Attention is also being devoted to problems of industrial mycology, such as the destruction of tent canvas by moulds and the complete sterilization of wraps used for beef carcasses in the chilled-meat trade.

Certain investigations of problems or portions of problems of interest to the Bureau have been undertaken by members of the staffs of Massey and Canterbury Agricultural Colleges, while a large measure of co-operation has characterized the association of these Colleges, the Fields, Horticulture, and Live-stock Divisions of the Department of Agriculture, and Cawthron Institute with the different Divisions of the Bureau. In consequence, more comprehensive attacks are being made on the main crop problems of the Dominion, and a much fuller appreciation of the value and need for combined effort now exists.

DAIRY RESEARCH INSTITUTE.

Important advances in the study of the technique required for the maintenance of single-strain starters, which have been found to control openness in cheese, were made during the year, whereby it was shown that the system of "heavy inoculation" combined with a true aseptic technique was entirely successful in maintaining starter activity for an indefinite period.

In order to place the commercial application of these findings on a sound footing, a trial of the methods recommended by the Institute was carried out by members of the Institute's staff in three factories in Taranaki during February. No difficulty was experienced in maintaining the activity of a single-strain culture, and failures in other factories were shown to be due to faulty technique. Experience has proved it to be essential to give *personal* instruction in the correct technique; where this was given, no further trouble was experienced. The solution of the main problem—the maintenance of starter activity indefinitely—has left the way open to work out the most effective cheesemaking procedure. In this connection there is definite evidence that the flavour of the cheese is improved by adding to the cheese milk selected types of flavour-producing organisms in addition to the single-strain starter, and work on this subject is being continued.

Experiments on the storage of cheese at low temperatures have shown that storage at 31° F. is a perfectly satisfactory method of keeping cheese for such periods as may be called for in exceptional circumstances.

Studies on the problem of taint in dairy-produce have been continued, and buttermaking experiments have shown that good-quality butter can be made from clover-tainted cream when it is impossible to avoid some degree of taint in farming practice. Grazing and cattle-feeding experiments have also shown that these taints can be reduced to a negligible degree by controlling the clover content of the pastures.

A systematic study of the moulds liable to contaminate dairy-produce, and their source, is being made, with a view to reducing their incidence by the institution of suitable methods of control.

Further experiments have been carried out on the important subject of the influence of the type of feed consumed by milking-cows on the dairy-produce obtained.

At the request of the Department of Health, the Institute undertook the responsibility of pasteurizing and bottling milk supplied daily to school-children in Palmerston North. The Department of Health supplied the necessary up-to-date plants, which were installed in the Massey Agricultural College dairy factory. A high standard of milk quality has been maintained throughout the whole period, and all concerned have expressed satisfaction with the operation of the scheme.

The customary meeting of dairy-factory managers was held in April to explain the results of research work carried out in the past season. Addresses were also given at various dairy conferences, articles were contributed to the public press, and a large number of technical papers were published. By these methods wide dissemination of the results of the Institute's work was secured.

WHEAT RESEARCH INSTITUTE.

The Wheat Research Institute has continued to give valuable service to wheatgrowers, millers, and bakers, in addition to pursuing and developing its wheat-breeding activities and fundamental researches on the physical and chemical qualities of flour and bread.

The Chief Chemist of the Institute spent nine months abroad, and furnished a valuable and comprehensive report on the latest developments in America, Europe, and Australia in connection with the testing of flour and the artificial drying of wheat.

A large number of moisture determinations in wheat were carried out by the Institute for farmers during the past season, in order to determine whether samples of wheat were in optimum condition for harvesting.

The varying characteristics of wheat from season to season, due to varying growing and harvesting conditions, have in the past caused difficulties to bakers by reason of the different treatment required to get the optimum result from each season's flour. This trouble has now been overcome as a result of the steps taken by the Institute to secure supplies of each new season's wheats, mill and bake them by various methods, and advise the bakers by means of bulletins as to the best method of treatment.

The milling and baking qualities of Cross 7, which was grown on 12,000 acres in 1937, remain outstanding. Two other wheats of outstanding quality are nearing the end of their breeding trials, and will probably be distributed to farmers within the next two years.

During the past year a national research scholar has carried out a valuable series of investigations on the action of ascorbic acid as a bread improver and on the proteolytic enzymes of flour.