

taken, and in addition the paddock has been twice grazed. The total yield, irrespective of grazing, has been 120 tons of hay, and approximately 200 tons of green material carted to stock or made into ensilage. Each autumn the field has received vigorous cultivation with the solid-tooth cultivator and tine harrows, and is free from weeds.

LUCERNE AT BURNHAM.

Lucerne trials which present several special points of interest are those which have been carried out at the Industrial School, Burnham, on what is probably one of the most shingly portions of the Canterbury Plains. The Manager of the school, Mr. T. Archey, has supplied the following report to the Department's Fields Instructor for the South Island, Mr. A. Macpherson, with whose co-operation the test was initiated:—

The lucerne-seed you sent me in 1911 was sown in November of that year in drills 9 in. apart: The area of the test was 1 acre, which was divided into four plots, as follows: Plot No. 1 was sown with seed only; plot No. 2 was sown with seed and inoculated soil; plot No. 3 was sown with seed and lime only; plot No. 4 was sown with seed, lime, and inoculated soil.

The first cutting for produce took place early in April, 1912, with the following results: Plot No. 1, 1,100 lb.; plot No. 2, 1,500 lb.; plot No. 3, 1,900 lb.; plot No. 4, 2,300 lb. (green weights throughout).

The land was kept clean and worked constantly. Cutting took place four times, and the total yield from the four plots was 12 tons.

For the following season the land was well cultivated, limed ($\frac{1}{2}$ ton to the acre), and heavily dressed with mixed stable and farmyard manure and cleanings from Addington railway-sidings. Crops were cut four times, and the yield for 1913 and 1914 respectively was 15 tons.

The year 1914 to 1915 was very dry, and, notwithstanding the labour and fertilizer, the yield was poor. The crop was cut with total result of 6 tons.

For 1915 to 1916 I heavily manured with home-made fertilizer, made up as follows: (1) 1 cwt. powdered fowl-droppings, 1 cwt. dried gorse or wood ashes, 2 cwt. sieved soil from the shingle-pit; (2) 1 cwt. cow-dung plus wood-ashes and soil; (3) 1 cwt. sheep-droppings (powdered) plus wood-ashes and sieved soil; (4) 1 cwt. pig-dung plus ashes and soil. The whole of the fertilizer passed through $\frac{1}{8}$ in. sieve. In many instances I added 10 lb. to 15 lb. calcined bonedust. On this acre I applied 25 cwt. of these various fertilizers and irrigated the plot. The crop has had five main cuttings this season, with a final light cut early in May, making a total yield of rather over 13 tons.

As a forage crop I think lucerne unequalled.