# Irrigation in Willamette Valley By Prof. W. L. Powers.

the Oregon Agricultural College. In the following article Professor W. L. Powers shows how this 0 is true.

(Special to the Farm Magazine.)

F ROM experiments and observations made by the Oregon Agricultural

College it appears that proper irrigation in the Willamette Valley will provide a more favorable moisture content of the soil, and will aso aid in the liberation of plant food and in its solution and conveyance to the plants. Likewise it will increase the bacterial activity of the soil and lead to a great- gation as shown by these tests are not er root and top development of the plant. Furthermore, extra root development of the plant will tend to offset was shown among other things that growers and shippers of the Northany running together of the soil due to irrigation is associated with a tempoirrigation.

Irrigation farming tends to remove due to reversed capillary movement. larger crops from the land and consesome other soil building crop on the surface. land every few years, in irrigation also more necessary that irrigated much as 4 degrees of soils in cultivated the request is unanimous fields be plowed up deeply at frequent plats and as much as 10 degrees in intervals to maintain a good state of meadow plats. tilth.

### Crop Rotation.

Crop rotations in irrigation farmeach year, since cultivated crops rerotation of soil-building crops together causing better shaped ears and a hightains the water holding capacity and germination of beans. fertility of soils, thereby lowering the water cost of dry matter.

be used without making the soils too causing more beans in proportion to at a temporary reduced rate than they open where irrigation is practiced. A plant, more beet in proportion to top, could at their regular rates. This cer kept in a higher state of productivity top produced. Irrigation has also by the use of rotation including caused a slight change in the chemical legumes and the use of manure, in con- composition of the products. nection with proper irrigation.

development in connection with in- years varies with the character of the tensive cultural methods. It will become crops grown. The soils show a slight of increasing importance in Western tendency to decrease in water capacity Oregon on all free working soils in and increase in volume weight with connection with intensive dairying, hop irrigation where rank feeding crops production and truck farming.

### Moisture Points.

field conditions has several important decided increase in organic content moisture points. It will be recalled in where leguminous crops were grown. this connection that water in the soils This comparison was made with soils has three distinct aspects-free, capil- upon which legumes were grown withlary and hygroscopic. The free moisture out irrigation appears as water and moves chiefly by Pr gravity. The capillary water moves Irrigation had but little appreciable

Proper irrigation may be of . the soil is clearly seen, the water itself der proper management there is a good year. great value to farmers in the . is not visible. The hygroscopic water profit in irrigation in all cases where Willamette Valley, according to 🛞 clings to the soil particles and is prac- the water can be supplied by pumping tically stationary with the soil. Of the or otherwise at a cost of not to exvalley silt loams the maximum capillary ceed \$1 per acre-inch for all the water water content is about 34 per cent, the used. Properly managed irrigation pracmaximum amount proper for cultivation tiee taken in connection with the free- is 27 per cent, the optimum water con- working soils will give the farmers of
duction is about 23 per cent, the the moisture content of their soils as drought point about 14 per cent, and will not only increase the volume of the minimum moisture content is about the crop, but will likewise increase the 11 per cent. Irrigation during a seven profits and improve the tilth and feryears' test gave a higher seasonal mois- tility of their soils. ture content, which was associated with higher yields of nine standard Willam-

# Interesting and Important.

ette Valley crops.

Some of the incidental effects of irrionly interesting but highly important rary loss of moisture in the sub-soils

The highest seasonal moisture conquently larger amounts of fertilizer in tent in irrigated plants was obtained the way of refuse must be returned to in connection with early spring plow- keting cost of apples this year. the land if its fertility is to be main- ing, manuring, crop rotations including tained. It is more important to prac- legumes, and frequent cultivation, tice a careful rotation of crops that thereby maintaining a crumb soil will permit the growing of clover or mulch 21 to 3 inches in depth over the

## Effect on Market.

The effect of continued irrigation Irrigation farming finds its highest upon the soil for several successive were grown, but to be improved in these respects where soil building erops Willamette Valley silt loam under were grown. Irrigation has caused a

# Profit Possible.

effect upon the acidity of soils and | it is believed, it will mean the saving ing plant.

REQUESTED emergency rate of A 10 cents reduction to all points East, asked for by the Northto the irrigation farmer as well. It western Fruit Exchange in behalf of west, has brought to the surface an al most universal plea. All of the rail roads in the Northwest carrying fruit were addressed in a memorial setting forth the need for alleviation of mar-

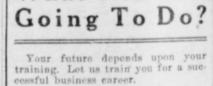
**Emergency Rate** 

Business men generally and news papers have added to the strong arguments as given by the Exchange with A Select Non-Sectarian Boarding and Day a comprehensive analysis of conditions School for Boys. Military Discipline; Email as they see them. Growers and ship-Irrigation likewise caused a lowering pers are endorsing the request on every farming that in other methods. It is of the temperature to the extent of as hand so that it may well be said that

It is the belief that the railroads will decide to do everything in their Aside from these and other inciden- power to aid the grower in the face tal features irrigation is shown to have of this year's conditions which are accomplished its main purpose by pro- represented by an immense crop over ing should provide for the growing of ducing an increase in the crop yields, the entire country and the closing of a good proportion of cultivated crops During the seven years the average in- dependable exports. The railroads are crease of all crops has been 65 per cent. vitally interested in the marketing of quire less water and use it later in the It altered the shape and size of the the crop. It has been pointed out that season than do the meadow crops. A plants and affected the seed products, aid from this source will allow the grower to place upon the market unwith the application of manure main. er germination of corn with a lower doubtedly a much larger percentage of and it is possible to figure out that ELITE PRIVATE Irrigation has likewise altered the the railroads will be able to make

free working soil can be built up and but fewer potatoes in proportion to the tainly will be so in the long run if, as

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on the content of available plant food, of many ranches of well producing although it assisted in the solution of orchards from the creditors' hands. The available plant food and in its trans- Northwestern Fruit Exchange reports mission to the proper parts of the grow- that many of the railroads have replied to their request in a way to indi-with another, and while its effect on and observations have shown that un- the situation facing the industry this



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