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The Summerfallow

Wherever moisture is stored up in the soil so that the crop can use it, a satisfactory crop may be brought to maturity even if no rain falls

By Seager Wheeler, Rosthern, Sask.

There are several reasons why summer-fallowing is done each season. One of the most important is to have a certain portion ready prepared for cropping in the spring and because with our system of seeding so many acres on stubble-plowed land it is necessary to give the soil a rest. In some districts it is neces-sary to do this where the annual rainfall is light. In some access it is here is light. In some cases it is because weeds are getting the upper hand. The general impression is that it is done for two objects. Conservation of moisture and the destruction of weeds. There are, however, other equally important reasons why a portion of the land should be summerfallowed which should not be overlooked. Cultivation is manure. By a proper system of cultivation we may create a fresh store of plant food and create a fresh store of plant food and build up our soil against the day of impoverishment that will surely come if the present system of grain cropping is continued. While this may be best done by a system of rotation, it is not my intention at this time to go into this matter, but rather to deal with the bare fallow system and it will be readily bare fallow system and it will be readily seen that by following a proper system of soil building by cultivation, the conservation of moisture and the destruction of weeds will naturally be attained. While it is not possible to lay down

a method for summerfallowing that will hold good in every district, the one outlined may be modified or enlarged on to suit the different conditions of each and every district.

Do not Plow Late

There are many different methods lopted. Some have a definite plan or adopted. purpose in view. Others again are hap-hazard. The idea that so long as the land is black or that the plowing may be done at any time, will not suffice, and the sooner we get away from these ideas the better it will be for the welfare of the country at large. Many fallows are plowed too late in the season. Some of the reasons given are that by plowing late in July it saves a lot of work, because there are few weeds to bother with in the fall at harvest time, but it is a different story next year when the crop is growing, because then the weeds are in evidence. Late fallowing is little better than fall plowing and the prime object of summer-fallowing is missed. There is no con-servation of moisture and the weed prob-

lem is increased instead of decreased. Another method is to seed the plowing lightly with grain to provide feed for stock running on the fallow. While this system saves work, it is not a sound one. It would be more profitable to seed down a permanent pasture for a few years and properly cultivate the fallow because in many cases the soil becomes too compacted and this should be guarded against. What is much more important is a firm, moist, mellow, seed or root bed. It is not my intention to criticize this system, because there may be reason in following it, but the chief point to be emphasized in this connection is that we cannot have a fallow and a pasture at the same time. It is neither a good fallow nor a good pasture.

One of the reasons why we should lay by a certain portion of land for summerfallow is to provide against a partial or total failure of crop. If we go back to the season of 1914 we find that during the severe drought in almost every dis-trict good crops were assured where sown on summerfallow, whereas stubble lands, plowed or unplowed, resulted in The reason for this partial or total failure is apparent, namely, lack of noisture for the growing crop. It was not so much lack of rain during the growing season, but lack of moisture in the soil. Wherever moisture is stored up in the soil, so that the crop can use it, a satisfactory crop may be brought to maturity even if no rains fall.

Restore Fertility to Soil

Another important reason why it is necessary to summerfallow is that continued cropping to grain will decrease

Spring plowing stubble 7 inches

deep for wheat. Note small packer attached to plow and ideal condition of soil as plow leaves it at first operation

the average yields and deplete the soil of its fertility. The argument is put forward that there is so much fertility in the soil that every bushel of wheat or other grain removes a certain amount of this soil fertility and that in time, by this soil fertility and that in time, by continually growing heavy crops of grain, the fertility will be used up. Theoretically this seems a good argument, but it is not true. The soil is inexhaustible, providing we husband its resources, and it is a fact that we may, by good sound to the first second second second second second second second to the first second s methods of tillage restore and add to the

The slight yearly decrease in our average yields should not be charged against the heavy crops taken from the soil, but to the abuse and illtreatment, of the soil by the many slack methods in force today. The absolute need of having as much as possible of the seed bed prepared and fitted for the seed the previous season appeals to me more forcibly each season. It is undoubtedly forcibly each season. It is undoubtedly true that the time is coming when we shall be compelled to change our system of continual grain growing by growing intertillage crops. There are several of these which may be grown profitably which will allow us to maintain stock on the form and improve our present on the farm and improve our present conditions, but space in this article will not allow me to go into this subject more fully.

Effect of Cultivation

Regarding the effect which cultivation has on improvement of gourg soil and

covers the ground and some is in blossom, while the winter wheat is in the stem. A rain fell on the 13th of May. There has been some rotation of crops on this land. The winter wheat land was in brome grass for about ten years until 1912. The for about ten years until 1912. The other crops mentioned have had some rotation during the last twenty years of potatoes and peas. There was no definite plan or system laid down for rotation of crops, but what I must point out is that the seed bed was well prepared before reading these cross last season before seeding these crops last season. The soil was in good tilth and contained plenty of moisture.

Summerfallow Requirements

Before attempting to give some of the Before attempting to give some of the best methods of summerfallowing that may prove applicable in most cases, it is well for the reader to have a definite idea as to the requirements of a good fallow. The most important points are: The control of weeds; storing up in the soil all the moisture that falls; fitting the soil to receive the moisture; plowing unlocking the plant food or creating fresh plant food; time to plow; depth to plow and the formation of mulches to retain the moisture

Encourage Weed Germination

As weeds are one of the most important objects and really come first on the list, this work should already have been started. To control the weeds it is necessary and important to either disc the land or shallow plow the previous

Splendid tilth of land as left by plow having packer attachment. Practically no loss of moisture. Large packer to follow to compress more completely the furrow slice.

the restoring of may say that on land on my own farm that was broken up twenty years ago, there are growing at the present time some plots of Red Clover, Alfalfa, and winter wheat.

On April 20 measurements were taken On April 20 measurements were taken of the growth of these crops this spring after coming thru the winter in fine condition. Red clover was eight inches high, alfalfa twelve inches and winter wheat ten inches. No rain had fallen since the snow left early in April. At the present time of writing, May 14, the alfalfa is almost knee high, the clover

fertility, I fall. If this has not already been de it may be done early in the spring, or, failing that, immediately after seeding will sometimes give good results. Of the two methods, discing and shallow the two methods, discing and shallow plowing, I prefer the plowing in the fall. Discing, while a trifle more rapid, is not so satisfactory as shallow plowing. The land should be plowed at a depth of from two to three inches—as shallow as possible so long as the furrow turns over completely. The plowing should be packed and if time permits, plank dragged. The plank drag is described in a former issue. Harrowing may be left until the spring,

when it should be given as soon as the land is dry enough to work. The harrowing warms and aerates the soil, starts the ing warms and aerates the soil, start; the weeds into life and at no time of the season will weeds make such a growth as in the spring. If only a single plow-ing in the summer is depended on, as is usually the case, in spite of the rains that fall and the heat, many weed seeds that fall and the heat, many weed seeds will not germinate, but will surely come into life the next season in the growing crop. Some,' such as wild oats, will grow from a depth of six inches or deeper still and land that was black and clean the previous summer will sometimes be the weediest when the crop is growing. The important object we should strive for is to encourage weed germination. It is easier to destroy weeds than to make them grow. By the plowing in the fall we may induce a greater proportion to germinate in the spring than at any other time.

Plow First Shallow

But if you cannot do the work at that time, do so in the spring or failing then as soon as seeding is over, but do so

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Plow Deeper than Usual

It is a safe statement to make that most of the plowing done is too shallow. After several years of plowing and crop-After several years of plowing and crop-ping, if no attempt is made to deepen the plowing, the soil becomes loose and spongy and this is the cause of much soil drifting. The humus is depleted and blown away by the winds. A good deal is also carried away by heavy rains and in the spring by melting snow. By plowing an inch or two deeper and bringing up fresh soil from the bottom, the top soil is buried forming the root bed and the new soil on the surface acts as a mulch. As the plants do not feed on the surface, this soil is acted on by the elements thruout the season

on by the elements thruout the season and is forming into new plant food for and is forming into new plant food for another season, at the same time as it is preventing drifting of the soil. The accompanying photograph shows the soil as the plow leaves it. The plowing is six *to seven inches deep. Note the small lumps of raw sub-surface soil referred to which make an ideal mulch at once and thus prevent any evapora-tion. Another illustration shows the finished plowing after the use of the small packer attachment to the plow. I con-sider this attachment one of the most

