

Oregon Agricultural College Extension Service

PAUL V. MARIS

Director

Cooperative Extension Work in Agriculture and Home Economics
Oregon Agricultural College and United States Department of Agriculture, Cooperating
Printed and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914

SEED POTATO CERTIFICATION FOR 1923

By

E. R. JACKMAN

Extension Specialist in Farm Crops

Potato seed certification work is carried on by the Extension Service of the Oregon Agricultural College. The purpose of it is twofold: (1) to carry out educational work in all phases of potato seed improvement;

READ CAREFULLY

Those who have had experience in growing certified seed as well as those attempting it for the first time are requested to read the rules carefully. Important changes have been made. Under "Standards of Certification" paragraph 6 has been added. Under "Vine Diseases" on page 4, weak plants are included with virus diseases. The percentage of vascular discoloration allowable at bin inspection has also been slightly changed.

(2) to locate all of the superior seed strains of standard varieties and aid in distributing such strains to other growers, thereby performing a service for both buyer and seller. Such seed as can be certified commonly sells from 25 percent to 100 percent above the price for table stock.

Basis of Finance. Potato certification is primarily educational work; therefore, all expenses incidental to the purely educational part of the work are borne by the Extension Service. County agents are in charge of the work in their counties and assist in every way possible growers who wish to grow certified seed. In addition, they hold field meetings and potato tours to familiarize all potato growers with the importance of good seed and how to produce it by proper rotation, roguing out diseased plants, hill selecting, and proper cultural methods.

Comparatively few growers produce certified seed. Three trips must be made to the farms of those who do produce it. This is quite expensive, and in view of the fact that these growers usually receive a premium for the seed they sell, there is a reasonable fee to help pay part of these expenses.

Need for Certification. Oregon uses annually from 400,000 to 500,000 bushels of seed. In 1921 the total amount certified was less than 5,000 bushels. In 1922 over 3,000 acres were entered for certification, and less than 10 percent passed as certified seed. Many growers every year buy seed which is represented to them as good seed, only to find that it produces more diseased plants than it does healthy ones. Many people are using diseased seed, not aware that their yields are reduced to the point where there is little or no profit in the crop, except in occasional years of very high prices. The need for the certification work is, therefore, apparent.

RULES AND REGULATIONS

(1) **Entrance Requirements.** Any grower, responsible company, or bona-fide association of Oregon having seed potatoes of a desirable variety may enter fields for certification.

(2) **Minimum Acreage.** There shall be no minimum acreage entrance requirements. Growers having less than an acre may enter if other conditions are met.

(3) **County Limitation.** Before certification work will be conducted in a county, application must be presented covering a total of not less than ten growers or not less than twenty acres. This county limitation is necessary because of the high expense of visiting an individual grower in a county.

(4) **Application.** Fields may be entered for inspection by turning in an application blank and the application fee. These blanks may be secured from the county agent in each county and are turned in through his office. Counties without agents may secure blanks from the Extension Service, Oregon Agricultural College, Corvallis, Oregon, the signed blanks being returned directly to the Extension Service. As an indication of intention on the part of the grower to carry out certification work, an application fee of \$1.00 must accompany the application blank.

(5) **Fees.** After payment of the application or entrance fee of \$1.00, no fees are charged for field inspection. A fee of five cents a bushel is charged for all potatoes meeting certification requirements at the time of the bin inspection. Fees, together with the deposit for tags, are due at the time of bin inspection and must be paid before a certificate can be issued to the grower.

(6) **No Entrance Fee for Boys' and Girls' Club Members.** Boys' and Girls' Club members entering less than one acre of potatoes when grown under regular project supervision are not charged the entrance fees, but when the acreage exceeds one acre the customary entrance fee is charged.

(7) **Tags.** All certified potatoes should be labeled with an official certification tag bearing the name of the certifying agency, the grower's name, postoffice address, the variety of potatoes, etc. Tags are printed and furnished at cost by the Extension Service in quantities agreed upon by the grower and the inspector. When certified potatoes have been grown for a seed company or are to be marketed through an association they may be certified in the name of the company or association when agreed upon by persons interested.

(8) **Field Inspections.** Growers are urged to join the inspector at the time fields are being examined. Weak, diseased, and off-type vines are pointed out. The grower is instructed to dig these plants and remove them from the field at once. Many potato diseases spread from plant to plant, and unless roguing is done promptly, the disease may spread extensively in the field. Failure on the part of the grower to rogue in the manner, and at the time directed will result in the rejection of the field for certification.

(9) **Sorting for Bin Inspection.** The grower must sort the potatoes before bin inspection. All potatoes of other varieties and any that are rotten, cut, stabbed, bruised, or otherwise mechanically injured; those that are pointed at the end, bottle necked, rough, or otherwise not symmetrical; and those weighing less than two ounces must be sorted out before they can be certified. Potatoes passing certification requirements will be tagged by the inspector or his representative.

(10) **Method of Inspection.** Usually two field and one bin inspections are made. The first field inspection, made about blossoming time, indicates to the inspector the presence of varietal mixture and disease that appears early in the season. The grower at this time is expected to provide the inspector with information as to seeding, handling of soil, and other items desired.

Fields not passing any inspection will not be considered further except by special request.

The second field inspection is made shortly before the vines ripen and late developing diseases are noted.

The bin inspection is made preferably not less than one month after harvest to determine upon the presence of disease and insect pests, trueness to varietal type, and accuracy of sorting to meet certification requirements.

WHAT THE GROWER SHOULD DO TO CERTIFY

Land. He should use new ground or land that has not been in potatoes for at least four years. Preferably, on old land, the potatoes should follow a legume or grass meadow crop. It is useless to attempt certification on land that has recently been in potatoes.

Seed. Preferably certified seed should be used. All seed, certified or not, should be carefully selected to smooth, symmetrical tubers, and it is better to avoid seed showing stem-end discoloration. The practice of using nothing but small seed should be discouraged because very often the small seed carries a larger percentage of disease, particularly the virus diseases such as mosaic.

Seed Treatment. All seed should be given the corrosive-sublimate treatment described in Oregon Agricultural College Experiment Station Circulars 24 and 25.

Blossom-end Seed Pieces Best. When in doubt about the presence of wilt, blossom-end pieces, which have less of that disease, should be planted by themselves.

Remove Sick or Diseased Plants. When any plant in the field appears diseased, dwarfed, or otherwise unhealthy, it should be immediately dug out and removed from the field regardless of whether an inspector has been there or not.

Wilted Plants. Any plant showing evidence of wilt should be dug out of the field. In plain cases of wilt, the plants on each side of the diseased plant should also be dug. This disease spreads through the soil and is almost sure to infest the two neighboring plants, especially if they are closer than two feet.

Sort at Digging Time. At the time of digging, all tubers that are rotting, damaged, cut, off-type, misshapen, non-symmetrical, or otherwise unsound and those weighing less than two ounces should be rigidly sorted out.

STANDARDS FOR CERTIFICATION

All potatoes certified by the Oregon Agricultural College shall in the judgment of the Inspector or the Potato Certification Board conform to the following standards:

(1) **Varietal Purity.** Seed stock containing a mixture with other varieties shall not be eligible for certification unless the hills representing such mixture are dug at blossoming time or staked at blossoming time and removed by the grower prior to the harvesting of the crop. The presence of 5 percent of mixture at the time of any field inspection will disqualify for certification.

(2) **Variety Classification.** Potatoes shall be named by their group name, with the exception of certain well marked varieties.

(3) **Type, Condition, and Appearance.** All potatoes must conform to variety type and shall be reasonably uniform, symmetrical, smooth, and free from cuts, stabs, bruises, and similar blemishes.

(4) **Size.** Two ounces shall be the minimum size. There is no requirement as to maximum size. Excessively large potatoes are not considered the best seed stock. The Certification Board believes that size of certified potatoes is a matter to be determined between the buyer and seller.

It is recommended that potatoes be sorted to sizes considered suitable to market requirements.

(5) **Cultural Conditions.** Fields shall not be accepted for certification if they are so weedy or the vines so injured by insects or other factors that satisfactory inspection is made difficult. Extremely poor soil conditions, uneven or weak stands, and similar conditions may disqualify.

(6) **Planting Near Other Potatoes.** Fields of potatoes grown within 200 feet of other lots of unrogued potatoes containing serious infection with mosaic or other virus diseases will be disqualified.

FREEDOM FROM DISEASE AND INSECT PESTS

The amounts of disease indicated below under A and B will disqualify seed stock for certification.

A. Vine Diseases—Field Inspections. 1. 5 percent of the plants showing curly dwarf, leaf roll, mosaic chlorosis, spindle sprout, or weak hills, either singly or in combination.

2. 5 percent of the plants affected by blackleg, wilt, or other diseases or abnormal conditions resulting in the premature ripening or death of the plant or the internal discoloration of the stem.

3. 10 percent of the plants affected by a combination of any of the above-mentioned diseases.

4. A majority of the plants showing a serious infection of late blight.

5. An amount of heavy *Rhizoctonia* infection sufficient in the judgment of the inspector to be considered serious.

In order that fields having less than the above-stated amounts of disease may be eligible for the next inspection, the grower must remove all weak or diseased plants except those attacked by late blight. Any such plants which appear at or after the time of the second field inspection must be removed before digging.

Growers should not wait for the arrival of the inspector before roguing their fields. This should be done early in the season and as often as time will permit.

The most successful growers of certified seed rogue their fields four to eight times during the season.

B. Tuber Diseases—Bin Inspection. 1. More than 11 percent vascular or internal discoloration, except that due to frost necrosis.

2. Wart, eel worms, and larvae of the potato tuber moth in any amount.

3. Serious infection with *Rhizoctonia* (Black scurf) and common scab. A small amount of light infection with these diseases will not disqualify.

4. All bin rots shall be removed and the potatoes shall be practically free from late blight.