



**The Field.**

**Familiar Talks on Agricultural Principles.**

**OATS.**

This crop is one which is largely grown by Canadian farmers, too largely indeed for the good of the lands they cultivate. It is easily raised on almost every description of soil from the heaviest loam to the lightest sand, its culture is beset with no uncertainties, and it will yield a remunerative return when other grains would be pretty certain to fail. From the ease with which this grain is grown under almost every variety of circumstance, an idea prevails that it is less exhausting to the soil than the wheat crop. This however is a great mistake. If both grain and straw are removed from the land, as they usually are, oats are fully as exhaustive as wheat. This will be seen at once by a reference to the results of chemical analysis. The organic part of the oat-kernel very much resembles that of wheat. Oatmeal contains from 10 to 18 per cent of gluten or its equivalent, and is nearly as nutritious as wheaten flour. The straw is more valuable than that of any other grain, and hence must make anything but a light drain upon the soil. A glance at the following table will prove the correctness of these observations.

Name of Plant	One hundred parts contain					
	Carbon	Hydrogen	Oxygen	Nitrogen	Water	Inorganic Matter.
Oats.....	40.1	5.1	49.1	1.8	23.8	3.1
Oat-Straw....	35.7	3.9	47.8	0.7	23.7	3.0
Wheat.....	49.4	5.0	37.1	3.0	14.5	1.0
Wheat-Straw	35.3	3.9	48.8	0.3	26.0	5.2

The oat plant can take up nourishment from raw and undecomposed vegetable matter, such as sod, peat &c. from which the wheat plant can obtain but little nourishment, and this is doubtless one reason for the popular but erroneous impression that oats are a less exhausting crop than wheat. Prof. Dawson well observes, "It is barbarous farming to extract two successive crops of an exhausting grain like the oat from any ordinary soil, or to take a crop of oats and then let the land run out into grass. Nothing but dire necessity can excuse these practices, which are happily too prevalent. The manure produced from the oat-straw, or its equivalent, should in all cases be returned to the soil in the succeeding year for a green crop." When this is done, instead of the soil being deteriorated, it is improved.

While this crop will thrive more or less in a great variety of circumstances, it does best in a damp climate and a moist soil, and with a moderate summer temperature. Hence this grain attains a higher degree of perfection in Britain than it does in this country. In the best oat districts of Scotland and

Ireland, the average weight of a bushel of oats is 43 or 44 pounds, while more than 100 bushels to the acre are often harvested. Here 70 or 80 bushels are an extraordinary crop, while the average yield is far less, and the weight per bushel is rarely more than from 28 to 32 pounds. In this climate the oat also shows a tendency to run out. If the same description of seed be used on the same soil for a few years, the grain becomes thicker in the husk and lighter in the kernel, until it is well-nigh worthless. Frequent change of seed is therefore necessary. The best is that imported from Scotland, especially the earlier varieties grown there. They are thin-skinned and heavy, and do not show signs of deterioration until they have been under cultivation in this country for five or six years.

Oats should be grown as the first grain crop after ploughing up green sward. This is their proper place in a good rotation. They are well fitted for this place, both by their ability to extract nourishment from the decaying sod, and by their dense shade which keeps down the growth of weeds and grasses. For this latter reason, and also because of its green consumption of particular elements of plant-food, it is an unsuitable grain for sowing with grass seeds.

The quantity of oats required to seed an acre properly is from 2 to 4 bushels. An experiment was made on this point at the State Farm in Massachusetts in the Spring of 1858, with the following results:

The oats were sown broadcast on the 27th and 28th days of April, and harrowed in:

Lot No. 1 at the rate of 5 bushels per acre.  
 " 2 " " 4 " "  
 " 3 " " 3 " "  
 " 4 " " 2 " "

The lots contained an acre and a half of land each, and were treated exactly alike. The oats were harvested July 28th and threshed Sept. 2nd and 3rd. Lot No. 1 yielded 42 bushels; No. 2 35½ bushels; No. 3, 40 bushels; No. 4, 26½ bushels. The grain weighed 28 pounds to the bushel, and was pretty uniform on all the lots, that on No. 1 being lightest, both in grain and straw. The crop was small, the land not being very favourable to oats, but it will be perceived that the seeding of 3 bushels per acre yielded nearly as large a return as the seeding of five bushels per acre.

Oats produce an excellent green crop for feeding to milk cows and other stock, on account of the rapidity and earliness of their growth. When sown for this purpose, a larger quantity of seed is required than if the grain is intended to be ripened. In any case, oats should be sown as early in the season as possible.

This grain often suffers in consequence of being left too long in a growing state. It should be cut before the straw has turned completely yellow. The grain is plumper, and the straw more valuable when this is done. Left too long, the amount of nutriment

both in the kernel and the straw is diminished, and there is much loss in consequence of the grain shelling out during harvesting.

In this country the chief use made of oats is for feeding horses and other farm stock. For this they are excellent, as they contain a large amount of nourishment. But oatmeal is also an admirable food for man. It tends largely to the production of muscle, and the development of strength. For labouring men, or those who are training for athletic games and exercises, it is better adapted than is the flour made from any other grain.

**Guano and Barn-Yard Manure.**

To the Editor of THE CANADA FARMER:

Sir,—As to the comparative value of guano and farm-yard manure, I entirely agree with your correspondent, "Cultivator," that "it is right that there should be no doubt upon a subject of so much importance in the economy of the farm," and to this end beg leave to make the question the subject of a few remarks, which may be of interest and value to your readers, and go to some extent towards the elucidation of the question.

Your correspondent argues upon the supposition that the question is, whether a ton of guano contains as many elements of fertility as an amount of farm-yard manure of equal value, and in labouring to prove the superiority of the commercial manure, asserts: "it is considered by chemists that 2,000 lbs. of guano is equal to about 30 tons of farm-yard manure." Now this is a most fallacious method of arriving at a correct opinion as to the real value of a manure. Professor S. W. Johnson, of Yale College, than whom we have no higher authority upon the subject of manures in America, says: "The mere chemical diletante might suppose that so soon as we know the composition of a manure we have all the needful data necessary to pronounce upon its fertilizing action. There can be no greater mistake." And again, "no one has ever had grounds for supposing that the composition of a manure can serve to predict the effects that will follow or accompany its use." The most useful (?) purpose served by chemical analysis has always been to give greater fertilizing powers to special manures than is warranted by the actual effects accompanying their use—to make them sell.

Granted that 2,000 lbs. guano contains as many elements of fertility as 30 tons of farm yard manure, the question is, has the guano as great a fertilizing effect, will the growing crops obtain as great an equivalent of plant food from its use, as from that of the other manure; a question upon which "Cultivator" gives no light.

Actual practical experiment alone must prove. And that it will fail to give such favourable results