

of their leisure and put it into practice we would have much better and more interesting meetings. Above all things, let us be live farmers, and let us keep right abreast with other professions and well to the front in the procession. By so doing we can only take the place destined for the tillers of the soil.

A FRIEND OF THE INSTITUTES.

Carleton Place, North Lanark Co., Ont.,
July 24th, 1899.

Good Results From the Ploughing Under of Green Clover

To the Editor of FARMING

Among the many things of interest seen by the large number of farmers who have visited the Central Experimental Farm at Ottawa during the past few weeks, none have awakened greater surprise than the striking illustrations made this season showing the advantage to crops of the ploughing under of green clover. This is particularly seen in a field of oats of about ten acres. This land in its preparation in the spring was treated the same throughout; the field was all sown the same day with one variety of oats, the Bavarian. Last autumn about eight acres of this field had a good mat of red clover turned under, which was grown from seed sown (10 lbs. per acre) with a barley crop in the spring. One acre was ploughed which had been in Bromegrass for two years. One acre, which had been occupied with other pasture grasses for a similar period; and one acre with a mixture of pasture grasses and clover.

Over the whole area where the clover was turned under the increase in the growth of the oat crop is most striking. The difference in the highest part of the grain will average about twenty inches, and the deep green color of the leaves on this part of the field and the vigor of the plants are in striking contrast to the crop on the adjoining land where there was no clover. This remarkable increase in growth, affords convincing proof of the added fertility given to the land by the ploughing under of green clover. In another field, which has been planted with potatoes, a strip of the land covering eight rows of this crop had clover grown on it last year, which was ploughed under. In that strip the growth of the potatoes, as compared with the same variety on the adjoining land where there had been no clover, was quite remarkable, the plants being much larger and more vigorous. The results of the crops in both those instances will be watched with interest.

Last year a like illustration was given on eight plots of land on another part of the farm, on four of which red clover had been sown with grain in the spring of 1897; while on the other four grain was sown without clover. This land was all ploughed in the autumn of 1897 and in the spring of 1898 the whole area was sown with Banner oats. The greater vigor in the growth of the grain where the clover had been turned under was very noticeable quite early in the season and became more striking as growth advanced. These results were brought under the notice of a large number of visiting farmers during the season of 1898. When this crop matured the grain on these eight plots was harvested and threshed separately and the yield per acre on the four plots on which the clover had been grown exceeded that obtained from the plots on which there was no clover by an average of eleven bushels and one pound per acre.

In another field clover was similarly sown, in 1897, in different quantities with grain on a series of plots with three left as check plots without clover. As these were all to be planted with Indian corn they were not ploughed until May 23rd, 1898, by which time the clover had made a heavy growth. After ploughing and harrowing the corn was planted, and when harvested in the autumn the average crop on all the plots on which not less than eight

pounds of red clover had been sown and ploughed under exceeded in weight the average yield of the three check plots on which there was no clover, by four tons two hundred and thirty-three pounds per acre.

WM. SAUNDERS,

Director Experimental Farms.

Ottawa, Ont., July 29, 1899.

Pure Cultures in Butter- making

Their Use by Our Dairymen Strongly
Recommended by the Bacteriological
Department O.A.C., Guelph

To the Editor of FARMING:

I would like to draw the attention of owners and patrons of creameries and cheese factories to a circular recently issued by this laboratory to the creameries and cheese factories throughout the province.

The circular contains information which will be of service to cheese and butter-makers. It also states that this laboratory is prepared to furnish them at a nominal cost with pure cultures for cheese and butter-making.

There have as yet been very few applications for these starters, more cheese than butter starters having been asked for. There can only be two reasons why this opportunity is not more fully taken advantage of. Either the butter-makers consider that their butter cannot be improved in flavor or keeping quality, or that they are unaware of the advantages to be derived from the use of pure culture starters.

In order to give some information to those who have not been able to give much attention to the subject I have made a few extracts from a recent report of Prof. Conn, of Storrs, Conn., who has recently been inspecting the European dairy methods. As he is, perhaps, the highest authority in America upon the bacterial production of flavor in butter his opinion may induce patrons and makers to make further study of the question:

"It has been proved that the quality of the product is in a considerable degree dependant upon the particular kind of bacteria which may ripen the cream. These facts are well known, but the practical application of them has not been very widely extended in any European country except Denmark and North Germany.

"In Denmark the use of pure cultures has become very common. It is stated that *over 95 per cent.* of the butter made in this great butter-making country at the present time is made by the agency of artificial cultures used in cream ripening. This percentage is surprising, and conveys a very great lesson. Danish butter-makers stand at the head of the profession in the world. Danish butter commands the highest price and has the highest reputation of all butters. The Danes themselves adopt with practical uniformity the use of pure cultures, and the undoubted inference to be drawn is that the use of pure cultures in cream ripening results in uniform advantage."

The conclusions of the Danish Association of Butter-makers is given as follows: "Butter made with pure cultures is almost always better than that made by the older method. While this is not always the case, and while it is true that some samples of butter made without pure cultures ranks very high there is no uniformity in regard to the grades of the other types of butter, while the butter made of pure culture is of a uniform grade. There has been since the introduction of pure cultured a noticeable and an almost universal improvement in the grade of Danish butter in general."

"The results of this method of the use of pure cultures in Denmark are of course satisfactory, or the method would not be so widely used. It is somewhat more expensive than to make butter without pasteurization and pure cultures, and we may be sure that if the results were not satis-