

This is about 400 fewer millings and 1,000 more bakings than in the previous year.

Other laboratory work included—

Moistures of wheats and flours	1,278
Soil moistures from wheat plots	92
Complete bran and pollard analyses (18 in duplicate)	36
Complete bread analyses (12 in duplicate)	24
Partial bread analyses—moisture and protein	4
Proteins in flours (90 in triplicate)	270
Ash of flours (96 in duplicate)	192
Gassing tests of flours—routine	1,242
Gassing tests—special wheats	300
Gassing tests—on baking problems	464
Farinograph records	185
Diastatic activity tests	189
Refractometric starch damage tests (60 in duplicate with 60 checks)	240
Starch damage tests (iodine)	446

In addition to these actual tests recorded, a large amount of time has been spent in devising and adapting apparatus for future work, and many more trials than recorded have been made while testing these appliances.

Sprouted Wheat.—The harvest was the wettest ever recorded in New Zealand. At Lincoln nearly 10 in. of rain fell from the 15th January to the 28th February—the normal harvest period. Every district in New Zealand except Central Otago had a similar experience. The result was that practically all the wheat that was not harvested very early was severely sprouted, and reports indicate that 51 per cent. of the wheat handled by mills was more or less seriously damaged. The necessity of using these millions of bushels of sprouted wheat to the best advantage threw a great deal of work on the Institute.

The problem was almost new to us, and most of the year was spent in devising tests to measure the degree of damage, from a baking point of view, that the wheat had suffered, and in advising millers of the proportion of particular lines which could safely be used. That the baking trade passed through the season with a relatively small amount of trouble was gratifying evidence of the co-operation of the millers and the Wheat Research Institute.

Farinograph.—The rush of work on sprouted wheat restricted the testing of the Farinograph as a measurer of flour quality, but what work was done makes it certain that the instrument is an accurate measurer of quality on a broad basis.

WHEATGROWING PRACTICE.

Investigations into the practice of wheatgrowing have been continued without extension into any new lines.

For the fourth year the extracts from the threshing returns supplied by the Government Statistician have been analysed on the basis of varieties and districts. The results are published in *The Wheatgrower*, which reaches the hands of every grower of wheat. In the latest returns there is distinct evidence that the trend of wheatgrowing is following the recommendations made by the Institute in earlier years.

Soil moisture determinations at weekly intervals have been continued for the fifth season. An experiment on feeding-off wheat by sheep was continued for the fourth season.

CO-OPERATION WITH THE DEPARTMENT OF AGRICULTURE.

The Department of Agriculture has continued to be of the greatest assistance to the Institute by making variety trials in all parts of the country and certifying wheat seed, and also by allowing its officers to act on the Specialists' Committee, which discusses the kind of experiments with wheat which should be conducted.

PHORMIUM RESEARCH.

REPORT ON WORK AT MASSEY AGRICULTURAL COLLEGE.

By Dr. J. S. YEATES.

The past year has again been marked by notable advances in the development of this work, particularly towards its application in industry. The considerable extension of planting at the Easton area, and the discovery of large supplies of good varieties, indicate that commercial production of fibre from such varieties is nearer to realization than was previously considered feasible.

Even more significant has been the broadened outlook and the prospect of considerable acceleration of the work as a result of the rehabilitation scheme at present being considered by the industry. The visit in October of Mr. Alfred Wigglesworth, Chairman of the Imperial Institute Advisory Committee on Vegetable Fibres, was particularly valuable at this juncture. Not only were the views of such an experienced man valuable to the work now being carried on, but also the contacts that were established should be of considerable value in research and in furthering good will in European markets.

A most encouraging feature this year has been the development among consumers in Britain of a conviction that New Zealand hemp has qualities which entitle it to a place among or near to the more expensive "soft" fibres rather than with "hard" fibres. Appearances indicate that here is available for exploitation a market which New Zealand hemp should be able to fill at prices above those which it realizes as a "hard" fibre.

A large proportion of the time has been spent on matters concerning the rehabilitation scheme for the industry—a scheme which it is hoped will result in the setting-up of a full-scale experimental area and mill.