would appear that a limit has been now almost reached, determined by the existing staff and facilities rather than by the need for extending this work in various directions.

As in previous years, the testing of butter samples for contamination has provided a large proportion of the bacteriological work. In addition to the regular testing of samples from Wellington and New Plymouth, some trouble has been taken to procure samples for testing from several of the smaller grading ports. The results indicate the need for continuing and extending this work.

For yeast and mould counts upon butter the roll-tube method has continued to be used so that greater accuracy, especially of low counts, can be obtained. A further improvement for obtaining more accurate mould counts has been successfully tried out. By the use of cylindrical bottles of suitable size, into which 1 gram portions of butter are weighed, direct mould counts upon 1 gram of butter can be obtained without involving the use of saline dilutions.

The number of cheese starters tested for contamination shows a slight increase. Too many of these starters are still found with a varying amount of contamination.

The number of water samples procured from butter-factories for testing has again further decreased as compared with the previous season. This is partly due to the ice-boxes required being used for other purposes.

It had been hoped during the past season to interest the dairy industry in the value of the Resazurin test for milk and cream grading, but the amount of progress to be recorded is again comparatively small. A few men who have made numerous trials of the test, especially for cream grading, have obtained useful results. This indicates that if the test were more widely known its value would be better appreciated.

The testing of butter for metallic contamination has again formed a large part of the chemical work in the laboratory. With a view to minimizing keeping-quality defects due to high copper content, an increased number of samples of butter have been tested for copper contamination. This work has shown that in most cases the copper content of New Zealand butter lies within satisfactory limits.

During the past winter arrangements were made, with the assistance of Mr. A. G. Frieberg at Auckland, to prepare a series of standard colour cards to be used for the pH tests upon butter at the grading-stores throughout the Dominion. Copies of these cards have also been supplied to the Butter Instructors to enable them to make tests upon buttermilk direct from the churn. A few results have been obtained which indicate satisfactory correlation between the buttermilk pH tests and the pH tests upon the corresponding butter done at the time of grading.

For many years past information has been collected and circulated from time to time to the Dairy Division's Instructors with a view to explaining the properties of various alkalies and detergents, in order to encourage the use of newer types of alkalies. From time to time samples of various cleansers in use in dairy factories have been procured for examination, and work of this kind can usually be dealt with in the winter when other work is less pressing.

Some attention has recently been given to a difficulty known as "oiling off" which occurs at certain times of the year in the composite samples at certain dairy factories. Various proposals have been investigated with a view to either preventing the occurrence of this trouble or obviating the difficulties which its occurrence gives rise to.

In addition to the larger groups of samples referred to above, a number of miscellaneous samples of various kinds have been dealt with. Various other matters which have arisen from time to time have received attention.

ZONING OF CREAM- AND MILK-COLLECTION AREAS.

During the period under review the work of the Executive Commission of Agriculture in connection with the zoning of cream-collection and milk-receiving areas for dairy companies was continued.

In the Wairarapa district all the butter-manufacturing companies have now been allotted exclusive territories. On the West Coast of the South Island the remaining proprietary dairy company in that district has been purchased by a neighbouring co-operative company, and a boundary as between the West Coast companies and the Canterbury companies has been defined. In North Taranaki a boundary between two butter-manufacturing companies was fixed, thereby completing the zoning of that district. A number of requests from various districts for revisions of existing zoning orders were dealt with and, where necessary, alterations to zones were made. The Commission has also acted as arbitrator in a number of matters affecting neighbouring companies. A few amalgamation projects between co-operative butter-manufacturing companies have been set on foot and are under consideration by the companies concerned.

CERTIFICATE-OF-RECORD TESTING.

The past two seasons have been unfavourable for high production records, with the result that fewer cows have been entered for the Division's certificate-of-record test.