

## PLANTS DRINK THEIR FOOD.

In addition to water, plants must get plant food—chemical elements—from the soil. These cannot be taken up in solid form as an animal gets its food. They must first be made soluble in water in which form they may be absorbed by the crop. The plant does not eat its food, it drinks it. If the “drink” or “soil soup” is thin, a large amount of water has to be taken up to get the necessary nourishment. If, on the other hand, the solution is concentrated or thick, a smaller amount of water will produce satisfactory growth. The “soil soup” is always thicker in fallowed land than on land not fallowed. This, together with the added moisture stored during the summer, explains why the fallow is an insurance against drought.

## THE SCIENCE OF SUMMERFALLOWING.

Successful “Dry Farmers” have become very expert in handling the summerfallow. Their reasoning is something after this fashion:

## OUR VITAL PROBLEM—THE STORAGE AND CONSERVATION OF MOISTURE.

“Ours is a ‘semi-arid’ climate, that is, it receives less than 20 inches of water from the clouds in an average year, or in other words less than half as much as falls in Ontario or the corn belt or Great Britain.

“Low yields in dry countries are caused by lack of water; then how can we make up that lack? Irrigation is not feasible with us, all we can do, therefore, is to make the best possible use of the moisture we get in the form of rain and snow—but principally the rain, because we cannot store nor retain the moisture from the melting snow as well. This rain water to be of use to the crop, must be gotten into the land—must be “stored” in the soil and retained there.

## PREVENT THE “RUN OFF.”

“None of it may be allowed to run away. Unless we are careful some of it may ‘run off’ after the heavy downpours of early summer. In order to prevent this happening we shall plow and have the land in a receptive condition so that when the rains come they may go into the soil and not run off the surface where they can do no good to the crop. (In 1914 on the University Farm, a fallow plowed June 1st yielded 30 bushels 19 pounds of wheat, while one adjoining but plowed July 1st and otherwise similarly treated, yielded only 19 bushels 55 pounds. Oats under the same conditions produced 53 bushels 9 pounds, and 41 bushels 31 pounds respectively, while barley on the early fallow yielded 28 bushels 12 pounds and on the late fallow 16 bushels 44 pounds per acre).

“If the plowing is left until late, some form of surface cultivation should be given early, in order to prevent weeds and volunteer plants growing and to keep the soil from drying out.