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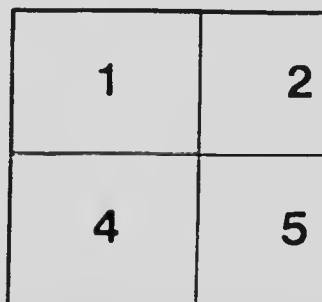
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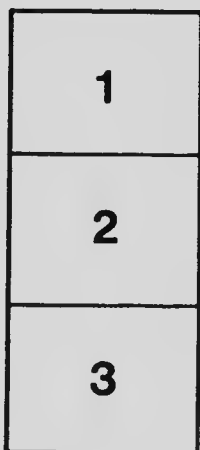
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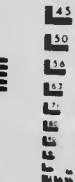
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DOMINION OF CANADA.

DEPARTMENT OF AGRICULTURE.

EXPERIMENTAL FARMS.

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Director.

M. O. MALTE, Ph. D.,
Dominion Agrostologist.

DIVISION OF FORAGE PLANTS.

**PROFITABLE FIELD ROOT VARIETIES FOR ONTARIO AND
ADJACENT PARTS OF QUEBEC**

BY

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Assistant.

IMPORTANCE OF ROOTS TO THE STOCK-FEEDER.

Owing to their succulency and palatibility combined with a moderately high food content, field roots, in fairly large quantities, are both acceptable and profitable in the ration for nearly every class of live stock. In Denmark and Sweden, where the dairy and bacon industries have reached a very high state of perfection, field roots constitute a large part of the ration for both cattle and hogs. It is true that in Canada farmers and stock feeders are rapidly realizing the value of Indian corn ensilage as a feed, with the result that Indian corn is being more widely grown each year.

Indian corn ensilage is without doubt a very valuable feed and is usually a little more concentrated than the average field root. Yet, when we consider the fact that ten to twelve pounds of field roots containing one pound of dry matter is equal in feeding value to 8 pounds of ensilage, one pound of Indian corn meal, $1\frac{1}{2}$ pounds of oats, or, $2\frac{1}{2}$ pounds of mixed clover hay, it is at once apparent that an average crop of field roots is equally profitable, if not more so, than a like crop of Indian corn grown for ensilage, or in fact any other crop grown for stock feed.

THE VARIETY TESTS AT THE EXPERIMENTAL FARMS.

Ever since the establishment of the Dominion Experimental Farms, in 1886, one branch of the work has been the conducting of variety tests with the different varieties of field roots. Owing to the ever changing factors influencing such experiments, the results of these tests, as published from year to year, in the farm reports, have in some instances appeared to be more or less confusing. For instance, a cer-

tain variety may lead all the others in both yield and dry matter per acre for one year, or even for a period of years, when the next year's results will show it in last place. The natural and correct conclusion to draw from such a phenomenon is that some change in soil or weather condition influenced that particular variety much more than it did the others. The only way, therefore, to obtain reliable information from a series of variety tests with field roots, is to compare the average yield of each variety for a number of years. By following this method the variety which, say at the end of a period of five years, shows the highest average may, with other factors being equal, be considered as the most useful variety to grow.

VARIETIES RECOMMENDED.

From the average of five years' results from the variety tests conducted at the Dominion Experimental Farm, Ottawa, Ontario, and from the average of the analyses, for the same length of time made by the Dominion Chemist with the same varieties grown at Ottawa, we are prepared to recommend the varieties of mangels, swedes and carrots, mentioned below:—

MANGELS.

Five Years Average.

Variety.	Yield per acre.		Dry matter per acre.	
	Tons.	Lb.	Tons.	Lb.
Giant Half Sugar White	34	450	4	64
Selected Yellow Globe	38	29	4	60
Giant Yellow Intermediate	30	340	3	1,147
Prize Mammoth Long Red	28	277	3	334
Gate Post	28	400	3	96

DESCRIPTION OF VARIETIES.

Giant Half Sugar White is a long, greenish white variety, somewhat rough and ununiform in shape although usually large. It has a fairly heavy top and is often broken in handling. Its keeping quality may be considered as fair.

Selected Yellow Globe is a yellow globe-shaped variety of fairly uniform size and shape. It has a small top and is easy to handle. Its keeping quality is only fair.

Giant Yellow Intermediate is a half long variety, yellowish orange in colour; large but fairly uniform in size and shape with a medium sized top. It is easy to handle and of good keeping quality.

Prize Mammoth Long Red is a large, long, red variety, somewhat ununiform in type and rather inclined to be rough in shape. It has a heavy top and is considered hard to handle. Its keeping qualities are good.

Gate Post is a long, red variety somewhat inclined to be rough in shape and unevenly large in size. The top is rather heavy and the root is sometimes faulted as being disagreeable to handle. Its keeping qualities are good.

SWEDEN.

Five Years Average.

Variety.	Yield per acre.		Dry matter per acre.	
	Tons.	Lb.	Tons	Lb.
Good Luck.....	36	1,600	3	1,234
Halewood's Bronze Top.....	29	400	3	468
Hall's Westbury.....	30	520	3	271
Kangaroo.....	30	252	3	169
Skirring's.....	23	1,200	3	144

DESCRIPTION OF VARIETIES.

Good Luck is a light purple top variety, oval in shape and uniform in type. It is usually smooth and though rather small is easy to handle. Its keeping qualities are good.

Halewood's Bronze Top is a greenish bronze top variety, nearly tankard in shape and somewhat ununiform in type. It is usually large and inclined to have a large number of small roots. The top is heavy and the neck often long. Its keeping qualities are good.

Hall's Westbury is a purple top, oval variety, fairly uniform in size and shape. The top and neck are of medium size while the root itself is usually smooth and clean. It is of medium size and is considered easy to handle. Its keeping quality is good.

Kangaroo is a bronze top, tankard shaped variety, fairly large although ununiform in type. The top and neck are of medium size, and the root is usually smooth. Its keeping qualities are excellent.

Skirring's is a purple top, globe-shaped variety, fairly smooth and uniform in type with a fairly heavy top and neck. Its keeping qualities are fair.

FIELD CARROTS.

Five Years Average.

Variety.	Yield per acre		Dry matter per acre.	
	Tons.	Lb.	Tons.	Lb.
Ontario Champion.....	26	1,200	2	129
Improved Short White.....	27	2	125
Giant White Vosges.....	24	2	111
Mammoth White Intermediate.....	25	400	2	112

DESCRIPTION OF VARIETIES.

Ontario Champion is a long, large, white variety, uniform and smooth in type although somewhat hard to harvest, as, owing to the length, the plough frequently cuts them in harvesting. Its keeping qualities are good.

Improved Short White is a half-long, large, white variety, fairly uniform in type and usually smooth. Its keeping qualities are good.

Giant White Vosges is a large, long, white variety, fairly smooth and uniform in type. Like Ontario Champion it may be faulted on account of its length as it is often cut or broken in harvesting. Its keeping qualities are good.

Mammoth White Intermediate is a half-long, large, white variety. It is somewhat rough and ununiform in type. Its keeping qualities are good.

CULTURAL METHODS FOR FIELD ROOTS.

For cultural methods suitable for field roots we beg to refer you to Bulletin 67 by J. H. Griesdale, B. Agr., on *Mangels, Sugar Mangels and Forage Sugar Beets*, which may be obtained upon application from the Central Experimental Farm, Ottawa, Ont.

The preparation of the soil, seeding and following cultural practices up to the time of harvesting, given therein for mangels, are applicable for both swedes and carrots with the exception, that swedes should be sown 10 days to two weeks later than the mangels, and that carrots should be thinned to not more than three to four inches apart in the row.

For further information we advise you to write the Superintendent at the nearest branch Farm or to communicate direct with M. O. Malte, Ph. D., Dominion Agrostologist, Central Experimental Farm, Ottawa, Ont.

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