

PLANT FOOD REMOVED BY CROPS IN
TEN YEARS.

Yearly Yield per Acre.	Nitrogen.	Phosphoric Acid.	Potash.
	Lbs	Lbs	Lbs
Timothy hay, two tons per acre. . . .	600	400	900
Oats, 50 bushels per acre of grain, with 2,200 lbs. of straw	460	164	356
Spring wheat, 25 bushels of grain per acre, with 2,200 lbs. of straw	422	233	395
Barley, 35 bushels per acre of grain, with 2,000 lbs. of straw	325	164	270
Indian corn, grown for fodder to the late milk or glazing stage, 15 tons per acre	660	330	1,170
Turnips, roots only (the tops being left on the land to plough under), 15 tons per acre.	540	300	1,140
Mangels, roots only, 15 tons per acre	570	270	1,149
Carrots, roots only, 15 tons per acre	600	270	780
Sugar beets, roots only, 15 tons per acre.	630	240	1,110
Potatoes, tubers only, 200 bush. per acre.	408	192	684
Apples (trees in full bearing), fruit, leaves and wood	650	156	900

The figures are followed by this statement:

We thus see that reduced yields must inevitably follow successive cropping (unless plant food is from time to time returned); for the amounts given in the above table represent for the most part withdrawals from that limited store of immediately available plant food to which we have already drawn attention. If, during the ten years referred to, the land has had regular dressings of barnyard manure, say, once in five years, of about 20 tons to the acre, there would by this means be restored to the soil about 400 pounds of nitrogen, 200 pounds of phosphoric acid, and 360 pounds of potash, with the further advantage of a large addition of humus. With a suitable rotation of crops this return would do much towards making up the losses mentioned.

The crop producing power of soils is also lessened under such circumstances as we have referred to, by the wasting of their organic matter.

In Bulletin 31 on pages 10 and 11 I find:

The mineral constituents come originally, as already stated, from the rocks that form the base of the soil. They are being constantly removed for croppings. Thus, a four years' rotation of wheat, barley, potatoes and hay will remove per acre approximately, in addition to nitrogen, 222 pounds of potash and 80 pounds of phosphoric acid, and a rotation of wheat, oats, mangels and hay, 342 pounds of potash and 83 pounds of phosphoric acid.

I am anxious to press on the minister the importance of our people feeding the

Mr. ARMSTRONG.

products of their farms to animals on the farms instead of exporting them from the country. It has been the policy of the department for a great many years, and the minister's own officials use the strongest kind of language in condemnation of not feeding these products on the farms. I hope the minister will put himself right in regard to a statement he made some time ago.

Mr. BURRELL. The minister said that cattle for breeding and dairy purposes had always to be accompanied by a health certificate. Did he mean to imply there was no other test?

Mr. FISHER. Not if they are accompanied by a certificate of tuberculin test signed by an official of the federal government at Washington. We exchange lists of these officials with the American authorities and mutually accept such certificates.

Mr. BURRELL. I understood that horses were subject to the Mallein test, although accompanied by a health certificate.

Mr. FISHER. Yes, because the horse may easily contract the disease after the test is given. Tuberculosis is different and the tuberculin test cannot be made unless you are sure that the animal has not been injected with tuberculin for two or three months.

Mr. BURRELL. Is the Mallein test exactly similar with that in the United States? I understood their test was more severe and satisfactory than ours.

Mr. FISHER. Ours is the regular Mallein test, we do not consider the American test satisfactory.

Mr. SPROULE. What regulations are there for sheep and poultry?

Mr. FISHER. For sheep a certificate is required that there is no disease in the district from which they come. There is no regulation as regards poultry.

Mr. SPROULE. How are cars disinfected when coming into Canada?

Mr. FISHER. They are cleansed and disinfected every time they cross the boundary. If there are animals in them they are carried through to destination and then the cars are cleansed and disinfected. When animals are unloaded for feeding in railway yards these yards are disinfected in the same way as the cars.

Mr. SPROULE. What is the method of disinfection?

Mr. FISHER. The cars and yards are washed with a regular disinfecting preparation and are also whitewashed with lime whitewash. Sometimes where there is an