

Salem is the Market and Manufacturing Center of a Great Potato Industry Which Ought to Be Several Times as Large

AMILLIONDOLLAR POTATO ARTICLE FOR THE FARMERS OF THIS STATE

Yes; More Than a Million Dollar Article; It Would Be Worth Millions If All of Our Farmers Would Read It and Profit by the Advice Which It Contains—Five Rules That Are Essential for the Best Results

Editor Statesman:

Your request for the potato article came just as I was leaving the college for an eastern Oregon trip. I am writing this from Pendleton and attach article, which I trust will reach you in time.

I am very grateful to you for this opportunity to make this wider presentation of this matter, and should you have other crop topics, such as beans, sunflower silage, corn, grain grades and similar subjects, I shall be glad to render any assistance that I can.

—Geo. R. Hyslop, Prof. of Farm Cops.

(Following is the article of Prof. Hyslop—and the writer believes that if it could be placed in the hands of every Oregon farmer, and if every Oregon farmer would follow its precepts to the letter, it would be worth MILLIONS OF DOLLARS to this state.)

Why is the average yield of Oregon potatoes only a little over 100 bushels an acre?

Why do so many people object to the potatoes grown in the state?

Why is it hard to get good seed potatoes in many districts?

These are live questions in Marion county and in the Willamette valley, and there is a solution for them.

The low yields are due to two things: (1) poor stands; (2) low yields from the hill because of poor seed.

Plant potatoes in rows 3 1/2 feet apart and 1 1/2 feet apart in the row and it makes a stand of nearly 11,000 plants an acre. On this basis hills weighing the amounts given below will yield the return in the right hand column:

Weight of Hill.	Yield an Acre
10.9 oz	120 bu
1 pound	175 bu
3 pound	534 bu
5 pound	890 bu

*Remarks: Better than our 4-year average, 1916-19.

In other words, two potatoes of small market size is the average hill if we get a stand. Two good market potatoes or one pound give us what we consider a good crop. Three lbs. per hill represent a bumper crop, yet the writer has seen 15 pound hills, and THERE IS A RECORDED YIELD IN SCOTLAND OF MORE THAN 2000 BUSHELS AN ACRE.

Do our potato hills actually average 10.9 ounces? I think they do a little better than that, but there are not 11,000 plants an acre or a full stand.

Why is there only from 50 to 85 percent of a stand in so many fields? There are several reasons. (1) Too small a seed piece; (2) diseased seed; (3) poorly prepared seed bed; (4) improper planting, especially with the "picker" types of planters when not properly adjusted and watched; (5) careless cultivation.

The small seed piece is often without an eye or at least a good strong eye, and so fails to make a strong plant. Often the small pieces dry out and do not sprout at all. Seed pieces for average soil should weigh 1 1/2 to 2 ounces and carry at least two eyes.

The blossom or seed end piece should not be split, but should be cut off from the potato so it will weigh 1 1/2 to 2 ounces and be planted

with the rest of the pieces. This unsplit blossom end piece is the best piece, and special mention is made of this since nearly every one splits it and damages it.

Some even cut off this end and discard it.

The Oregon Experiment station at Corvallis believe, as the result of experiments, that it is the highest yielding piece of the potato for seed purposes.

Diseased seed results in the early death of many plants and even in a complete failure to sprout. This makes many a thin stand.

A cloddy, dry seed bed means poor sprouting and a poor, uneven stand.

Planting is responsible for many poor stands.

Many growers get better stands with the "two-man" or "pocket" type of planter than they do with the "one-man" or "picker" planters. This is probably due to letting the points get dull or short or clogged, and to uneven seed, but nevertheless it results in rather frequent poor stands.

Some plants are cultivated out and as a result of the above losses, as well as gopher and other rodent damage, many a field arrives at harvest time with less than 70 per cent of a stand and consequently a poor yield.

Why the low yields per hill? Principally because of poor seed stock and disease. Too many people have sold away their market size stock and have fooled themselves into thinking that little potatoes sorted out of the good ones are seed.

When we want to develop a fine breed of hogs, do we sort out all the runts and off-types and scrubs and keep them for foundation stock? On you life, we do not.

We keep the ones we want the stock to be like. Therefore if we want potatoes that are big enough to sell we will have to plant some of that kind after they are cut to the right size.

Another reason for low hill yields is disease in the seed stock. Blackleg, rhizoctonia, early dwarf, mosaic and wilt all take their toll and result in unproductive plants.

Last year the Oregon Agricultural college, co-operating with the United States department of agriculture, secured a lot of the best recognized seed lots of the state and planted them under comparable conditions at the Station at Corvallis.

The yields varied from 17 to 288 bushels an acre. Some difference, and largely determined by good and poor seed stock.

Seed Inspection. To meet this situation the college proposes to inspect and certify fields pure enough and free enough from disease to make good seed.

The plan is as follows: Persons desiring this work done will make application to the College for the field inspections. The college expert will examine the fields and point out mixtures and diseased plants to the grower. If the field is good enough he will recommend to the grower that diseased plants be removed before the diseases spread to other plants or get too well established in the soil.

What does a poultryman do with a sick chicken? Usually chops off its head, and dispose of it so the rest will not contract the disease.

What does the potato grower usually do in a similar situation? He, strange to say, usually lets the disease spread and multiply.

Later inspections are completed, and if the diseases and mixtures are rogued out sufficiently and the field is nearly enough disease free, a bin inspection is made and, if satisfactory, the seed is CERTIFIED TO BE TRUE TO VARIETY and to be FREE FROM SERIOUS AMOUNTS OF DISEASE.

It may be necessary to charge a light fee to cover part of the expenses of this work, but the college hopes the financial situation will be relieved so the service can be rendered without asking growers to pay anything for it.

By following out this plan the farmer gets acquainted with the diseases and their control and eradication and so builds up disease-free stock, true to name.

When this is done we will get better stands and yields.

People will like our potatoes better for table stock.

We will be able to find good seed for Oregon growers.

We will be able to sell genuine and disease free seed to Washington, Idaho and California. AS NONE OF THEM IS PRODUCING ENOUGH FOR THEIR OWN NEEDS, and don't seem to be able to do so.

The Oregon Agricultural college will gladly undertake to inspect from 100 to 250 potato fields in Marion county, and other counties, this year, even though the field may be only half an acre. This is in order that there may be a start at least of good seed for another crop.

Certified seed will increase our yields, and put our potatoes in the market at a premium.

—Geo. R. Hyslop.

It is known that some of the organisms producing disease in potatoes remain alive in the soil for at least three years, even though no potatoes are grown on the land during that time. Consequently it becomes necessary to practice longer rotations than this in order that the organisms may die out of the soil before potatoes are again planted on such land. It is therefore best that potatoes be not grown on the same land oftener than once every four or five years, the ground in the meantime being planted to other crops not affected by the potato parasites.

"Seed selection.—Seed selection should be practiced for three purposes: namely, increase in yield, greater uniformity in size and shape of tubers, and greater freedom from disease.

"Seed disinfection.—Due to the fact that a number of skin diseases, such as scab, Rhizoctonia or black scurf, etc., are so often present on the potatoes in this state, it is desirable that all potatoes, whether they show evidences of diseases or not, be treated by a disinfecting solution before they are planted.

"Spraying.—In order to control certain of the leaf diseases such as late blight or early blight, spraying of the potato plant must frequently be resorted to.

"Storage conditions.—(The circular of Professor McKay on this subject is printed in full in this issue.)

GOOD CARE IS THE PRICE PAID FOR GOOD POTATOES

There Must Be Rotation, Seed Selection, Seed Disinfection, Spraying and Proper Storage Conditions, in Order to Insure the Best Results

M. B. McKay, assistant plant pathologist, is the author of Extension Bulletin 186 of the Oregon Agricultural college, on "Control of Potato Diseases in Oregon." This bulletin is too long to copy here; but the following are some of its high lights:

"Potato growing is an important industry of Oregon and is generally a profitable one.

"This comparatively rapid increase in the number of diseases affecting potatoes is due in part to the continuous culture of potatoes on the same land for a period of several years.

"It is fortunate that practically all the diseases attacking the potato can be successfully controlled by comparatively simple and inexpensive measures.

"It should be borne in mind that control of these diseases depends entirely on prevention and on cure.

"There are five important factors to be considered in the prevention and control of potato diseases; namely, rotation, seed selection, seed disinfection, spraying, and improvement of storage conditions.

"Rotation.—Inasmuch as a number of the organisms which cause disease of the potato live for part of the time in the old tops and other refuse left in the soil after harvest, the practice of rotation is imperative where these diseases are present and a disease-free product is desired. Not all fields grown continuously in potatoes for several years develop disease to a serious extent, because the seed used may have been free from disease, but such cases are very rare. In every section of the United States, and of the world, in fact, where potatoes have been grown continuously or very frequently on the same pieces of ground over a considerable area of several

years, the result has always been the same; namely that the disease became so severe that profitable yields could no longer be secured and large acreages had to be abandoned for potato culture. As concrete examples of this, we may mention the San Joaquin valley of California and the Greeley district of Colorado.

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I use the potato fork; it costs a little more to dig, but somewhat less to pick up.

As to yield, from 125 to 250 bushels per acre for market and from 25 to 40 bushel of culls, according to seasons.

My average crop is probably 175 bushels per acre for market.

The culls make a splendid feed for livestock.

The least I received a bushel, 24 cents for 1912 crop; highest, 1915 crop, from 3 1/2 to 4 1/2 cents per pound, selling in small lots.

Before the war good money could be made at 40 cents a bushel; with present prices of labor, etc., 60 to 70 cents brings in better net returns than grain crops, besides leaving the ground in splendid shape for wheat.

Most of the work can be done at a time when the other farm work is not rushing. As to cost, I place it at \$67.95 per acre.

Three plowings, per acre \$9.00
Two discings, per acre 1.63
Six harrowings, per acre 3.00
Twice with spring tooth, per acre 1.70
One old mash or rolling, per acre .50
Four cultivations, per acre 4.00
Planting (a boy can plant two acres a day) per acre 2.50
Seven bushel of seed at market price 3/4 a pound, per acre 14.10
Plowing once, per acre 2.00
Total expense of raising \$35.45
Net add \$14.00 for digging; \$50.00 hauling; \$7.50; sacks and twine, \$8.00 \$29.50
Grand total, raising and marketing, per acre \$67.95
With an average yield of 175 bushels at \$2.10 per bushel \$367.50
30 bushels of culls at 25 cents per bushel 7.50
Total receipts \$375.00
Net profit, less use of land, \$307.05
Yours respectfully,

—ARTHUR GIROD, Salem, Or., Route 8, box 153, Feb. 16.

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