

CEREAL PRODUCTION IN CANTERBURY

higher yields had come to an end, and a reduction began which by 1915-16 had brought the yield down to the level of the early 1890's. Careful systems of crop rotation were not sufficient to maintain fertility, weather may have been unseasonable, and the expansion of dairying had pushed wheat growing off some of the best land. Fluctuations in the acreage had a very marked effect on the yield, the extent of the fluctuations being shown clearly in the following table:—

AREA PLANTED TO WHEAT

| Year | Acres |
|---------|---------|
| 1890-91 | 212,000 |
| 1895-96 | 169,000 |
| 1900-01 | 147,000 |
| 1905-06 | 155,000 |
| 1910-11 | 230,000 |
| 1915-16 | 245,000 |
| 1920-21 | 171,000 |

The larger area in 1910-11 reflects the farmers' dissatisfaction with overseas meat prices; the increase in 1915-16 was probably the result of higher prices after the very low acreage the previous year. The stimulus of wartime shortages was not sufficient in itself, and in 1916 the Government offered a guaranteed price which ensured a reasonable level of production until 1919-20, when the area fell to 115,000 acres, the lowest for many years.

Varieties of Wheat

By 1900 the old Tuscan variety of wheat had been replaced by Solid Straw Tuscan, which was particularly suited to New Zealand's conditions because of its resistance to the threshing action of the wind. It almost certainly originated in one of the Mediterranean countries, and was introduced to New Zealand during the 1880's. It is probable that it is a cross between bread wheats and macaroni wheat.

Although Solid Straw Tuscan spread rapidly, it did not entirely replace Hunters, which, with a stronger straw, stood up better on the heavier land. Hunters was an early introduction, before 1860, from western Europe. By 1910 it had become very impure and was gradually replaced from 1915 by a pure line called College Hunters, selected at Lincoln College. This selection is important as being the first pure line of seed of any kind produced in New Zealand.

These two varieties, Solid Straw Tuscan for the greater part of the wheat-growing land of Canterbury and Hunters for the few pockets of very heavy land, admirably suited the requirements of the growers. New introductions were made from time to time (they had been made even before 1900), but few of these came to stay, and of the majority only the name, if that, remains today.

Among the more important is Jumbuck, a high-quality baking wheat brought to New Zealand about 1901, but its value as a high-quality spring wheat was not recognised until the 1920's. Dreadnought since 1909 has been important in a small area of very heavy land in Waimate, where its potentially high production is able to be expressed.

Velvet and Pearl, similar except for the velvet chaff of the former and the fact that the yield of the latter was



[From the Alexander Turnbull Library photographic collection. Timaru harbour about 1910. From this port large quantities of meat were exported after the breakwater was constructed.

lower and the quality higher, were important in the early years of the century, but acreages in these two varieties rapidly decreased until they disappeared. Velvet was represented by less than 15 per cent. of the wheat acreages in 1920.

Other wheats which were important locally or for a short time only were Federation, Solid Straw Velvet, Hollow Straw Tuscan (the Tuscan before 1900), Sensation, Victor, Red Marvel, Bobs, Talavera (probably a pure selection of Solid Straw Tuscan), Bordier, Yandilla King, White Winter, New Era, and Duluth.

Pickling with bluestone was used to control ball smut, and later, about 1910, formalin was first used and became about equal in popularity with bluestone.

Oats

In the first decade of the century the area in oats ranged from about 150,000 to 200,000 acres, and from 1900 to about 1905 about two-thirds of the area was threshed and about one-third chaffed, the amount devoted to greenfeed being fairly small. Gradually the proportion devoted to chaff rose, and in 1910-11 the two areas were approximately equal, that for threshing being 112,000 acres and that for chaff about 100,000 acres. With the outbreak of war and the great increase in the Army's demand for horse feed, the proportion devoted to chaff rose to about two-thirds of the total (for 1916-17 oats for threshing totalled 82,000 acres and oats for chaff 159,000 acres).

Appreciable areas of oats have always been grown for greenfeed, averaging about 8000 acres per year, though the area has varied from year to year according to climatic conditions. The cereal greenfeed crop is one which fits in with the system of management on the Canterbury mixed

farm. The root crop for winter feed is somewhat unreliable, and particularly in a dry year a cereal crop, usually oats but sometimes black or cape barley, is grown as a supplement frequently after a wheat crop.

The varieties of oats before 1920 were White (Gartons), the main milling oats, usually spring sown, and Algerians (brown), Duns (grey), and Black Tartars, all grown for grazing, chaff, or threshing for feed. These varieties were usually autumn sown, as they stood the frost better than Gartons. For greenfeed (and most oat crops were expected to provide some spring feed before being shut for a crop) they recovered better after grazing and could be grazed more often than Gartons.

Barley

Barley usually occupied an area about a tenth that of the wheat crop, though there were years when it fell well below this. Up to the First World War the area was around the 10,000-acre mark, except for the years 1900 and 1909, when it was about 15,000. Then it dropped to about 6000 acres during 1914-18, when the main emphasis was on wheat growing. This was a crucial period in barley growing also, because yields were very low through barley growing being pushed on to the poorer land. Moreover, the best barley was taken for malting, and seed supplies had become mixed and of poor quality.

The main barley variety during this period was Webb's Kinver Chevallier, commonly called Chevallier. New varieties were introduced from time to time, but were discarded either because they were not suitable climatically or were of low malting quality. In 1919, 100 sacks each of two varieties, New Binder and Plumage, were sent out by Mackie and Co. of Glasgow. These were auctioned in 5-sack