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A Most Vital Part of the Tree.



FIG. 5—Tree roots uncovered, preparatory to transplanting, showing how near the surface the roots are and how far out the roots extend.

TREE ROOTS.

North Dakota Agricultural College.

One of the most vital parts of a tree is its roots. It is not known where the roots do their feeding. In Fig. 5, which is a photograph of a tree which is being dug preparatory to moving, the roots are seen spreading in all directions and quite near the surface.

That the tree needs moisture goes without saying. How is the tree with its roots just below the grass roots to get its moisture where the rainfall is twenty inches or less? The grass roots being nearest the surface get the first chance at the moisture and the tree suffers; this explains why there are no trees on the prairie where the rainfall is less than twenty inches. Trees can, however, be made to grow, and grow fast in this section, by cultivating the soil over the roots so that the tree gets all the moisture that falls. The cultivation must extend out quite a ways as the roots extend out farther than the branches.

Mulching with straw can be used instead of the cultivation. Use clean straw. Manure is apt to stimulate late growth, which keeps the tree from properly ripening up its new wood in the fall. Weeds will also start quicker in the manure.

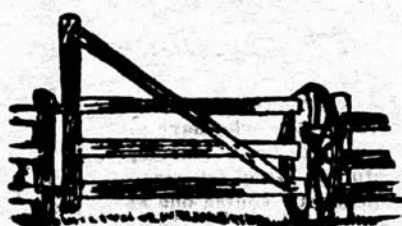
The illustration—study it. The roots have been uncovered to quite a distance yet less than half their length has been dug out. The feeding roots are the tiny new root fibers and not the big roots, which means that most of the feeding of a tree takes place at the end of the roots.

The secret of tree growing on the prairie is giving the tree all the moisture that falls over its roots and the way to do it is to keep grass and weeds from growing over the tree roots, which can be done by cultivating or mulching.

NEBRASKA GATE ON WHEELS.

Prize Device).

Mr. Editor: I have a very useful farm gate which differs from the ordinary gate in that there is a buggy wheel attached, on which the end of the gate rests. This wheel makes the gate much easier to open and close. A



Fine for a heavy gate.

single bar or latch can be run through the spokes of the wheel, from the end post of the gate to the end post of the fence, to hold the gate shut.—Helmer B. Hegberg, in Nebraska Farm Journal.

Ration For Growing Pigs.

A good ration might be made by using two parts by weight of corn and one part each of ground rye, ground oats and oilmeal. For little pigs the oats should be ground fine enough so that the hull is reduced to meal. If this cannot be done it would be better to sift the hulls out for a time after weaning. All of the ground feeds would be better if they could be ground fine. The pigs should not be fed as much of this mixture as they will eat, but should be fed rather limited quantities up to five or six months of age. After six months of age, if the pigs are to be fed for market, the oilmeal might be omitted.

The Profitable Dairy Cow.

Don't allow that old reprobate of a cow to fool you by giving a profuse flow of milk for five or six months, then going dry. It's the cow that gives a reasonable amount of milk from seven to nine months in the year that you can safely bank on as a profitable member of your dairy herd.

Moisture With Continuous Cropping.

L. R. Waldron, Superintendent Dickinson Sub-Station.

In accompanying cut is shown the moisture content, foot by foot, to a depth of ten feet on the spring plowed corn and wheat plats, A. Plat A of the wheat shows great deficiency in moisture, compared with Plat A of the corn, and this deficiency increased with the depth, until at the tenth foot the corn plat contains 9 per cent more moisture than the wheat plat. The chart plainly shows that the growing of corn every year has allowed the water to penetrate to a depth of ten feet, and, judging from the appearance of the curve, at least five feet more. In the case of the wheat plat, no moisture has been lost by percolation beyond the reach of the roots, while in the corn plat, water has been lost in this manner; how much, cannot be told.

The amount of water used by the corn crops for the four years of growth, plus the amount found in the soil indicated by the chart, equals

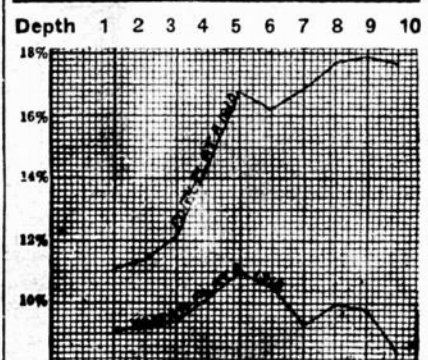


FIG. 3—Shows relative per cents of moisture for each foot to a depth of ten feet as determined in the fall of 1910 upon Plats A, continuous crop, spring plowing, for the two crops, wheat and corn.

about forty-one inches. The amount used by the growing wheat crops grown upon the plats, plus that found in the soil shown on the chart, amounts to forty-six inches. As the rainfall since the land was broken amounts to about eighty inches, it is seen that the loss of water amounts to from 55 to 60 per cent. The loss has been greater in the case of the corn plats than in the wheat plats. The extra loss incurred in the corn plat is evidently due to the sinking of the waters to a depth greater than ten feet. The loss of some forty-four inches of water from the wheat plat may be accounted for by the natural run-off, by evaporation at other times than during the growing season, by drifting snow that did not find lodgment upon the plat, by light showers that evaporated without having produced effect upon growth, and by other possible causes.

LOCATION OF THE ORCHARD

Selection of Site a Most Important Matter.

Since the atmospheric conditions are largely influenced by the contour of a country, the selection of a site is an important matter. In level stretches like the Red River valley, there is little opportunity for choice, but in rolling sections one may discriminate. By observing the spots that the native trees and shrubbery select, one may come to a very easy and correct solution of this point. Even in the arid portion of the state thrifty shrubs will be found growing toward the bottom of the north side of the hills and buttes. It is not well to plant too low down on the hill-sides for the cold air settles there, increasing the danger from late frosts. Too near the top of the slope the soil is often dry and thin and the exposure needlessly great.

A little intelligent study of the land will enable one to select a site having some protection, good atmosphere drainage and the proper soil. South slopes are too dry, the sun is too hot there and the drying process altogether too active. They should be avoided.

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