

was a failure. Still another expert declares: "it must have a rich, sandy loam," and forthwith from the deserts of Nevada, the sand hills of Nebraska, and the thin, worn, clay soils of the South come reports of satisfactory yields! Such results are significant, indicating better returns than any other crop brings from these varied soils, and that few farmers are justified in postponing the addition of alfalfa to their agriculture because of supposed hindrance of soil and climate.

These testimonies, together with what have been published of our local experiments, show that there are no greater barriers to success with alfalfa at almost any point in Western Canada than what are imposed on the crop by the men who are growing it. Last year reports of the Manitoba experiments were most encouraging in view of the fact that the crop was to a great extent left to "fend for itself" after it had been seeded. Had the professor's instructions and hints been more carefully followed and greater interest taken in safeguarding the experiments for the purposes of accurate returns, the results would certainly have justified almost any hope as to its future.

Authorities and humble experimenters alike seem to agree that there are

only two things that alfalfa cannot stand, and these are wet feet and abnormal acidity in the land. It never seems to do well where the water is nearer to the surface than six feet, or where in winter water will stand on the ground for over forty-eight hours. If water flows over the field for some time due to a freshet, the alfalfa is often found uninjured if too much soil has not been deposited on and around the plants. Even in such instances, fields have been saved by a disking once or twice, but it is wholly unwise to sow on a field subject to overflow, or one where water rises to the surface in winter or spring; likewise on a field so flat that water will not run off in time of a heavy rain or promptly drain out through the sub-surface.

The alfalfa roots will find their way to moisture if given the right surface conditions. There are profitable alfalfa meadows in parts of Kansas where it is eighty

feet to water, but there has not yet been found one that is prosperous where water comes close to the surface, or where it stands on the ground in winter.

The other neighbor that alfalfa will not tolerate is an excess of acidity in the soil. This often happens where corn and wheat have been raised for many years, thus robbing the soil of much lime—a condition that may be remedied by an application of lime to the land just before sowing to alfalfa, harrowing it in before-hand, or, if the seed is to be broadcasted, the lime may be applied just before sowing, when once harrowing will suffice for both, or it may be sown with a drill—500 to 1,000 pounds per acre.

A simple test for acidity is to make a deep cut in the ground with a knife, pressing the earth slightly apart, then push a piece of litmus paper into the opening

in clods and baked soil. Alfalfa is a child of the sun; permanent shade from any source is its enemy, and when young it is not a good fighter against adversaries of any sort. More failures are due to weeds than to any other cause, and unfortunately all the weeds do not grow on the land of the farmer who is shiftless or neglectful.

Alfalfa in Comparison with Other Feeds

The feeding value of alfalfa is largely in its chemical compound known as protein; its extreme digestibility is another desirable quality to be considered, and not least is its appetizing character. Not only do all animals like it, but when given in moderate quantities it seems to increase the general appetite for more fat-making feeds. Steers beginning to "fall off" on a heavy diet of corn, or in fact of anything else will come to



food and 6.95 pounds of proteids, while 100 pounds of alfalfa contain 54.43 pounds of digestible food and 11.22 pounds of proteids. Another station reports that the average yield per annum of green clover to the acre is 14,000 pounds, and of green alfalfa 36,500 pounds. The protein in the clover is 616 pounds, and in the alfalfa 2,214 pounds; one ton of alfalfa has 265 pounds of protein, and clover only 246 pounds.

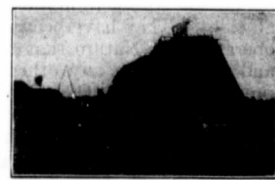
But alfalfa will produce, two, three or more cuttings each year

while clover will produce but one or two at most. Further, clover will ordinarily survive but two years, while alfalfa will last from ten to one hundred, thus saving many plowings and seedings.

It is also estimated that the stubble and outgrowth of alfalfa are worth at least four times as much for humus as are those of clover, while the mechanical and other beneficial effect of the long alfalfa roots far excel those of clover. The alfalfa field is green for pas-

turage a month earlier in the spring than clover and may be mowed a month earlier. It starts a vigorous growth at once after cutting, covering the ground with its luxuriant foliage before the second growth of clover has made any substantial progress.

We cannot at this writing do justice to its marketing advantages. The records are most voluminous where it has been handled persistently. One man writes from Lincoln County, Kansas, that from five acres he received in one season \$100 for hay, \$150 for seed and \$20 for straw.



Dinner Time in Old Devon

and press the earth together. Leave the paper there for a few hours. If upon examination the litmus paper has a pink appearance it is proof of acidity, and this, as already said, may best be remedied with lime.

Forward Preparation

Many of the most successful growers of alfalfa begin preparations two or three years before they sow the seed, and having regard to the perennial if not everlasting nature of the subsequent crops, this or any preparation cannot be grudged. There must be, by rights, the most perfect physical condition of the soil. It should have been plowed deep for at least two years, and, generally speaking, a two or three inch sub-soiling along with a seven or eight inch plowing will be very helpful.

The soil's condition should be like that of a garden. Care should be taken never to work with the ground when too wet, as such working almost inevitably results

their appetites after being fed only a few pounds of alfalfa daily.

Alfalfa alone is not a fat-making food. Animals fed upon it grow in weight, but the weight is principally of bone, blood and muscle. It is without a sufficiency of fat and carbohydrates, and these should be added in such food as corn, corn meal, etc. When alfalfa is fed alone, all the protein cannot be digested, and therefore it is always economical to add some carbonaceous food, if animals are fattening for market.

Many things are understood best through contrasts with others better known. In every part of an agricultural country certain crops are considered standard, and all others are judged by comparison with these. For example, red clover almost everywhere is ranked the best yielding forage, and the fertilizer and renovator par excellence.

After a series of tests, one report says 100 pounds of clover contain 47.49 pounds of digestible