

Permanent Pasture for Outlying Fields.

Editor "The Farmer's Advocate":

I have read with interest your editorial in "The Farmer's Advocate" of the 15th ult., on rotation of crops, and heartily endorse the system for the general farmer. There may be reasons why the rotation indicated should not cover the whole farm; say an outlying portion, with a running stream, would be suitable for pasture. This might be seeded with perennial grasses and clovers suitable for pasture, which should be renewed every few years, by plowing shallow in spring, rolling and harrowing, followed by cultivating and harrowing at intervals of about two weeks, until July, then reseed with perennial grasses and clovers, without a nurse crop.

The orchard might be seeded with alfalfa, and plowed shallow every third year, thoroughly cultivated until July and then reseeded with alfalfa, about 12 pounds per acre, without a nurse crop. A few acres of alfalfa, fed as a soiling crop twice every day, will be sufficient for a herd of 20 to 30 dairy cows from June 1st until October. The equivalent of this should be returned to the orchard in the shape of farmyard manure.

WM. RENNIE, Sr.

[Note.—The pasture idea is an excellent one, but alfalfa in an orchard is better for the land than for the trees. A growing crop of lucerne deprives them of needed moisture, which is just as essential for their well-being as is plant food, and which no amount of manuring can wholly make up for.—Editor.]

English and Canadian Rotations.

Editor "The Farmer's Advocate":

Referring to the editorial on crop rotation, in your issue of February 15th, I may say that it is a subject which I have found very interesting during the few years in which I have turned my attention to agricultural matters, and more particularly so during my stay in England last winter. In that country, conservative as they may be in regard to the adoption of anything new, they certainly have learned the principles of crop rotation, necessitated by inter-cropping and intense cultivation, and, except in certain districts, where the proportion of arable land is considerable, the bare summer-fallow is almost a thing of the past. At the same time, wheat has become a much less profitable crop than it was formerly, and its place in the various systems of rotation has largely been taken up by potatoes, and to a lesser extent by other "truck" commodities. In many cases, where a farm is let on a long lease, the conditions of tenancy require not only that the farm shall be kept "in good heart," but also that it shall be farmed on the four-course system, one of the courses being one or another of the many varieties of clover generally sown with other seeds. The mixture most common in the West Midlands is one of red clover and Italian rye grass, with sometimes the addition of a small percentage of some other variety of clover. The whole is generally spoken of as "seeds," and is usually sown at the rate of from 12 lbs. per acre and up, to as much as 24 lbs. per acre. This mixture gives excellent results, the hay produced being equally suitable for horses or cattle, and also makes splendid pasture, more especially for sheep.

A good system of rotation does not necessitate that one should strictly adhere to the same order of crops. For instance, H. W., one of the most successful all-round husbandmen I have ever met, had 40 acres of roots, in three fields, taken off in the fall of 1904, and the land plowed, and three fields of "seeds" he had plowed about the same time. On 12 acres of root ground and about 28 acres of "seeds" he put barley, and the balance all went into oats. This year he will follow the barley with oats in two of the fields, and the third will probably get a light coat of manure, and give a crop of potatoes and "truck," such as carrots, and, perhaps, white table turnips, the latter sown broadcast. An alternative in the case of one of the fields spoken of as having been in with roots, is to seed down when sowing the barley. What follows the oats is a matter of expediency. Two of the fields will probably be asked for a crop of barley, and so be seeded down to complete the system of rotation. The course followed here will have been: Seeds (cut one year and pastured one year), 1, grain crops; 2, roots; 3, oats; 4, barley, and seeds again. The third field may carry a crop of winter beans before it has another crop of cereals and is seeded down. Though, of course, the conditions here are somewhat different, I consider that it would be vastly to our advantage to definitely adopt some system on the same well-established principle. In far too many cases there is no kind of system pursued, and I know of farms here in Ontario where some fields have been cropped with oats and barley, roots, barley and oats, right ahead for seven and even nine years, with only the aid of a couple of light dressings of manure. Nothing but a clay soil could stand it and give a crop. There is, of course, an almost entire absence of humus, and to plow there is no easy task for man or horse. Such land, more than any other, needs clover. The great trouble is on a farm of, say, one hundred acres, to arrange a system of rotation in such a manner as to produce a balanced crop year by year, for one must have pretty nearly the same proportion of each kind of crop each year.

Supposing a farm to contain ten fields of about equal

size, the following table will show how the crops may be arranged to fall into a fair system of rotation of hoe crops, grain and "seeds," which would keep the land clean and in good heart. A hoe crop stands, of course, for a coat of manure. In the case of a summer-fallow, one may either have a bare fallow or plow in a crop of rye in the green state:

1st year.	2nd year.	3rd year.	4th year.	5th year.	6th year.
1st field..... Oats	Hoe crop	Barley	Clover	Clover	Wheat
2nd "..... Summer-fallow	Wheat	Oats	Peas	Pasture	Clover
3rd "..... Hoe crop	Barley	Clover	Wheat	Barley	Peas
4th "..... Barley	Seed clover	Oats	Hoe crop	Oats	Oats
5th "..... Clover	Oats	Hoe crop	Barley	Peas	Summer-fallow or Barley
6th "..... Peas	Barley	Wheat	Oats	Hoe crop	Hoe crop
7th "..... Wheat	Peas	Barley	Pasture	Oats	Oats
8th "..... Oats	Summer-fallow	Wheat	Oats	Clover	Barley
9th "..... Pasture	Pasture	Peas	Barley	Oats	Pasture
10th "..... Barley	Oats	Pasture	Summer-fallow	Wheat	Barley

Reading across this table you get the crops to be put into each field year by year; reading down the columns you find each column gives a crop for one of the years, allowing a hoe crop each year—two fields each of barley and oats and one each of peas, clover, hay and pasture. Whilst there are four summer-fallows in the six years, one of which must be followed by wheat and clover; or, in place of summer-fallowing, one may put in barley and seed down. Obviously, the land is in better shape at the end of the sixth year than at the commencement of the first; at all events, I would not fear to rent a farm on a long lease to a tenant who followed such a scheme of rotation.

Now for a good word for "The Farmer's Advocate." We have a neighbor on the next line who is a successful farmer and has his place in good shape—a big place it is, too. When he came here some six or seven years ago he was a good enough mechanic, but did not know (so I am told) the first thing about farming, but from the start he has "farmed by the Advocate" (and left the moon strictly alone), thus he has attained to success.

E. S. SANDERS.

Lucerne in New Jersey.

We give below part of the summary of conclusions in a recent bulletin on alfalfa by the New Jersey Experiment Station. The findings of this Station are commended to the consideration of the Maritime Province readers, particularly those pointers relating to culture and fertilizing:

Alfalfa enriches the soil in nitrogen from bacteria inhabiting tubercles on roots.

In comparing food nutrients with that of other forage plants and mill feeds, alfalfa contains more protein than any other fodder, and, therefore, can be used in a ration to take the place, in part, of mill feeds rich in protein.

Large yields of green forage or hay can be secured—sixteen to twenty-six tons of the former, and three to six and a half tons of the latter, per acre.

It is permanent, a well-established field producing good crops for several years.

A well-prepared seed-bed ensures a good start to the young alfalfa plants.

A liberal application of lime neutralizes acids in the soil, assists the assimilation of plant food, and helps in the retention of moisture.

Alfalfa responds readily to an application of

mineral fertilizers, phosphoric acid and potash, and requires but little applied nitrogen.

To inoculate new fields, apply soil from a well-established field, or treat the seed with prepared cultures.

From feeding experiments it was concluded that, when purchased feeds average \$25 per ton, alfalfa hay is worth \$16.50 to feed with corn silage, and if the cost of production is \$6.00 per ton, and an average of four tons per acre is secured, the net gain per acre a season will be \$42.

The result of this experiment agrees quite closely with results from similar experiments conducted by the Experiment Station.

Three experiments with alfalfa hay versus purchased feeds, gave an average net gain of 28.3 per cent. and 27.0 per cent., respectively, in milk and butter, from the alfalfa ration.

Manuring in P. E. Island.

Editor "The Farmer's Advocate":

The soil of Prince Edward Island, for the greater part, is a red, sandy loam, being easily cultivated and fairly rich, makes the Island an ideal spot for agriculture. It was originally covered by great forests of beech, birch and maple, but by the steady stroke of the hardy settler's axe these are reduced to mere groves, and a great part of the people are burning coal instead of wood. What the Island most needs, in order to grow bountiful crops, is plenty of manure, and this can be obtained from different sources. Owing to its being all surrounded by water, large quantities of seaweed are annually washed on its banks, which makes an excellent fertilizer. The decayed oyster beds, containing from five to twenty feet of shells, are also another great source of wealth.

P. E. Island farmers are beginning more and more to see the advisability of feeding all the grain and fodders grown on the farm, and returning it to the land in the shape of manure. Some however, still persist in exhausting the soil of its original fertility, by selling the greater part of their grain and hay. This can be carried on for a time, but the soil will ultimately fail unless the ingredients carried away by the crops are restored. The importance of returning as much as possible to the soil in the shape of manure, cannot at all be questioned, and it is very necessary for all farmers to rightly use this fertilizer. Without manure, farming could not at all be carried on for any length of time; the soil would become so exhausted that it would not pay to crop it. But some farmers say it does not pay to feed grain and hay to cattle; that if we charge the market price to the stock fed (let it be fat cattle), we feed at a loss. And yet, these farmers that feed all they raise, either for the production of milk or beef, are generally successful ones, simply because the land is kept in good condition, and crops can be produced much more cheaply.

Air and water are both necessary to the proper keeping of manure. If it is allowed to get too dry it gets fire-flanged, and a lot of the most valuable parts escapes into the air. The temperature should not exceed 80 degrees F. The excessive heating may be prevented by allowing stock to trample over it, or by adding water. Horse manure is the most inclined to heat, and if left in a pile by itself will very soon lessen its weight and value. The best way is to mix all different kinds of manure together, and in this way it can be better preserved. Some farmers keep their manure in sheds; this is the best way, if the heating process can be controlled properly. Another way of wasting manure is by allowing excessive supplies of water to wash out the very essence of it. This is most liable to occur under the eaves of barns where the water is not conducted to a proper place. The practice of spreading manure on the fields in winter is not encouraged on the Island, on account of the weather conditions. It is, however, often piled in large heaps where it is wanted in the spring. There are not many manure spreaders here yet, the work being chiefly done by hand.

East Prince, P. E. I.

JAS. STEWART.

So Easy to Forget.

How about those new subscribers you were going to send us this winter?

With the sugarmaking now on, and spring close at hand, you are apt to overlook us in the hustle and bustle of the next few weeks. Now is the time to get them, before they are "too busy to be bothered." So, having thus reminded you of your good intentions, we will now daily expect to hear from you with a good-sized list. We still have some excellent premiums which we give in return for sending new names. Our premium Knife is a winner. It sells regularly for one dollar, but we are giving it for only one new subscription. Better get one while they last. Don't put it off any longer.