

in the hope of reaching moisture farther on, so that a few inches of dry soil a foot from the surface is an effective barrier against a deep root system. In a good summerfallow the moist soil extends from a few inches below the surface to three, four or five feet. Such a store of moisture provides the best of conditions for the roots to have a deep feeding ground.

SOILS THAT ARE BENEFITTED BY SUMMERFALLOWING

In soils of a sandy or gravelly nature it is impossible to store much moisture, and little should be expected from a summerfallow on such land. Neither will those underlaid near the surface with shale or other impervious matter be benefitted to any great extent, but all others, particularly those with heavy subsoils, will hold moisture from one season to the next and can be summerfallowed to advantage.

FREQUENCY OF SUMMERFALLOWING.

In the districts with the lowest rainfall the safest practise is to summerfallow practically half of the cultivated land each year. Where the rainfall is heavier it is frequently possible to get two good crops in average seasons, but with our present system of farming not less than one third of the dry land farm should be in summerfallowing each year.

WHEN TO START SUMMERFALLOWING.

As far as the storage of moisture is concerned there is no better time to start summerfallow cultivation than when the crop is removed. Discing after the binder destroys weeds, covers weed seeds and shattered grain, and mulches the soil. Where there is horse and man power available it is good practise. Discing late in the fall after the crop is threshed is often possible when it cannot be done after the binder. At this season of the year horses are usually in good condition and the work can be done cheaply. With the early discing, if there is moisture near the surface, grain and weed seeds will germinate, and the plants will be killed in the winter. The late discing will only cover the grain and weed seeds and insure germination in the spring.

The objections to fall discing are that the stubble is broken down and does not hold snow as well during the winter, and in some cases considerable good feed is covered and lost. Where there is much discing to do, it is usually good practise to get some of it out of the way in the fall as it can usually be done more cheaply then than in the spring.

SPRING CULTIVATION.

Any land to be summerfallowed that has not been disced in the fall should be thoroughly worked up as early in the spring as it is in condition. It is necessary to stir only enough soil to cover all weed seeds and grain and to kill the millions of small Russian Thistles that start almost as soon as the snow goes. Particularly in districts where Russian Thistle is prevalent,—and that includes most of Southern Alberta,—the cultivation before plowing is of great importance. If the thistles are allowed to grow undisturbed until the first or middle of June they have, in an ordinary season, pumped most of the moisture from the top foot of soil. They have not only used up the water that the summerfallow is designed to save, but they have left the land so dry and hard that it cannot be well