

FARM AND FIELD.**HINTS CONCERNING CLOVER.**

Clover is sown, as a rule, early in the spring, whether with some grain crop, the cultivated grasses or as a crop by itself. A practice common in the northern States is to sow clover on late snows in March or April.

The analysis of red clover indicates what manures will increase its growth. It contains 92 to 84 per cent. of lime and about the same per cent. of potash, with 9 to 10 per cent. of phosphoric acid, magnesia, etc. As lime enters so largely into its composition, lands deficient in this respect require generous applications of lime. Deficient soils are benefited by gypsum (sulphate of lime), the phosphates and wood-ashes. Common stable manure, containing as it does all the elements of a good fertilizer, is also suitable as a top-dressing for any pasture or meadow.

While gypsum is not always a success on ordinary soils, sown broadcast at the rate of one to three hundred bushels after the leaves are developed, it seldom fails to promote a remarkable growth of stem and leaves. Experiments made by Dr. Pincus, of Germany, regarding the action of gypsum on clover, made it appear that the sulphates check the development of the flowers and also of the seed, from which he inferred that, while the application of gypsum is favourable to a large increase in the yield of hay, it is not favourable to the development of the seed crop. Commissioner Killibrew, of Tennessee, says he has rarely found benefit from the top-dressing of gypsum on clayey loams; its effects have always been apparent on a strong limestone soil. In a dry season gypsum is undoubtedly beneficial on all soils, and it always serves a good end in its highly stimulating effects on well-restored lands where there is a good coat of clover.

Bones are also an invaluable aid to clovers, their leading elements being lime and phosphoric acid; nitrogen is also abundant. A dressing of bone-dust will often quite restore old pastures which have been long cropped, and the phosphate of lime exhausted. Grasses are greatly benefited by wood-ashes. A top-dressing of ashes may be applied to grass on all kinds of soil with the assurance that they will pay the expense attending the application. For permanent mowing lands ashes are advised when they can be obtained in sufficient quantity.

Coarse manures ought not to be thrown on clover, as they are liable to injure the plants. An excellent top-dressing for meadows, to be applied after the last cutting or in the spring, when the soil is poor, is barnyard manure composted with muck, peat, leaves, sod, potato tops and other perishable vegetable matter.

Professor Levi Stockbridge, of Massachusetts, after a series of experiments with mineral manures at the Agricultural College at Amherst, prepared the following formula for a fertilizer to be sown on clover—broadcast—in the early spring to induce an increased yield: Nitrogen, 43 pounds; potash, 40 pounds, and phosphoric acid 11 pounds. These materials he advised to be supplied in the form of sulphate of ammonia, 24 per cent. dry salt, 215 pounds; muriate potash, 80 per cent. dry salt, 80 pounds; super-phosphates, 80 pounds. This amount was designed for one acre.

ENGLISH VIEWS ON POTATO CULTURE.

The London *Gardener's Magazine*, in a recent issue considers at length a number of disputed points in potato culture. The sum and substance of opinions expressed is briefly as follows:

It is a matter of secondary importance whether whole sets or cut sets are planted, so that the

seed is sound and contains strong eyes. The refuse and sweepings of the winter store abound in weak eyes, hence should be avoided for seed.

It matters little whether the seed be dormant or sprouted at the time of planting. Short, plump shoots are obtained by sprouting seed in full daylight which are almost certain to result successfully, but the man who plants large tracts of land cannot do this, and generally speaking he does well without it.

When very large potatoes are planted the crop usually proves less satisfactory than when seed of as mallish or medium size is employed. The sets cannot be too ripe; if hard as flints all the better; if shrunk and shrivelled through being immature, all the worse. The reason why large sets do not usually produce good crops is that they produce too many shoots from one centre. The consequence is that the haulms become crowded, and form a cold mat on the ground, to the injury of the tubers that are beneath. The fancier reduces the number of eyes, because one or two strong shoots will pay him better than a crowd of weakly ones. The farmer adopts the shorter method of planting small sets whole or large sets cut, for he knows that large sets uncut will fill his field above ground and keep it empty below.

To plant unreasonably close is to ensure failure rather than to court it. The distance apart depends on the variety and the character of the land. The nature of the season also has an influence. For instance, warm, wet weather promotes an undue spread of haulm.

The potato will grow in any soil; and in a particularly good season the worst soils will produce good crops. But in a run of years the best returns are obtained from a deep fertile loam, or liberally-managed sand, or well-drained peat. Limestone soils produce good potatoes, but the crop is usually small, both in bulk and sample. Well-managed clay land will produce bulk without quality; or, at all events, never such a quality as a deep, fertile, sandy loam.

To grow the crop well is a somewhat costly proceeding, to speak comparatively, but the risk is slight when the work is well done, and a fair return in bulk will range from eight to fifteen tons to the acre. There are two ways of evading the disease, and the adoption of either must be determined by consideration of the circumstances. On a light, lively soil, in a favourable climate, the early sorts will make a fair return and will be removed before the disease appears and in time for planting the land with a crop to follow. On a late soil, or where the late system must be followed, the great matter is to plant a variety that the disease, if it comes, is likely to spare. Happily there are some first-class sorts that are practically disease proof; for although in a bad season they may suffer more or less, they do not, even in the worst case, suffer obliteration.

VALUE OF DIFFERENT FOODS.

Experiments and investigations by scientific men have done much to throw light on the different problems in feeding. We are much better able to decide on the comparative value of different articles of food than we were a quarter of a century ago. But science is often expected to do impossible things, and, in this matter of feeding, some scientists have possibly done harm by too hasty generalizations. We confess to a good deal of distrust, in the present state of scientific attainment, of attempts to exactly state the comparative value of different articles of food.

The chemist can tell us exactly the composition of a food, he can tell us pretty accurately what percentage of food has been digested in a given case, and he can help us much to determine whether we are feeding economically. In like

manner the practical feeder will come to reasonably correct opinions as to the greater profit from different kinds of food or modes of feeding. The results of long experience with a large number of animals has great value; but each must be careful in attempts to make general rules.

There are considerable differences in the chemical composition of different samples of the same grain or grass. In modern milling "wheat bran" may vary wonderfully. The maturity of the crop when harvested; the mode of keeping, and its consequent condition, all have important effects. Most feeders underestimate the importance of attractive appearance, odour and flavour in feeding stuffs. The quantity eaten and the good done by a given quantity are much greater when the food is attractive than when only hunger will compel reluctant feeding.

The great differences in animals adds to the difficulty of making absolutely correct statements of the value of foods. Of two horses, one may grow fat on a ration which will barely keep his mate in fair condition. One may do well on Indian corn; the other need oats. Of two pigs from the same litter, one may add fifteen pounds of weight for each bushel of corn consumed; the other not half as much. There is a fair average result; but this is to be determined only by many trials. Differences in temperature, in the shelter, in the kindness of treatment, in the regularity or frequency of feeding, may cause greater variation in result than differences of kind of food.

We must also bear in mind that the value of a food may be much greater or less as it is fed in connection with others. None of us would do well to attempt to live on either bread or meat alone; yet both are valuable foods. At first sight it would seem a simple question to determine the comparative value of milk and corn as fed to pigs. Feed one lot with corn and another with milk, keeping record of quantity eaten and gain made, and one might say you have the answer; but, undoubtedly, feeding both corn and milk to the same animal would give better results than feeding either alone.

A food poor in itself may be quite valuable when fed in connection with highly-nutritious foods. Thus, one could afford to pay a good price for wheat straw, if he had no other food than corn and oil-cake; just as one will do well to feed some such food as oil-meal, even if the cost be high, when he finds it necessary to make a poor food, like wheat straw, the major part of the ration.

We write this not at all to cast discredit on the careful and very valuable experiments which have been made in this direction; but to give a needed caution against implicit reliance on tables of food values; and as a word of explanation why we refuse to give precise answers to many questions of this nature which come to us.—*Breeder's Gazette*.

GET AN EARLY BREAKFAST.

As the days get longer and work presses, very many farmers with their hired help will rise early and work an hour or more, often two hours before breakfast is ready, attending to "chores," hoeing, cutting wood, etc. Now, we protest that, however convenient, this is a very injurious habit, not only on the farmer himself, but far more so on his sons or any boy who may be working with him, as they are young and growing, and their stomachs need food sooner than the older ones. How often we have heard young men complain of the length of time that it seemed to them elapsed from the time that they began at the wood-pile in the morning until breakfast was ready, even when there were plenty of women to do the work. But we have another and stronger reason to urge our