

## Deep Storage of Moisture

(Special to the Farm Magazine.)

**W**HILE PRACTICALLY all farmers that make any claim to progressive agricultural practices are aware of the importance of deep storage of moisture in dry farming, the importance of deep storage reaches further than merely affording a larger supply of moisture for the dry seasons and naturally implies conditions that lead to a deeper rooting system of the growing crops.

"Thus," says Professor Scudder, the Oregon Agricultural College agronomist, "the crop roots have a great area of soil from which they obtain stored moisture and plant food. The deeper stored moisture which cannot reach the upper layers of soil rapidly enough through capillary action to supply the needed sustenance, can be utilized by the deeply rooted plants as the hot weather approaches and the grain filling period comes. It is this sub-soil moisture which acts as the dry farmer's reserve and permits him to produce a good crop practically without rain."

"Getting the moisture into the soil is almost as important as is its conservation after it gets there. It is at least of first importance, for moisture cannot be conserved until it is taken into the soil reservoir."

### Inducing Deep Storage.

"To induce deep storage the surface soil must be maintained in an absorptive, sponge-like condition throughout the precipitation period as far as possible, as already described, by plowing or disking, increasing the humus content, etc., so that precipitation will strike in and be carried to the subsoil immediately, not only by percolation but by capillary action downward."

"Indeed, one of the most important functions of capillary action is to carry moisture downward into the lower, drier areas after percolation has ceased. Here again a moist subsoil is of greatest importance, for a far-reaching capillary movement downward is hastened where the soil particles are already moist, "sticking" the way for a more rapid passage of further moisture."

### Handling Properly.

"Where the surface soil is left hard and compact over winter and early spring, not only loss from surface washing occurs, but moisture does not penetrate into the subsoil. It remains largely in the surface layers. This results in shallow rooting of the crop plants and a consequent larger growth of leaf and stalk, a larger loss by

evaporation, a greater exhaustion of the plant foods in the surface layers and, of course, greater suffering in the dry, hot weather when filling time comes.

"In properly handled soils in regions of 10 to 15 inches rainfall, the moisture may be carried to depths of 8 and 10 feet and at this depth it is by no means beyond reach of even the

comparatively shallow rooted grain crops. Their roots strike steadily deeper and deeper and draw upon this deeply stored moisture directly and indirectly through the lesser distance that capillary action must carry the more deeply stored moisture to them. As a matter of fact, it is not uncommon to find a portion of the roots of the wheat plant penetrating to a depth of eight or ten feet, although this does not occur, of course, except where moisture has penetrated that far, for root penetration follows only in the path of moisture."

## Care Of Farm Implements

**I** WAS always called a crank on the care of farm implements. What they meant was that I took more time than was profitable to care for the tools; but to me it was more pleasure to use a well-cared-for tool than some weatherbeaten or rusty affair, aside from the quality of the work done with it.

The harrow was the only tool that I unhitched from in the field, it being too inconvenient to take in. Then the quality of the work it would do in either case could hardly be taken into consideration; so that harrow was cleaned and well painted once in two years, and it was out in the weather about six weeks every spring. It cost \$18 and I used it 30 years.

There was a watering place in the machine shed, and hitching up and un-

hitching were done in there. If it was a cold morning in early spring, the horses much preferred to go in there to drink than at the outdoor tank, and the same when it was hot. In showery weather, when working in the field, the doors were left open at one end or the other, whichever seemed the most favorable from the elements; then if we had to make a home run to beat the shower, everything was favorable for it.

The horses that took the plow out to the field in the morning brought it back again at noon. The plow must be sharpened every noon when in use. It took about 18 minutes to take off the plowshare, hammer it out cold on the anvil and put it on again. Then after dinner it seemed to draw 30 per cent easier when fresh sharpened. While

the sharp plow would run deeper, the dull plow would run shallower. At night the plow was brought in. There on the end of a shelf sat a tomato can with some machine oil and a paint brush in it, and it was a pleasure rather than a task to grease all the bright parts of the plow. Then if there was some damp weather and the plow was not used for a few days, there was no question but what it would do its part satisfactorily when wanted.

The same with the planter; it was handier to take out some corn on the planter than any other way. And with the cultivator, the mower, the tedder or hay rake, the horse or team that took them to the field brought them back again before they were unhitched. And even the binder the same; at morning and noon when the binder was in use there were 15 minutes or more spent on the binder with wrench, pliers, oil hole cleaner, oil can, etc., and I thought it was time well spent.

When the season's use of each tool was over, it was cleaned, all bright parts greased, then put away in its place. It was arranged to take tools apart but little; all heavy parts put back on ground floor, all lighter parts put overhead. If any repairs were needed on tools when put away, note was made of it, and then at some convenient time it was attended to. This to some looked like lots of needless work, but to me it was a pleasure, or the poetry of farming. And it was profitable, for the tools lasted about twice as long.



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