

WHEAT RESEARCH INSTITUTE

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WHEATGROWING

Areas and Yields of Varieties.—In the harvest of 1946, Fife-Tuscan increased further by 3·4 per cent. and Cross 7 by 2 per cent., mainly at the expense of Tuscan. The percentages of the main varieties were as follows : Cross 7, 67·3 per cent. ; Fife-Tuscan, 11·9 per cent. ; Tuscan, 9·4 per cent. ; Dreadnought, 5·7 per cent. ; Tainui, 2·5 per cent. ; Hunters, 1·4 per cent. According to the sowing estimates for 1946-47, Fife-Tuscan increased its area by 3 per cent. to 14·9 per cent., Cross 7 reduced it by 2·3 per cent., with the other varieties remaining more or less the same.

WHEAT-BREEDING

New Varieties.—A decision has been reached to distribute two new varieties which have been under test for a number of years. The first, as yet unnamed, is 78,01, from the cross Tuscan \times Tainui. This wheat has a baking-quality about as good as that of Cross 7, matures slightly earlier, and is a little taller than Cross 7. In twenty-eight accurate trials extending over the last six years it gave an average yield increase over Cross 7 of 3·8 bushels per acre, equalling 8·4 per cent. This represents, at a mean yield of 33 bushels per acre, an increased return of about £1 per acre.

The second wheat, 140,014, from the cross Cross 7 \times Tainui, has now been named "Hilgendorf" wheat, after the late Dr. F. W. Hilgendorf, first Director of the Wheat Research Institute and pioneer of wheat improvement in New Zealand. Its special feature is its excellent baking-quality. Without exception it has been markedly superior to Cross 7 in every trial, and to Marquis wherever the two were grown together. In fourteen trials which were tested for protein content, the new wheat had an average protein content of nearly 2 per cent. more than Cross 7. In a trial at Lincoln against high-quality wheats from New South Wales which command a premium, our wheat was distinctly better than the strongest New South Wales wheat, Pusa 4.

This wheat does not seem to be suited for light land, but on medium to good land it has yielded the same as, or slightly less than, Cross 7. To have it widely grown may require a premium for quality. This and the best ways of using this wheat are being explored.

New Breeding Lines.—Some of the new lines under test are giving excellent promise of increased yields. Two lines yielded about 20 per cent. more than Cross 7 both at Lincoln and at the Tai Tapu Substation. Others gave both good yields and superior baking-quality.

The total number of plots at the Lincoln Station was 17,878, and at Tai Tapu 1,394.

CEREAL CHEMISTRY, MILLING, AND BAKING

Eighty per cent. Extraction Flour.—Towards the end of April, 1946, the Government announced that from 1st May the rate of flour extraction in New Zealand mills must be raised to 80 per cent. and so use less wheat in making the amount of flour needed.

As the extraction rate is raised, even with the best techniques, the flour becomes less capable of making the well-risen loaf consumers expect, and the whole attention of the Christchurch laboratory was given to assisting the millers and bakers to minimize this undesired effect on the quality of the flour and bread.

This assistance was in the nature of advice to millers and bakers, the design of a special machine, additional testing-work, and the sending of technical officers to help in adapting mills.

That the change in the bread was scarcely noticed in many districts is largely to be attributed to the skill and energy displayed by the millers, but the leaders of the milling industry have stated that a major help to them was the centrifugal detach-er designed by the Institute. This machine is mentioned in last year's report, and was