

DEMONSTRATOR GIVES ADVICE

POWERS TELLS FARMERS WHAT TO DO

Conservation of the Big Rainfall Important and Easy if Proper Methods Are Followed by the Ranchers of County.

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The recent period of abundant rainfall has left the soil unusually well supplied with moisture, and with the tremendous possibilities of our growing season just begun it seems desirable to direct attention to the most approved methods of conserving this supply of moisture for the use of crops throughout the dry months. The efficiency of soil water may be measured by the actual useful work performed by a given quantity of this water. To increase the efficiency and maintain an optimum supply of water during our growing period, requires a careful consideration of the reasons for the loss of water, and of the means of maintaining a suitable supply.

A greater average moisture content may be maintained (1) by direct addition of water in irrigation; (2) by increasing the water capacity; (3) or by checking the losses of water.

Omitting the first method, the water capacity of soil may be increased by changing the texture and structure. Any treatment such as liming or tillage which will increase the mellowness of the soil and introduce more pore space, makes it possible for the soil to absorb more of the late spring rains.

The only way of modifying the texture of soil is to increase the organic matter content as the per cent of sand and clay is fixed. In experiments conducted by the writer, it was found that the water capacity was increased on an average of 8 per cent for each per cent of manure used. After applying manure to the field, there was a gain in moisture about the manured strata, even before any irrigation or rain water was received.

The soil's supply of water is lost in three ways, namely, percolation, transpiration and evaporation. The former two of these can be little controlled. (a) Percolation can be lessened in irrigation by using only moderate amounts of water, and this should be much less for cultivated crops than for meadows. A loose cultivated surface will prevent percolation of spring rains over the surface. (b) Transpiration is the passage of water through the plant and out through the pores in the leaves and will vary somewhat with the drought resistance and water requirements of different plants. The loss is greater in proportion to the amount of energy used in securing the water. Lifting water from depths, poor cultivation, poor fertility conditions and arid weather elements all have some effect on the water cost of dry matter.

(c) Evaporation is responsible for the greatest waste of soil moisture, and it is this loss that must be understood and controlled. Evaporation consists in the absorption of water in the form of vapor, by the air. The capacity of the air for vapor depends on temperature, percentage saturation of the air, wind movement and other atmospheric conditions. Evaporation from a water surface is a good indicator of the mean effect of all weather conditions upon evaporation of soil moisture. Measurement of evaporation is as important as measurement of rainfall. The annual evaporation here from a water surface is something like four feet. We find by experiment that wind movement has more effect upon evaporation than temperature and humidity combined. The mean increase in evaporation per mile wind movement was found to be 10 per cent, and a three-foot wind break saved 21 per cent of the loss of an exposed water surface. Evaporation from a soil surface depends on the above and condition and wetness of surface and character of the

soil. Experiments conducted throughout the West, show that a wet soil surface may lose more than a water surface but where the top layer of soil becomes dry there is a saving by storing water in the soil tank. If we call the loss from a water surface 100 per cent, then the unmulched soil tank lost 56.7 per cent of the water surface.

Checking by Mulching.

Mulching is at present the most practical means of checking evaporation, but its importance is not fully appreciated and made use of. Mulch absorbs rainfall and lesser runoff, lessens capillary rise and evaporation, and ventilation, so that deep rooting and make plants more drought resistant.

The mulch must be provided promptly to be effective, and the aim should be to stir the upper strata, which is to form the mulch so that it will dry out rapidly, and it will then erupt upward capillary from below. The kind of mulch which is most effective is one that contains a good proportion of crumbs from the size of a pea to the size of a walnut, and is kept dry by cultivation throughout its entire depth. To provide such mulch it is necessary to cultivate when the soil is yet moist enough to hold together in small lumps. In cultivating the soil should be turned but not pulverized to a dust. The time to cultivate must be modified for each particular soil, but in general level cultivation every 12 or 15 days to a depth of 2 or 3 inches gives the most effective and economical mulch.

Cultivation must be most frequent early in the season and should always be given after heavy rains to prevent crusting. The depth of cultivation should be varied slightly and a sandy soil that is naturally mulched will lose more moisture if the mulch is fined or inverted so as to expose moist soil unnecessarily. In places where the grain was put in early and the ground has been compacted by spring rains, it is desirable to use such a tool as the ballock weeder. Potato ground and cultivated fields need early harrowing and continued, level cultivation to conserve moisture and keep weeds down. Alfalfa fields go through the dry months in better moisture condition and make more growth with lower percentage of foreign matter where they have been thoroughly cultivated in early spring with the alfalfa weeder and the loose earth rolled or harrowed down, making a valuable mulch. Early spring plowing and plowing for fallow should be harrowed promptly after plowing and after heavy rains to kill weeds and maintain a mulch.

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TAKE LIFE JOYOUSLY.

Take life too seriously, and what is it worth? If the morning wake us to no new joys, if the evening bring us not the hope of new pleasures, is it worth while to dress and undress? Does the sun shine on me today that I may reflect on yesterday, that I may endeavor to foresee and control what can neither be foreseen nor controlled—the destiny of tomorrow?—Goethe.

A Menopeliat.

"I have been waiting for the paper two hours and a half, waiter. Hasn't the gentleman finished with it yet?" "Oh, he's read it through some time ago. Now he's trying to solve the puzzles in it."—Fliegende Blätter.

Her Charming Ways.

"Isn't that girl charming? But what a curious way she has of dropping her h's!" "Yes, and such a bewitching way of letting her eyes fall too."—New York Journal.

An Envious Job.

"Why do you say he has a good job? He's only a stationary fireman." "I know. But he's a fireman in an ice plant. He can keep warm in the winter and cool off in the summer."—Buffalo Express.

Juvenile Legie.

Little Dorothy—Grandpa, can you remember Abraham Lincoln? Grandpa—Yes, dear. You see, I am a great deal older than you are. Little Dorothy—How much older must I be before I can remember him?—Chicago News.

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