PRESS BULLETIN No. 53---April 1910

The Agricultural Experiment Station
FORT COLLINS, COLORADO

Hints to Plains Settlers

WINDMILL IRRIGATION

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While it is possible to produce much garden truck and raise some trees without irrigation, there is still a great field for windmill irrigation in helping out during periods of drought. This will increase the yield of many products, and make possible the growing of some favorite fruits, ornamental trees, and vegetables which succeed but poorly without irrigation.

Fruits and vegetables which succeed at all without irrigation are those making their crops during the season of the year when rainfall is usually abundant. Thus, the plants which make their yields before July 15th have a much better chance for success than those maturing after July 15th. Of the fruits, cherries, plums and gooseberries usually bear good crops without irrigation, but they would be helped by an irrigation occasionally when the rain does not come at the right time. But apples, peaches, apricots, grapes, strawberries, blackberries and raspberries so often need water when no rain falls that there is seldom a year that those fruits do not need one or more irrigations in order to produce fruit. The trees and vines may be grown without irrigation, but when they begin bearing they occasionally need extra water. Small fruit, generally, will do better if given extra water occasionally.

The beginner is likely to plan to irrigate much more land than his mill can furnish water for. So, one should begin by watering a few square rods, and the area can be extended as experience is gained. Those who have been most successful with windmill irrigation have irrigated about one-tenth of an acre the first year, and have added to their gardens as they were able to water larger areas.

A reservoir of some kind is necessary, as water directly from the well is so cold that it chills the roots of plants and thus retards growth. Also, by using a reservoir, water from a weak well may be accumulated so that some irrigating can be done; while without the reservoir practically nothing can be watered. The reservoir can be filled while the wind is blowing and the water will then be ready for use. At the times when plants are most likely to need watering, the wind may not blow. At such times the reservoir will prove its value.

The reservoir may be built of earth, concrete, wood or stone, according to the pleasure of the owner. The bottom of the reservoir should be higher than the highest point on the land to be watered. The bottom should be puddled. If on sandy land, a few loads of clay from a lagoon should be thrown into the reservoir and tramped thoroughly when wet.

The irrigated garden should include all the vegetables which are needed by the family. A small area planted to each, and well cared for, will produce abundantly.

Joining the vegetable garden should be a space planted to small fruit and to a well-selected orchard of standard plum, cherry, pear and apple trees.

The small fruit should consist of strawberries, gooseberries, dewberries, currants, Juneberries and raspberries. The currants should be planted in a sheltered place, and raspberries, dewberries and strawberries should be given winter protection.

A dozen each of apples, plums and cherries should be planted where they can be watered occasionally after they are old enough to begin bearing fruit. A few pears and peaches should be planted.

Early Richmond, Montmorency and English Morello cherry trees should be planted. Weaver and Minor plums have proved best at Cheyenne Wells. The apple trees should include 2 Duchess of Oldenberg, 2 Wealthy, 2 Jonathan, 2 Missouri Pippin, 2 Jenitons and 2 Winesaps. These trees may be watered economically, if water is scarce, by boring a few holes with a post-auger about each tree and occasionally filling these holes with water. During some years one thorough watering during winter and one during the summer will be sufficient to keep these trees in good condition.

Thorough cultivation should be practiced in connection with irrigation, as cultivation will largely take the place of irrigation. Each irrigation should be followed by cultivation as soon as the soil is dry enough to work. Apply the water by running it in small furrows made close to the plants. Sometimes these furrows may be filled as soon as the water has disappeared. This will prevent unnecessary evaporation.

Such an irrigated garden will often be worth as much, for producing food for the family, as many acres of land farmed without irrigation.