

tentative standard samples of each grade, which are submitted to the Western Committee on Grain Standards. When the standards are set, their quality characteristics are determined and a report is released by the Board for the information of prospective purchasers of Canadian grain. Throughout the remainder of the crop year, the Laboratory continues to collect and test samples of various crops in order that the Board may have information on the current quality of grain in storage and in transit, and a final record of the quality of all grain shipped during the crop year. Annual records are prepared showing the variations in the quality of wheat produced in different districts, inspected at different points, unloaded in different elevators, and shipped from different ports. Information is also provided on the variations in quality both within and between grades, at monthly intervals during the crop year, and at various stages of the movement from producer to consumer. Similar though less extensive records are kept for durum wheat, barley, flax, oats, and rye.

The Laboratory also tests numerous individual samples, the grade or quality of which has been questioned by a producer, inspector, or purchaser. A fairly steady demand exists for wider investigations relating to day-to-day grading problems; the effects of artificial drying, frost damage, bleaching, bronzy-green kernels, immaturity, and taints, on milling and baking quality are given careful study. About half the Laboratory's time is given to more fundamental research comprising investigations designed to improve and standardize laboratory methods used in assessing the quality of cereal grains, and comparative studies of the quality characteristics of different varieties and of grains grown under different environmental conditions are also carried on.

Most of the major investigations undertaken form part of a broader program of studies formulated and directed by the Associate Committee on Grain Research of the National Research Council and the Dominion Department of Agriculture, on which the Board of Grain Commissioners is represented by two members of the Laboratory staff. As a result of this work a very considerable body of reliable information has been collected on the milling and baking characteristics of Canadian varieties of wheat and these have been classified with respect to quality, and thus with respect to the commercial grades for which they are eligible. Moreover, there has been steady improvement and development of the methods used for assessing quality both on a macro- and a micro-scale, and a concurrent expansion of the services given to Canadian plant breeders by testing their new hybrids and selections.

In 1932 the attention of the Associate Committee was drawn to the need for research on the macaroni-making quality of durum wheat. A grant was made for the purpose of initiating a program of investigations in that field and such investigations have been carried on at the Laboratory since 1933.

The Board has at its disposal a laboratory that is better equipped for investigations of the macaroni-making quality of durum wheats than any other laboratory on this continent. Through the co-operation of the Department of Agriculture, considerable progress has been made in determining the macaroni-making qualities of established varieties of amber durum wheat, and in determining the effects of environment on these qualities. Improvements in the equipment and methods used in the durum laboratory are being sought continuously. At present, particular