



A leading road in Wellington County. Note the crown of the road.

## The Clover Crop and Its Value to the Farmer

The value of the clover plant to the farmer of to-day cannot be overestimated. Not only does it furnish available food for stock, but it contributes valuable plant food to the soil.

Many farmers do not realize the true value of clover as a stock food. In many sections Timothy is almost exclusively grown for the hay crop at the expense of clover and other grasses. This is due largely to the fact that Timothy hay commands a better price on the market than clover. Hay composed of pure Timothy, not too fine, is graded as No. 1, and commands the best price on the market. As soon as clover is mixed with the Timothy the grade is lowered to No. 2 or No. 3, depending upon the quality and percentage of clover used.

While Timothy is an excellent hay, especially for horses, and can be cured with less care than clover, the growing of clover should not be neglected. As its composition shows, clover contains more protein than Timothy, one of the most essential and high priced food ingredients. Jenkins and Winton give the average composition of Timothy and clover as follows:

	Water	Ash	Protein	Fiber	Carbo- hydrate	Fat
	per cent	per cent	per cent	per cent	per cent	per cent
Timothy	13.2	4.4	3.9	20.0	45	2.3
Clover	15.3	6.2	12.3	24.8	38	3.3

From this table it will be seen that clover is one of the most valuable fodders that can be produced on the farm for growing, fattening or dairying animals. When clover is fed to stock less grain products are required than when Timothy is fed.

### ITS MANURIAL VALUE.

As to the manurial value of the two plants, clover hay contains more nitrogen and potash, but less phosphoric acid than Timothy. Estimating nitrogen at 16c. per lb. and potash at 5c. per lb., it has been found that clover per ton to be used as manure is worth twenty to thirty per cent. more than Timothy. It has also been estimated that each ton of clover withdraws from the soil about 40 lbs. of nitrogen, 38 lbs. of potash, 11 lbs. of magnesia, 40 lbs. of lime, 11 lbs. of phosphoric acid and 15 lbs. of sulphuric acid, or an aggregate of ash ingredients alone of nearly 160 lbs. These figures show the value of feeding the clover or other hay crops on the farm and returning the manure to the soil.

### A NITROGEN GATHERER

But in spite of the fact that clover takes from the soil a considerable amount of the essential plant food elements, clover as a fertilizer is scarcely surpassed by any other plant. Clover, like all other legumes, has the power to appropriate nitrogen from the air. This

nitrogen is gathered by minute organisms dwelling in the nodules on the roots of clover plants. These bacteria gather the nitrogen from both the air and soil and give it over to the plant as food. Here lies the clover's value as a fertilizing plant. Before the clover and bacteria theory was known farmers well knew from practice that on fields where clover, peas or other legumes were grown the soil was enriched, and that subsequent crops would grow and yield better than if no leguminous crop had been grown. There is, therefore, no better crop to grow for increasing the plant food in the soil, and especially if the clover hay crop is fed on the farm. There is no better way of increasing the productivity of the soil than by plowing under a clover crop. It will pay farmers to grow clover for this purpose only, especially on land whose fertility has been depleted by continually growing grain. Clover should form a most important part in every crop rotation.

### CAUSES OF BAD "CATCH"

In many districts complaints are heard that clover cannot be grown, or that a good "catch" of clover cannot be secured. This may be due to several



causes. The seed is often placed too deep in the ground. Experiments have shown that from one-eighth to one-fourth inches deep, will insure best stand under the average conditions of weather. The seed-bed should be carefully prepared. A light harrow is the best for covering the seeds. A common trouble is the drying out of young plants, which may in a large measure be prevented by seeding early in the spring. Another cause may be the want of nitrogen fixing bacteria in the soil. This can be overcome by inoculating the field with soil that comes from a field where clover grows profusely. It can also be done by inoculating the seed before sowing with the desired bacteria.

To retain a good stand of clover, it should be cut before the seed forms, and nature, foiled in her purpose, will put forth her forces to grow and to throw a vigorous second crop. If this is cut before seed forms the same effort will be put forth to produce a third crop. A better stand is therefore maintained by cutting the clover before it forms seed. The clover plant roots deeply, and when it dies leaves almost one-half the plant—the stem, some leaves and roots—in the ground. In this way it increases the fertilizing material in the soil far more than do timothy and other grasses.—J. W. W.

### Making Pastures

(Continued from last issue.)

A frequent case is where land has been neglected for years, until it has become a perfect mat of couch or switch grass. (This of course is known under different local names.) In despair of cleaning it at a reasonable cost the owner decides to let it "go to grass" as hundreds of acres have actually gone.

Wisely, it is considered desirable to render nature some assistance, but it is almost a misnomer to dignify that assistance by the name of preparation.

In this instance also the routine previously advised is applicable. Rigorous harrowing in autumn, a heavy top dressing for the winter, and the sowing of suitable strong growing seeds in early spring, are the means by which the most profitable results can be assured.

I know personally plenty of cases where this rough and ready treatment has been followed by a fairly paying plant. Especially may improving crops be anticipated when the land is continuously manured, or where grazing cattle are liberally assisted with artificial food.

The actual work of sowing grass seeds is simplicity itself, but as the germination of the seed and the equal distribution of the plant depend upon the accuracy of the process, the details should be carried out with due regard to the serious loss which failure certainly entails. The necessity for making the seed bed fine and firm should be well understood.

At sowing time the additional requirement is a soil dry enough to allow the implements to work freely without any tendency to gather in clods on the roller. Of course, waiting to sow will often tax the patience severely, but it is worse than useless to enter into a conflict with nature. All such cases inevitably end in the defeat of man.

The first business is to run the harrow over to prepare the land for the seed, and the sowing may be either performed by the hand or by means of the common seed barrow. Some men are skilful in spreading seeds equally by hand, and on a still day this work answers well. But grass