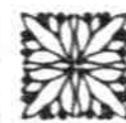


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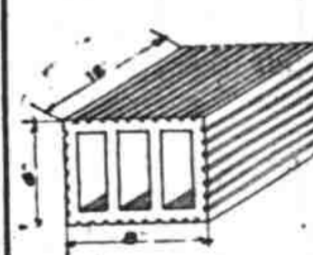
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## IRRIGATION IN WILLAMETTE VALLEY NOW ON FIVE TO SIX THOUSAND ACRES

The Subject as Treated by W. L. Powers, the Chief of Soils at the Oregon Agricultural College Experiment Station—Half a Million Acres in the Willamette Valley on Which Crops May Be Increased by Irrigation from 50 to 75 Per Cent—Growing Interest in the Subject of Irrigation.

This week's number of the Pacific Homestead, the farm paper issued from the Statesman building, contains the most instructive article on irrigation, giving the results of work and experiments that have been and are being carried on at the Oregon Agricultural college. The article deserves the careful reading of and preservation by every person interested in the progress of this whole section. The article is as follows:

Supplemental irrigation for intensive and late season crops is proving profitable on some five to six thousand acres of Willamette valley lands, according to investigations conducted by W. L. Powers, chief of soils at the state agricultural college experiment station. It is further ascertained from these investigations that there are approximately a half million acres—20 per cent of the entire area of the valley exclusive of forests—of free-working soils of the valley in which irrigation may be made to increase crop yield from 50 to 75 per cent. On some sandy river bottom lands of the valley the increase amounts to 100 per cent or more.

A meeting of valley farmers interested in irrigation development was held at the college Saturday, September 9, to study the present status and outlook for irrigation, and examine the station irrigation plots and system of farming made to increase yield and profits by experimental application of water. A number of these farmers are now practicing irrigation with success or planning to install irrigation systems as soon as possible. Some of them likewise are taking out individual water rights for irrigation.

Increased interest in irrigation has been shown in the valley due to the extended dry weather this season, with the result that the formation of irrigation districts in two or three counties is being contemplated and the number of water filings by individuals has been increased.

The farmers gathered in the big agricultural building where W. L. Powers, chief in soils, explained the work of his department and showed the men through the soils laboratories where soil analysis work is done for the farmers of the state. Professor Powers told of the model pumping plant and demonstrated how the water is applied to the experimental field.

of each crop are matured, so that there is a dry-farmed plot of each crop in the rotation, a second one that is dry-farmed and manured, a third that is irrigated and rotated, and the fourth quarter receives the advantage of irrigation, rotation, and manure.

At the beginning of this experiment, the beans yielded about 12 bushels an acre. During the first pine years or three rotations the yield dropped on the continuous crop plot to about 6 bushels an acre and it was increased with irrigation, rotation and manure to about 22 bushels. The average for continuous cropping has been 9 bushels, and with irrigation, rotation and manure the yield has been built up so that the average for the period is 18 bushels a year.

The amount that has given the maximum net profit a year as a 12-year average, with meadows ranges from 6 to 12 inches, an average of about 8 inches an acre for the season. The cultivated crops have required from 3 to 6 inches an acre a season. Crops of potatoes have done best where this is applied in two irrigations of moderate amount. The annual cost is calculated at \$1 an acre an inch so that \$8 total annual investment in water has returned about two tons increase in hay, \$3 to \$5 an acre has returned an average of about 60 bushels an acre more potatoes and 5 bushels an acre more beans. A summary of these studies is given in the following table.

Crop	Yield per acre bushels or tons	Increase per acre	Irrigation	
			per acre	per ton
Potatoes	156,830	58,590	215,820	3.71
Clover	3,910	3,811	5,220	1.33
Alfalfa	4,547	4,412	8,959	1.97
Corn	6,659	6,486	13,145	1.97
Beans	12,629	12,256	24,885	1.97
Beets	10,817	10,611	21,428	1.97
Kale	433	433	866	1.97

The water requirement of the crop giving the most net profit an acre, as an average of all seasons, has been 5-13 inches per ton alfalfa and 3 inches per 100 bushels potatoes. This represents the crop producing power of water.

## IRRIGATION IS NEEDED IN SALEM DISTRICT (Continued from page 2)

watering, it should never become waterlogged and sour. Needed Every Summer There has been perhaps no summer since the white man came to Oregon that a little water at the needed time, in June or July, would not have been helpful to crops; there have been many years when it would have made the difference between prosperity and ruin. The crops on many farms this year have been absolute ruin; this was not much more true in this Santiam section than in some others, but the great difference is that the Santiam district has the water within reach, so easy to apply.

Gravelly Soil Ideal The gravelly soil is ideal for irrigation in that it "subs" or sub-irrigates by capillarity, for considerable distances on either side of any water supply. On the Bowne farm, an eight-acre field of potatoes that now looks like 200 sacks to the acre—three or four ten times the probable yield of many fields in the county—water was run slowly down the dead-furrows; the head ditch was at the side of the field, the next water furrow was 32 feet away, and the next furrow was 82 feet away—or 62 feet between the last two irrigating furrows. Yet the soil has taken this water and made the whole field of almost equal value. Some soils need watering every few feet, or even inches; this Santiam soil does not. It reduces the irrigation labor to a merely nominal job, and of course reduces the cost of watering to almost nothing.

Some Doubters Left There are men in the Santiam country who, looking out over their barren fields, still say "irrigation won't pay! Don't we get enough water here? I'll tell you what's the matter—" and they will rave of railroads, of tariffs, of foreign competition, of chinch bugs and coluges and labor unions and octopuses of a thousand kinds—and their own fields are burned to a cinder for the lack of water that their community cooperation could get to every thirsty acre. They are honest men—but if they would only learn! Their wives and their children would wear better clothes and have more and better books and have homes of comfort, and the farmers themselves would soon be independent and happy instead of as now. Prosperity is good morals; poverty, at least ignorant, willful poverty, is immoral in the highest degree. Marion county might be the most moral county in the world—with irrigation!

Tons of Beans When the Salem King's Products company contracted last spring for 300 acres of string beans, here is what happened: many of the beans never had a drop of rain from the day of planting until the rain came in August. The yield has been so light that some fields have been picked. But a two-acre field of Kentucky Wonder beans only a stone's throw from the Stayton cannery, belonging to C. A. Newmeyer, under the Willamette Valley Irrigation company ditch, has already produced and sold 3360 pounds of irrigated beans, and the crop was half finished when these figures were given. That would be at the rate of more than four tons to the acre. And the irrigation was not well done; the fields were flooded by a fierce current that almost tore up the plants by the roots, instead of gently soaking through the ground as it should do. This field of two acres will probably pay as much profit as any other 25 acres of the King's contractors; it may indeed pay more actual profit than their whole planting, for many acres have been a dead loss. Irrigation paid G. A. Newmeyer!

Some valley farmers who have made successful use of irrigation for 10 years or more and still continue it are the following: Zina Wood, Judge George Bagley and Hutimen brothers, intensive dairy farmers of the Hillsboro district; R. B. Chase & Son, greenhouse and outdoor vegetable growing; Eugene; Frank Huson, intensive trucking, North Albany; Cummings ranch, trucking, Canby.

Some particularly promising districts for immediate irrigation development are listed by Professor Powers as follows: Several thousand acres of nice free working soil in the first and second bottoms along the Willamette north of Eugene can be irrigated, and will be suitable for small fruit, truck and very intensive forms of agriculture when reclaimed and improved. There are also other acres of free land near the Santiam river in Marion county and along Dairy creek in Washington county; also some lands of less sandy texture but suitable for intensive crops with supplemental irrigation. Perhaps the largest field for development here is in connection with the use of small individual pumping plants, and it is possible by proper irrigation to double the yield of about one-sixth of the soils in the valley, being the naturally drained free working soil areas that are not too heavy on the one hand or too sieve-like on the other. The enterprise is delayed partly due to lack of knowledge of the value of irrigation or skill in its use. However, there are here opportunities for irrigation farming in a region where there is a long growing season with good transportation facilities at hand, and a healthful settled section free from hardships of pioneering in a raw, arid section.

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The Important Fact This, however, is a mere detail of expediency. The central fact is that getting water to the land when it is needed; supplying the efficiency during the growing season, from the mountain waters that fall during the non-usable part of the year. It is a calamity that these two local projects, that could have been of such inestimable value during this past disastrous season, were in litigation, and that they watered only a score of acres where they should have watered 25,000. Some of the upper project, the Santiam unit as it is known, is not held in the courts, though it is unfortunately linked with the bigger project in a financial kinship that has held it back. But it has recently passed into the control of J. T. Sullivan, a pioneer Oregon irrigator who has done some splendid development work in the Rogue River country, and whose knowledge and standing on irrigation matters promises to bring the matter through. Mr. Sullivan is now offering water to the landowners of this upper Santiam unit of 6940 acres, at \$50 an acre and expects to have the contracts completed and water delivered for the season of 1923.

If every acre of the 6,940 acres under this project were to produce like the Bowne logans, a little more than \$300 an acre, it would mean \$2,000,000 worth of crops a year in that one little spot! This is too much to expect, perhaps; and yet many a crop would beat this record to death. It would take 20, or 50, crops like those on much of this ground this year, to make as much money, or even as much total yield, as the Bowne irrigation lands, or the Newmeyer beans. Let's irrigate!

THE FARMER'S JOB IS A GROWING ONE Has to Furnish Food for Nearly Three Other Families Besides His Own Recent statistics sent out by the census authorities show that the farm population of the United States is only 31,614,269, a little less than 30 per cent of the total. This includes farm operators and farm laborers and their families, who live in the country, and shows an average of about five persons to each farm. About half the people in the nation are classified as rural—that is, they live in the country—or in towns having fewer than 25,000 inhabitants, but only 61 per cent of the "rurals" are actually engaged in farming. Thus 39 per cent of the rural population and the entire city population must be fed by the men engaged in agriculture. It gives the farmer a big job. Only a few years ago each farmer had to provision his own family and one other family—now he must furnish food for nearly three other families besides his own. His occupation should not fail.—Farm Life.

THE CANNIBAL CHICK Every once in awhile we hear of chicks picking a wounded specimen to death, which soon finds expression in picking the toes of each other; all of which is bad. A remedy said to be efficacious is to purchase a bottle of pine tar at the drug store and apply it to

the blood stains of the victim's anatomy, even to the soiled feathers; then turn the bird loose among his fellows. The pungent odor of the tar will turn them away, and there need be no more trouble. The tar is healing, which is to the benefit of the injured bird, and at the same time harmless to the uninjured.

At Small Cost There are thousands, perhaps hundreds of thousands of acres in the Willamette valley that could be watered at small cost. The price set upon the Stayton project is \$50 an acre, for a perpetual water right; the annual maintenance charge might run to about \$1 an acre, a year, for the first few years, and almost certainly less as the system got thoroughly settled and organized. This is a low cost, both for the initial installation and for the maintenance; and the results promise to pay an enormous interest on the investment. There are water courses up in the Cascades, that will give a perpetual water supply for every acre that looked profitable to irrigate in the valley. Lands adjoining the Willamette river, might be more profitably watered by pumping, where the water needs to be raised only a few feet, and the saving of land for canals would almost pay the difference in the cost operation between a gravity and a local pumping system.

Drainage and Irrigation Some land owners have said, "If you'd talk drainage, we'd be for it." Drainage is indeed important, and in some of the low, sluggish parts of the Willamette valley it might be the first consideration. But where the ground dries up into a glaring desert

the farmer's job is a growing one. Has to furnish food for nearly three other families besides his own. Recent statistics sent out by the census authorities show that the farm population of the United States is only 31,614,269, a little less than 30 per cent of the total. This includes farm operators and farm laborers and their families, who live in the country, and shows an average of about five persons to each farm. About half the people in the nation are classified as rural—that is, they live in the country—or in towns having fewer than 25,000 inhabitants, but only 61 per cent of the "rurals" are actually engaged in farming. Thus 39 per cent of the rural population and the entire city population must be fed by the men engaged in agriculture. It gives the farmer a big job. Only a few years ago each farmer had to provision his own family and one other family—now he must furnish food for nearly three other families besides his own. His occupation should not fail.—Farm Life.

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