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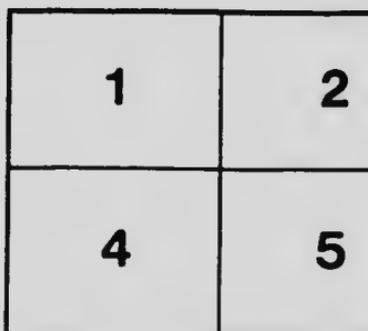
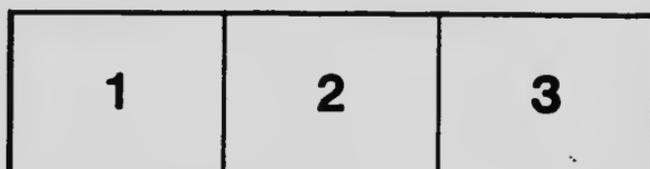
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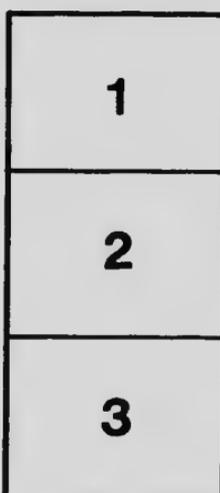
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DEPARTMENT OF AGRICULTURE  
EXPERIMENTAL FARMS

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## SEED OATS

by

J. A. CLARK, B.S.A.

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Prince Edward Island has been famous as an oat-producing country for a century. Immense crops were grown on her virgin lands and shipped to Europe or to the neighboring Provinces and States.

When the virgin lands decreased in their productiveness it was found that shell-mud from the great deposits in the rivers and bays gave farther lease to the wonderful productive qualities of the soil. This soil-mining continued until the census of 1890 showed that the average yield for that year was a little less than 19 bushels per acre. About that date, under wise leadership, the farmers of the Province were able to rapidly change from selling oats and other raw materials to selling such finished products as butter and cheese. The effect of the improved management was quickly recorded in the increased yield per acre of the oat crop, and the census of 1900 gave an average yield per acre of over 27 bushels.

It was about this time (1900) that more careful seed selection work was begun by the Macdonald-Robertson Competition and afterwards continued by the members of the Canadian Seed Growers Association in this Province. We cannot yet estimate the influence of this movement which from a very small beginning is now rapidly showing beneficial effects on the crops of the Province. The average yield of oats per acre according to the census of 1910 was over 28 bushels. A census return states that the average yield for 1914 is over 38 bushels per acre or more than double that of 1890. That is surely growing two bushels of oats where one grew before.

Can two blades of grass be made to grow on Prince Edward Island where one grew in 1914? The writer believes they can and that two bushels of oats can be made to grow in this Province where one grew in 1914.

### METHODS OF IMPROVING SEED OATS.

Climatic conditions that are favorable to the full development of a plant are conducive to the rapid improvement of that plant and Prince Edward Island seems

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to be particularly adapted for developing first quality seed lots.

Under such conditions the simple method of mass selection from a seed plot has resulted in quickly improving varieties. Mass selection is the picking of heads that the grower considers are on the best plants in his field, and using the seed from them as parents for future crops.

This method is quite an improvement over the fanning mill selection that so greatly helped our father's crops whereby it is possible to eliminate many of the non-producers that failed to produce a prolific head, grain deficient in stooling, or other characters that we consider necessary in first quality seed.

Another method starts with the individual mother plant which may be obtained by the individual selection of one plant out of thousands or by careful plant breeding and selection. The seed from the individual mother plant is then multiplied and distributed. This method being difficult and expensive has been carried on largely by the Cerealists and Cereal Husbandmen at the Experimental Farms and Stations and at the Agricultural Colleges throughout Canada and the United States. By this method some of the difficulties in the way of further improvement by mass selection were overcome.



Oat Plots, Charlottetown Experimental Station, August 8th, 1911.

### WHERE TO OBTAIN FOUNDATION STOCK.

It is an interesting fact that almost all of the foundation stock of the seed grown by the members of the Canadian Seed Growers Association in this Province was obtained either directly or indirectly from the Central Experimental Farm at Ottawa. Foundation stock of oats in 4 lb. lots can be obtained free from the Central Experimental Farm on application or it can be purchased in larger quantities from the multiplying plots at the Experimental Station, Charlottetown, P. E. I.

### VARIETIES.

Co-operative work was undertaken in the Spring of 1912 by the Superintendent of the Charlottetown Station, the Seed Inspector and a number of careful farmers in Kings' and Queens Counties to determine which of the three leading

types of oats were best suited to certain localities. Banner, Ligowo, Old Island Black were the varieties chosen. Each variety was sown in duplicate each year on a number of different farms. Equal portions of the best seed obtainable of the different varieties were sent out by the Charlottetown Experimental Station each Spring. With one exception, the product was returned in the Autumn when it was threshed and weighed by the Station staff at Charlottetown. On one occasion the Superintendent was present at the threshing and weighing of the plots on one farm.

The results of three years observations are here given:

	Banner		Old Island Black		Ligowo	
	Bus.	Lbs.	Bus.	Lbs.	Bus.	Lbs.
Average yield per acre from 12 plots of each variety in 1912	55	24	49	6½	46	27½
Average yield per acre from 8 plots of each variety in 1913.	66	31	62	12	58	22
Average yield per acre from 6 plots of each variety in 1914.	70	28	58	11	56	20
Grand average yield per acre from 26 plots of each variety 1912-1914.	62	21½	55	12	52	24½



Multiplying Plot of Ligowo Oats, Charlottetown Experimental Station, 1914

From the above data it will be seen that Banner has each year proved to be more productive than the oats representing the two other types tested, and during the three seasons it has produced on an average 7 bushels and 10 pounds per acre more grain than Old Island Black and 6 bushels and 31 pounds more grain per acre than Ligowo. It was generally believed that Ligowo was better suited to most of the localities than Banner before the co-operative work began. Banner oats has never led the list any year at the Charlottetown Station but it has always been well up on the list. This oat is popular and is highly recommended both on account of its good qualities and because of the demand for it for seed purpose on Prince Edward Island and in the neighboring Provinces.

Old Island Black is a variety that has been developed in the Province. It has a thinner hull than Banner. It is probably due to the excellent qualities of this oat that black oats still continue to bring 2cts. more per bushel than white in most of the "Maritime" markets. Its chief failing is the weakness of its straw as it is likely to lodge badly on rich land.

### **Farm operations in the production of Seed Oats.**

A good site should be chosen for the Seed oats plot and multiplying field. It is well to have the manure applied the previous year on roots. The ground should be brought to a good tilth by thorough cultivation as early in the season as possible. The seed grain after being treated with formalin should be sown as soon as it will seed right in the seeder or drill, allowance being made for the swelling of the grain by the fungicide.

About 2½ bushels of dry grain per acre if sown with a drill is recommended, although quite as good results have been obtained from 2 bushels.

Seed grain should be rogued and all noxious weeds and foreign grain removed from the standing crop. It should be allowed to ripen well before cutting and should be dry as shot before being stored in the barn.

Great care should be taken in threshing, cleaning, and storing so as to avoid impurities. This is much easier done if only one variety of oats is grown and fed on the farm.

### **SUMMARY**

Seed Oats of the very first quality is being produced in Prince Edward Island. By improved farm methods and more selection of Seed Oats the average yield per acre for the whole Province has been doubled in 24 years. By thorough, clean cultivation and the use of only first quality seed of the very best sorts the yield can be greatly increased throughout the Province. An indication of the possibilities of oat culture was shown by the average yield of the 10 best plots at the Experimental Station here in 1914 which was at the rate of 116 bushels and 20 pounds per acre. There is an ever increasing demand in Nova Scotia, New Brunswick, Quebec and Ontario for the very best seed oats we can produce. By the methods suggested we can maintain our stock as at present or increase it and still have sufficient to yield a large income from the surplus sent to the other Provinces for seed purposes.



