REPORTS OF RESEARCH COMMITTEES OF THE COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH.

DAIRY RESEARCH INSTITUTE.

Dairy Research Management Committee: Hon. Sir George Fowlds (Chairman), Mr. A. Morton, Mr. J. Murray, Mr. T. A. Winks, Mr. W. Iorns, Mr. Dynes Fulton, Mr. Quentin Donald, Professor H. G. Denham, Dr. C. J. Reakes, Mr. W. Singleton. Director of Research: Professor W. Riddett.

During the past year the following lines of work have been engaging the attention of those at the Dairy Research Institute. Some of these projects have been completed; work on the others still is in progress:—

(*a*) *Butter*:—

(1) The influence of the rate of cooling cream and churning temperature on the spreadability of butter.
(2) The relative advantages of making butter from fresh cream and from cream treated with starter.
(3) The possibility of avoiding wood taint from *Insignis*-pine timber by treating it with a casein preparation and formalin.
(4) The cause of primrose colour in butter, and factors giving rise to toppiness.
(5) The comparison of different parchment papers and the merits and demerits of using aluminium- and tin-foils backed with parchment, and the same foils backed with waxed paper, parchment papers sprayed with metal, and waxed papers of different kinds.
(6) Methods of determining quickly whether butter has been made from overneutralized or overacid cream.
(7) Methods of determining the acidity of cream more accurately than by titration.
(8) The devising of methods of determining in the laboratory whether butterfat is undergoing slight change before such a change is apparent to the senses.
(9) Reasons for butter deteriorating in storage.
(10) Comparison of the accuracy of different methods of estimating fat in skim-milk.

(*b*) *Cheese*:—

(1) Methods of preparing and maintaining cheese-starters, with a view to preserving their purity and vigour from day to day.
(2) The effect of starters and other factors concerned with the development of flavour in cheese.
(3) The identification of organisms and other biological conditions which injuriously affect milk for cheese-making.
(4) Chemistry of the changes affecting the acidity of milk and curd during the cheesemaking process.
(5) Changes at monthly intervals in the character of the curd from the milk of individual cows of the Massey Agricultural College herd.
(6) The effect on cheese quality of manufacturing cheese from—
    (i) High- and low-testing milk, respectively;
    (ii) Cooled and uncooled raw milk, and the same milk pasteurized at 150° F. and 160° F.;
    (iii) Milk produced on land that has been limed and not limed, respectively;
    (iv) Curd "dried" at different degrees of acidity;
    (v) Curd cooked at different temperatures, different rates, and in different ways;
    (vi) Curd stirred to varying extent;
    (vii) The same milk treated with different starters;
    (viii) Milk to which water has been added;
    (ix) Milk acidulated with hydrochloric acid before adding starter;
    (x) Curd hooped at low, medium, and high temperatures;
    (xi) Curd milled at varying degrees of acidity; and
    (xii) Curd treated with salt containing magnesium and calcium impurities.
(7) Comparison of bandage-cloths of different strengths.
(8) Study of the flow of moisture in cheese during pressing and curing.
(9) Correlation between changes in acidity of cheese between making, fourteen days old, and four months old, and their influence on cheese-quality.
(10) The reproduction of discoloration, the isolation and effects of organisms from discoloured cheeses, the chemistry of the changes occurring in discoloration, and the influence of curing temperatures on discoloration.
(11) Comparison of the accuracy of different methods of determining casein and the relation of casein and fat tests to cheese-yield, with a view to arriving at a rational and simple method of paying for cheese-milk.
(12) Comparison of different methods of grading milk.