ABOUT IRRIGATION IN THE GREAT WILLAMETTE VALLEY

Address of John H. Lewis, State Engineer, Before the Students of the Oregon Agricultural College at Corvallis.

Actual construction work is now in progress on the first irrigation project of any magnitude to be undertaken in the Willamette Valley, at West Stayton, and the day is not far distant when each stream which enters this valley will be diverted for irrigation purposes.

That irrigation is necessary and will pay has been demonstrated beyond any possibility of doubt. And the fear that the soil will bake and refuse to yield readily under the new treatment is rapidly disappearing.

There is approximately 8,000,000 acres in the Willamette Valley watershed, and 3,000,000 acres in the floor of the valley, including adjacent low foothills. To say that 1,000,000 acres in this valley will be under irrigation in the next twenty years is not an extravagant statement. The project under construction contemplates the irrigation of 20,000 acres in Marion county, and there are five other projects in contemplation which will be undertaken if the first attempt is successful. Knowing many of the men behind this first enterprise, and being acquainted with the lands, I have no fear as to a successful outcome.

The Willamette Valley is better supplied with water for irrigation purposes than any other valley in Oregon, and there are practically no natural obstacles to overcome in the diversion of this water. Where storage is not required, land favorably situated should be irrigated at a cost ranging from $15. to $25. per acre or, with storage, from $5 to $10 in addition.

It will not be necessary for the farmer to await the construction of a large project to supply water by gravity flow, for it is believed that an abundance of water can be had by sinking a bored well to an underground water stratum which has been tapped in places ranging from 100 to 150 feet below the surface. This water is said to be under sufficient pressure to bring it within ten to twenty-five feet of the surface.

Drainage in some districts should go hand in hand with irrigation. The quick removal of excessive spring moisture would prevent waterlogging of the ground and increase by several weeks the length of the growing season. In other districts the drainage through the porous gravelly subsoil is so perfect that the lands are considered of but little value under present conditions. These lands, when irrigated, will become the most valuable.

For many years grain growing has been the leading industry of the valley, all of which is in private ownership. The average farm is probably 320 acres in extent, the tendency being to increase, rather than decrease such area, because of the diminished yield due to constant cropping. Diversified farming has been urged of late as a remedy, but this is possibly only on selected lands which are retentive of moisture, or those which moisture through subirrigation. It is not contended that irrigation is necessary for all crops, for deep rooted plants, such as orchards, are not effected by the long, dry summer. But for truck garden, alfalfa, clover, small fruits and vegetables, irrigation in reasonable quantities is absolutely necessary for the highest yield.

Dairying is destined to become the leading industry, because of the mild open winters. The most serious obstacle, however, is the long dry summer, when it is necessary to carry the herd on dry feed, the same as during the winter months in the East. This condition, however, can easily be remedied through the artificial application of water. It has been conclusively proved that three full crops of clover, together with fall pasture, can be produced with irrigation, where only one crop, with pasture, is available under present conditions. Also, four crops of alfalfa, with pasture, can likewise be produced.

Less than 7% of the total precipitation in the Willamette Valley falls during the summer months.

During this same period in an irrigated country the equivalent of the entire annual precipitation is applied to the growing crops. It may be surprising to know that the summer precipitation at Denver, Colorado, is 4.4 inches; at Cheyenne, Wyoming, 5 inches, and at Santa Fe, New Mexico, 6.2 inches, as compared with 2.25 inches at Eugene. The summer conditions, therefore, are more arid in the Willamette Valley than in these arid states. During the spring seed-germinating period, which is the most deficient period for the irrigator, nature supplies and distributes the moisture. At Milan, Italy, where irrigation has reached a high state of development and has been practiced for many years, the summer precipitation is 10.2 inches, as compared with 2.6 inches at Eugene. It is believed that these comparisons conclusively demonstrate a deficiency of summer precipitation.

That irrigation pays appears to be demonstrated by the figures published in the Oregon Countryman, by W. L. Powers of this institution, (O. A. C.) These figures are from careful experiments, the water being furnished by gasoline engine pumping from underground sources, the lift being about 20 feet.

From four cuttings of irrigated alfalfa 17 tons of green feed were secured per acre, as compared with 5 tons from two cuttings on unirrigated land, or a gain of 12 tons per acre due to irrigation. The increase of yield in this case was 240%. Less than one acre foot of water (1.42 ac. in.) was applied to produce this remarkable result at a total annual cost of $10.83 per acre. At an average price of $4.00 per ton for such feed, the net profit due to irrigation would amount to $37 per acre, or 342% on the money actually invested to secure such increased yield. If this water had been applied by gravity canal at a first cost of $25 per acre, the actual profit in this case would amount to 858% of the money invested, including 6% on first cost, maintenance at $1 per acre, and distribution of water estimated $2.50 per acre.

From three cuttings of irrigated clover 10.2 tons were secured as compared with 4.3 tons from two cuttings of unirrigated clover, or a gain of 5.9 tons. This is an increase of 133% due to the application of 9.9 acre inches of water at a total annual cost of $10 per acre. The clover was weighed when partly cured. At $4 per ton the net profit due to this increase of yield would amount to $13.55 per acre, or 135% of the annual cost. By gravity canal the net profit due to irrigation could be increased to $18.55 per acre, or 371 per cent of the annual cost.

By applying 5.35 acre inches of water to a potato crop, 140 bushels of potatoes were secured as compared with 60 bushels per acre from a similarly situated unirrigated field. This gain of 84 bushels per acre, or 150%, was secured at a total annual cost for irrigation of $5.56.

At 50 cents per bushel the net profit due to irrigation amounted to $36.46, or 656% of the cost of producing such results.

Accepting the above figures as a correct index as to what can be accomplished in the Willamette Valley, through irrigation, it is easy to figure how the farmer could well afford to borrow, even at 10% interest, all the money to install an irrigation system. The increase in land values would more than offset such cost. As such information accumulates and with a few successful projects constructed, it is easy to conceive such a boom in irrigated lands in the Willamette Valley that its population will be increased ten fold in the near future.

It seems to me that the commercial organizations of the state could take up no line of promotion which would yield greater returns in increased population, than by promoting the idea of irrigation in this beautiful valley. It has no greater population per square mile than many dry farming communities of the arid region. Irrigation will therefore do as much for us as it will in such communities.

With our low elevation, mild winters, long, dry growing season, convenience of rail and water transportation and accessibility to the markets of the world, I predict a most rapid development for this valley through the adoption of this new method of agriculture.

Stock salt 60c per 100 pounds; Leslie's granulated dairy salt 60c per 50 pound sack.

Music Lessons.

Stringed and Band Instruments. Leave orders at the Wave.

MILO O. ROACH.

Good Business Proposition.

For sale—a good well drilling rig on trucks, in good condition, gasoline power, 300-foot capacity, drills 3 and 4 inch holes. All tools necessary. Inquire of the Co operative Realty Co.

For sale—480 acres of land suitable for stock, sawmill, farming and fruit. It joins the Milwaukee Orchard Co A trout stream and a lot of springs on the place. Would make a fine home. 80 acres fenced, log house, barn, grainery, wagon shed, chicken house. $16 per acre. $2000. Terms on balance. S. F. Jackson, Lorane, Oregon.

ANNOUNCEMENT.

To my large stock of phonograph good, I have added a line of Victor Talking Machines and records. You are cordially invited to call at my store and hear records made by the world's greatest artists, played on the Victrola, the king of entertainers.

MARION VEATCH.

O. & S. E. R. R. Company

TIME TABLE NO. 5

To Take Effect June 19 1909

E. BOUND No. 1.			W. BOUND No. 2.
A. M.	MS.	STATIONS	A. M.
7.30		Lv. COTTAGE GROVE Ar.	12.00
7.50	3.8	WALDEN	11.25
7.59	6.7	CERRO GORDO	11.16
8.14	8.6	DORENA	11.48
8.40	12.5	STAR	10.40
8.50	13.8	WICKS	10.33
9.05	15.9	RED BRIDGE	10.28
9.18	16.6	WILDWOOD	10.15
9.45	20	Ar. DISSTON Lv.	10.00

Subject to change without notice.

All outward freight shipped only at the joint risk of shippers and consignee.

Stage leaves Disston after arrival of train on Monday, Wednesday and Friday for Orseco, returning on Tuesday, Thursday and Saturday.

Freight will not be received at the O. & S. E. R. R. Depot after 5 p. m. To insure forwarding on next train freight must be delivered in ample time to permit of its being billed.

A. B. WOOD, Manager

S. P. Ry. Time Table

NORTH BOUND.

No. 16 ..... 1:48 a. m.
No. 20 ..... 3.56 p. m.
No. 18 ..... 11:02 a. m.

SOUTH BOUND.

No. 15 ..... 1:26 a. m.
No. 17 ..... 10:27 p. m.
No. 13 ..... 6:42 a. m.
No. 19 ..... 3:02 p. m.

G. F. King, Agent,
Cottage Grove, Oregon.

AN EXPERT CORN GROWER AND HIS GRAND TROPHY

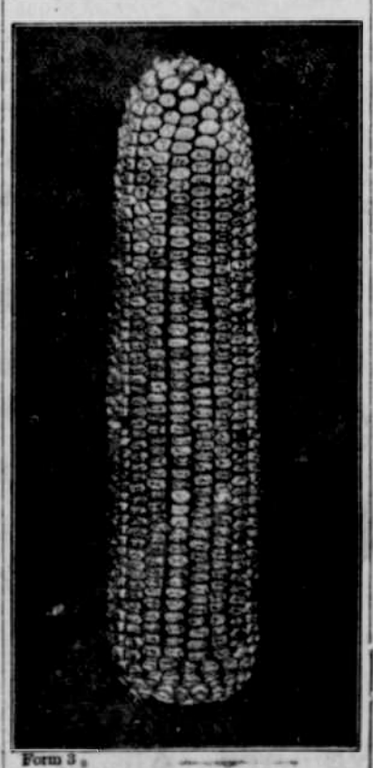
The 1910 Winner of the $1,000 Cup---Grows Best Ear in the 3,125,713,600 Bushel Corn Product for the 1910 Season

R. A. James, of Charleston, Ill., has the proud distinction of having grown the best ear of corn in all the 3,125,713,600 bushels of last year's bumper crop. At the National Corn Show held at Columbus, Ohio, last fall this gentleman was awarded the W. K. Kellogg National Corn Trophy, donated in 1909 by W. K. Kellogg, president of the Kellogg Toasted Corn Flake Co. of Battle Creek, Mich.

Thousands of ears of corn from all parts of the country and of all varities were entered in the competition. The selection of the grand champion Sweepstakes and the award of the Kellogg trophy were made on general points of superiority.

Form 4
R. A. James, Winner of W. K. Kellogg Trophy, with the Trophy and the 1910 Champion Ear.

The ear of corn grown by Mr. James is of Reid's Yellow Dent variety. It is 10 inches long, 7½ inches in circumference, and has 20 rows of kernels, 6 to the inch in the row, average ⅝ of an inch in depth, and 5-16 of an inch in width. It is indeed a very correct type of yellow dent corn.



Form 3
World's Best Ear of Corn for 1910

Mr. James the winner, is a vigorous farmer about 40 years of age and of pleasing personality, a man who has given careful study to corn culture, and who has achieved his success as a grand champion winner only by years of hard work and painstaking seed selection and careful breeding from season to season.

Illinois growers are especially elated over the result for the reason that this is the first time in four years that the honors have been wrested from the state of Indiana. First year's champion ear, the first winner of the Kellogg trophy, was grown by Mr. Fred C. Palin, of Newton, Ind. It was also of Reid's Yellow Dent variety, crossed with Alexander Gold Standard. Last year's prize winner is the most perfectly formed ear of the two, though it requires a careful judge to distinguish the points of superiority.

The trophy awarded to Mr. James was made by Tiffany, of New York, for Mr. W. K. Kellogg at a cost of $1,000. It is made of Sterling silver, bronze and enamels, and is a truly artistic creation.

It stands 30 inches in height. Mr. Kellogg's interest in corn growing can be understood when Toasted Corn Flake Co., of which he is president, has an output requiring 10,000 bushels of corn a day, raw product, for its manufacture. A peculiar feature is that while the Kellogg product is made exclusively from selected white corn, the Kellogg trophy has been won each time by a yellow corn exhibit. The trophy is offered for annual competition until won twice by the same grower.

The National Corn Show at which the award was made, was an event of tremendous magnitude. At one of the sessions President Taft was present and delivered an address.

Ten Per Cent Money.

I have two good houses in the prettiest location in Cottage Grove, now paying 10 per cent on the investment, and I offer them on that margin and will guarantee them to pay 10 per cent. Who wants to make some easy money? The property is worth nearly double what I will ask for it.

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D. A. Hendricks, Mgr.
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Piano coupons at the Leader office. Every subscription payment or order for job printing entitles you to tickets on Metcalf & Brunds piano at the Leader office.