mark, grown on contract for Canadian seedsmen may be somewhat uncertain as to promptness of delivery, and the transportation charges high, but there can be no reasonable doubt that an abundant supply of all staple kinds will be available at prices that may not be considered extraordinary even in times of peace. The greatest inconvenience that may result will arise from delays in delivery to wholesale seedsmen, and inability to secure for this season particular varieties and strains from definite growers. In consequence seedsmen who obtain supplies from particular growers on the continent may be able to get seed of the same kind and variety name, but not have the usual assurance that it is pure and superior for the kind or be able to have it delivered in time to prove its genuineness by green-house tests.

Should war continue well into the season of 1915 the character of European agriculture will doubtless be considerably modified, and larger areas will be devoted to the production of food for home consumption. Canadian farmers and gardeners who have had experience in growing seeds of the kinds we import from the Continent of Europe would do well to look to the requirements for the 1916 crop.

The farmers of the Maritime Provinces can be depended upon to produce a supply of Swede seed. They will have an appreciable quantity this year. Ontario has an admirable climate for the production of mangel, beet and most kinds of garden seeds. The Federal Government through the Seed Branch now offers cash subventions to growers of field root and garden vegetable seeds amounting to approximately one-eighth of their retail selling price. Seed growers of these crops in Ontario and Quebec should place themselves under the consulting direction of Prof. C. A. Zavitz, of Guelph; Dr. M. O. Malte, Experimental Farm, Ottawa, or Paul Boving, Macdonald College, who are experimenting with field root crops, and with the horticulturist of any experimental station in respect to seed production of garden crops.

Ottawa. GEO. H. CLARK,
Seed Commissioner.

Results of Experiments with Autumn - Sown Crops Throughout Ontario.

Three hundred and forty-three farmers throughout Ontario conducted experiments with autumn-sown crops during the last year. Reports have been received from thirty-nine counties and districts throughout Ontario. Those sending the greatest number of reports were Nipissing, Rainy River, Northumberland, Huron, Simcoe, and Lennox. The average results of the carefully-conducted co-operative experiments with autumn-sown crops are here presented in a concise form.

Winter Wheat.—Five varieties of winter wheat were distributed last autumn to those farmers who wished to test some of the leading varieties on their own farms. The average yields per acre are given in the following table :

Variety	Straw per acre. (tons)	Grain per acre. (bush.)
Imperial Amber	1.63	31.7
American Banner	1.40	30.8
Crimean Red	1.34	30.4
Banatka	1.28	28.8
Yaroslaf	1.57	28.3

The Imperial Amber which occupies second place in the average of nineteen years' results of fourteen varieties tested at the Ontario Agricultural College, occupies first place throughout Ontario in 1914. The American Banner, the only white wheat included in this experiment comes second. It closely resembles in appearance the Dawson's Golden Chaff. The Crimean Red, although a rather weak-strawed variety, is a good yielder and produces grain of excellent quality.

Winter Rye.—In the autumn of 1913 the Mammoth White winter rye and the Imperial Amber winter wheat were distributed to be tested under uniform conditions. The average results show that the Imperial Amber winter wheat surpassed the Mammoth White winter rye by a yield of 83.2 pounds of grain per acre. In experiments throughout Ontario for seven years the Mammoth White surpassed the common variety of winter rye by an annual average of practically four bushels per acre.

Winter Emmer and Winter Barley.—A comparative test of winter emmer and winter barley has been made throughout Ontario in each of the past five years. The average results for the three years previous to 1913 showed that the winter emmer gave 1,830 and the winter barley 1,812 pounds of grain per acre. The average results of an experiment conducted on two farms in 1914 show that the winter barley gave 1,480 lbs., and the winter emmer 720 lbs. per acre. The winter emmer was quite badly winter-killed.

Hairy Vetches and Winter Rye for Fodder.—In each of the past three years hairy vetches and winter rye have been compared as fodder crops in the co-operative experiments. Four good reports of this experiment were received in each of the past three years. In 1913 and again in 1914 the winter rye produced a greater yield than the hairy vetches in each of the separate tests. The low yield of the hairy vetches is due to the fact that the crop was badly winter-killed.

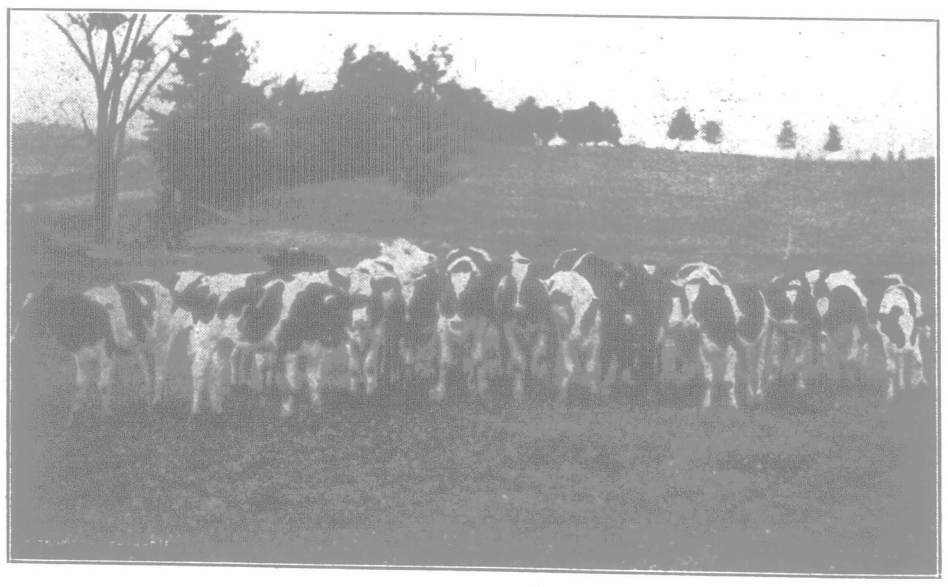
Fertilizers with Winter Wheat.—In the co-operative experiments with different fertilizers applied in the autumn to winter wheat, the average yields of grain per acre for eight years were as follows : mixed fertilizer, 23.5 bushels; nitrate of soda, 22.5 bushels; muriate of potash, 21.5 bushels, and superphosphate, 21.2 bushels. On similar land, cow manure, at the rate of twenty tons per acre gave an average yield of 25.8 bushels per acre, and the land which received neither fertilizers nor manure gave an average of 18.1 bushels per acre. The superphosphate was supplied at the rate of 320 pounds, and the muriate of potash and nitrate of soda each 160 pounds per acre. The mixed fertilizer consisted of one-third of the quantity of each of the other three fertilizers here mentioned. In the past two years the fertilizer experiment with winter wheat was the same as in other years, except that the fertilizers were applied in the spring instead of the autumn of the year. From the spring applications the land which received the mixed fertilizer gave the highest average yield, and the unfertilized land the lowest average yield of grain. The cost of fertilizers used in this experiment would be approximately from four to five dollars per acre.

In another experiment nitrate of soda increased the yield of wheat more than common salt when applied either in the autumn or in the spring.

DISTRIBUTION OF MATERIAL FOR EXPERIMENTS IN 1914.

As long as the supply lasts, material will be distributed free of charge in the order in which the applications are received from Ontario farmers wishing to experiment and to report the results of any one of the following tests: 1, three varieties of Winter Wheat; 2, one variety of Winter Rye and one of Winter Wheat; 3, spring applications of five fertilizers with Winter Wheat ; 4, Autumn and Spring Applications of Nitrate of Soda and Common Salt with Winter Wheat ; 5, Winter Emmer and Winter Barley; 6, Hairy Vetches and Winter Rye as Fodder Crops. The size of each plot is to be one rod wide by two rods long. Fertilizers will be sent by express for Number 4 this autumn and for Number 3 next spring. All seed will be sent by mail except that for Number 4 which will accompany the fertilizers.

O. A. C., Guelph, Ont. C. A. ZAVITZ.



A Nice Group.

Holstein calves got by King Johanna Pontiac Korndyke, on the farm of J. W. Richardson, Caledonia, Ont.

THE DAIRY.

Improving Milking Herds.

Editor "The Farmer's Advocate":

Milk records, so simple a discovery, and yet of such far-reaching value, have made the task of selecting the best cows, from which to breed good milkers, a matter of far less uncertainty than it was in the past. Leastways, that is what we are finding out in England. These same milk records can also do much to enable one to decide on a good bull for the dairy herd, because it is an established principle that the forbears of a good bull to which prime importance is to be attached are his mother and his father's mother. If these, on the evidence of milk records, are known to have been deep milkers one may, within the bounds of reasonable certainty, assume that the bull will transmit these deep milking qualities to his offspring, it being an axiom of the science of breeding that the characteristics of one sex may be transmitted through its progeny of the opposite sex to the latter's progeny.

Another point which makes the selection of the bull of paramount importance in breeding is the fact that the sires possess greater prepotency than cows, and hence have more power of stamping their characteristics on the progeny. This fact may be made of particular use by selecting a bull that is notably strong in the characteristics in which the cows are weakest, as he will then correct these weaknesses in his offspring. It must not be inferred from this, however, that males and females of widely different natures may safely be mated, as the result would be unsatisfactory; mating two animals that have a good deal in common is always to be preferred.

Pedigree counts for a lot in the bull, particularly as regards his immediate maternal ancestors, where milk production is the object in view; but for beef production it is of greater importance to select a bull that is notably strong in the parts where the best beef is grown—that is to say, in the back, loins, and thighs. Again, for use with cross-bred stock the bull should be selected largely for his size, fleshiness, masculine characteristics and hardiness.

It is not necessary to enumerate the points of a good bull, as there is no universal scale of points that will apply to all the breeds. Each breed has its own definite characteristics. Those unacquainted with them can always obtain a list by reference to the herd book of the breed, and those the farmer should make himself familiar with in selecting a bull of any particular breed for use in his herd.

G. T. BURROWS.

The Export Dairy Trade.

Editor "The Farmer's Advocate":

One of the most valued foreign publications which comes to our office is that of the Annual Review of the Imported Dairy Produce Trade for the United Kingdom of Great Britain and Ireland. This Review is sent out each year in July, the present one being the 20th, by W. Weddel & Co., London, Eng.

On both occasions of our visit to the great London, England, produce market, this firm was very courteous, to the writer, sending a representative with him to their warehouses and through their large cold-storage plant.

The imports to the U. K. of both butter and cheese continue to increase each year. During the year ending June 30th, 1914, the imports of butter increased by 14,412 tons, and the cheese by 1,512 tons as compared with the previous year. As usual, Denmark shows the largest increase of butter imports, having 88,935 tons to her credit—an increase of 6,389 tons over 1913. Russia stands second and New Zealand third in increases of butter imports. Canada has 41 tons to her credit. We wonder if we shall ever be able to get a respectable footing in the butter markets of Great Britain and maintain it? The Reviewer has some rather harsh things to say of Australian butter, which indicate that there are troubles on the other side of the globe as well as on our side. He is inclined to attribute the poor quality of butter received from Australia to "the custom of making it from collected cream," which seems to be spreading among the creameries of the Antipodes as well as in Canada and in the United States.

It is interesting to note in the table of prices that Danish and French salt butter averaged in London the same prices—125s. 2d., Russian 107 shillings, New Zealand 116s. 3d., and Australian 111s. 9d. during 1914 for 112 lbs., or what is called the "long" hundredweight.

Coming to cheese we note that Australia showed an increase of 5,196 tons, and Canada a decrease of 5,661 tons as compared with the previous year. It looks as if New Zealand is filling the gap caused by declining exports of cheese from Canada. The writer goes on to say: "So recently as 1904 Canada sent 98,306 tons of Cheddar cheese to the United Kingdom, but during the past year supplied only 60,763 tons. This falling away of 37,543 tons has been gradual, but during the past season the decrease of 5,661