

## APPENDIX No. 1

land is manured once in five years. The manure is applied with the root or corn crop; next year cereals are sown and the land seeded with clover and timothy. The next year the land is in hay, then one year pasture, and the fifth year pease and mixed grain crops seeded with clover.

*By Mr. Wilson:*

Q. That is part of the ordinary farm ?

A. Yes; the agriculturist, Mr. Gridale, who has charge of this branch of the work, will be here and will give you any further particulars you may desire.

*By Mr. Charlton:*

Q. You do not plough down clover in that five years ?

A. The pasture is ploughed under on the fourth year, and that contains some clover, clover also is sown with the mixed crops in the fifth year and ploughed under with the manure for the roots and corn.

Another important matter on which we have had additional evidence during the past year, is in regard to the improvement of seed by selection, by picking out the large heads from a crop and using the best of the grain so obtained as seed. This work has been carried on at Brandon, Indian Head and Agassiz. At Brandon 34 varieties have been sown in plots side by side, the grain from the picked heads being grown next to the plots sown with unselected seed. This unselected seed, however, has been screened, so that it has been a good example of screened seed. The plots varied considerably in yield. In some the crops from the selected heads did best, and in some cases the best crops were obtained from the unselected seed. In the 34 plots of wheat grown from the selected hand-picked heads the average yield of the whole was 32 bushels 39 pounds per acre, whereas the 34 plots sown with the unselected screened grain gave an average yield of 32 bushels 48 pounds per acre, an average of 9 pounds per acre in favour of the screened seed.

At Indian Head only one variety of wheat was tested in this way and that was Red Fife. In this instance there were three plots sown, one from seed taken from large heads selected by hand; second, seed from the ordinary crop well screened, and third, the small seed which was left as the screenings from the well cleaned grain. The crop from the selected heads was 59 bushels 40 pounds; from the well screened seed, 67 bushels, and from the small seed screenings, 59 bushels 40 pounds. In this instance the advantage was with the screened seed, the small wheat screenings having given the same crop as the selected heads.

*By Mr. Lovell:*

Q. It did just as well when it was not selected, as when it was ?

A. The screenings did equally well with the selected heads.

Q. What was the weight per bushel in each case ?

A. The weight of the grain grown from the selected seed was 63 pounds per bushel, from the unselected screened seed 61½, and from the small screened seed 62 pounds. The selected seed gave the heaviest grain.

*By Mr. Robinson (Elgin) :*

Q. That would hardly pay for the trouble of screening ?

A. I have not yet given you all the results. At Agassiz eleven varieties of wheat and eight varieties of barley were similarly tested, the grain from the unselected heads being sown in plots alongside of those sown with the hand-picked selected heads. In this instance nine of the wheats grown from the selected heads have given the larger crops and two from the unselected heads, the average difference in favour of the seed from the selected heads at Agassiz being 5 bushels 4 pounds per acre. The