

be seen between the manured and non-manured areas, but no definite superiority of any one manure over another could be discerned.

#### METHOD OF HARVESTING.

Season 1923-24: Areas of approximately  $\frac{1}{4}$  acre were carefully measured, and the number of sheaves dropped by the reaper-and-binder on that area was noted. A large number (twenty-two) of these sheaves from each area was weighed to the nearest ounce, and thus the average weight of sheaves on each treatment was obtained. The product from these strips, which were at least 5 chains long, was stooked separately, and when fit to thresh the bands of several sheaves taken indiscriminately were cut and handful samples taken. These were tied and the heads placed in small bags to avoid loss. Each sample was carefully weighed, and flail-threshed in small strong bags. The grain from each sample was then weighed, and the ratio of grain to straw calculated. From the data so obtained the yields per acre were calculated. This method, planned by Mr. M. J. Scott, chemist at Lincoln College, though involving a large amount of very careful work, gave highly satisfactory results, the calculated yields being practically identical with threshing returns at the College.

Season 1924-25: This year the actual sheaves from the plots were threshed in a small mill adapted to the purpose. Smaller areas were cut either with scythe, reap-hook, or reaper-and-binder, and the product stooked and threshed separately. By this method the plots were in closer proximity to the controls, and the difficulties of land variation were largely overcome. Varying-sized plots, from  $\frac{1}{160}$  acre to  $\frac{1}{50}$  acre, were cut in different fields. Where small plots yielding about five sheaves were cut a large number was taken. With the larger plots yielding about sixteen to eighteen sheaves few plots were required. The method was highly satisfactory, and overcame some of the experimental difficulties which occurred in the previous season.

#### RESULTS OF THE EXPERIMENTS.

The results so far show a definite increase from both forms of phosphate, but no conclusions can yet be drawn as to which is the better form. Likewise, sufficient data are not yet to hand to enable an estimate of the value of dried blood to be made. The yields are given in the following records. In the 1924-25 experiments the yields on manured plots are compared with those of the controls situated immediately alongside them, each manure being adjacent to a control.

#### *Season 1923-24.*

Experiment 1: On farm of Mr. R. T. McMillan, Irwell. Previous crops—1922-23, barley; 1921-22, wheat; 1920-21, grass. Date of sowing experimental plots—First week in June, 1923. Variety of wheat—College Hunters. Yields per acre—Super, 41.8 bushels; basic super, 42.3 bushels; super and blood, 42.9 bushels; basic super and blood, 43.1 bushels; controls, 41.4 bushels. The application of the statistical method proved the differences to be non-significant, and the slight differences which occurred are due merely to chance variation.