Potatoes

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Abstract
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IOWA AGRICULTURAL EXPERIMENT STATION
Horticultural Section

POTATOES

Laurenz Greene T. J. Maney

This circular will answer the many inquiries received by the Iowa Agricultural Experiment Station relative to different phases of potato culture. More complete information on the investigational work now under way at the Station at Ames will be published later in a regular bulletin.

VARIETIES.

Early Ohio and Rural New Yorker are the leading early and main crop potatoes, respectively, now grown in Iowa. In addition to these two, other varieties have given as good or better results at Ames and should have a thorough trial in other sections of the state. They are:

**Early.**

**BOYEE:** A good-sized variety, oblong, thick; yellowish white with pink markings.

**EARLY SIX WEEKS:** Round and oval, medium to small in size, the skin is smooth with netted spots at one end and is brownish pink in color.

**EARLY ROSE:** This is a pink potato with smooth skin. It is medium in size and cylindrical in form.

**BEAUTY OF HARRISON:** A large, oval, white variety with a smooth skin.

**EARLY ROSSER:** This is a medium sized, elongated kidney shaped variety the color of which is bluish white tinged with brown. The skin is slightly netted to coarsely roughened.

**Late or Main Crop.**

**PROSPERITY:** The skin is smooth or slightly russeted white. Large in size and elongated, broad and flat.

**PEERLESS:** A large white variety, with finely netted skin. It is oblong, and rather flat.

**IONIA SEEDLING:** Roundish, often tapering and flattened. It is medium to large and yellowish white.

**VERMONT GOLD COIN:** Another yellowish white variety but with a russeted skin. It is medium to large in size and roundish oblong in shape.

**NORCROSS:** A white variety, medium to large in size, and roundish or nearly blocky in form.

**CARMEN No. 3:** Large, white, oblong, flattened.

These varieties will not be adapted to all soils of the state but they are worthy of a trial to determine whether they are superior to the older sorts.

**TIME OF PLANTING.**

No absolute rule can be given as to the best time to plant potatoes. The best time will vary with the seasons. Early varieties may be planted as early as the season will allow.

The later or main crop varieties should not be planted too early. They are apt to mature early in the fall and either rot before digging time or in wet weather start a second growth. During the past three years planting in the month of May has given the best results at Ames. Results will vary with the soil and with the seasons, but doubtless the main crop may be planted between April 25 and May 25 and the highest yields obtained thereby. Good results will follow planting through a much longer period. A ten year experiment is under way at Ames to throw light on this problem.
TREATING THE SEED FOR SCAB.

Potato tubers should not, under ordinary conditions, be planted without first treating them to prevent scab. The best method is to soak the whole tubers for two hours in one of the following solutions:

**Corrosive Sublimate Treatment.**

- Corrosive sublimate: 2 ounces
- Water: 15 gallons

(Reactive Sublimate can be purchased at drug stores in small tablets.)

This solution is a strong poison and care should be exercised in its use. Only wooden or earthenware vessels should be used.

**Formalin Treatment.**

- Formalin (Formaldehyde 40 per cent): 1 pint
- Water: 30 gallons

(Commercial Formalin is on sale at ordinary drug stores.)

The latter treatment is advised as the formalin is nonpoisonous and not so dangerous to handle. With either solution the tubers should not be soaked longer than two hours as distinct injury will result to the eyes or sprouts if they remain in the solution too long. Soak the tubers before cutting them or there will result a loss of many sprouts and a decrease in stand and yield. After treatment spread the tubers out to dry. Then they may be cut and planted, or stored. Clean bins or bags that have not held scabby tubers must be used, otherwise treated potatoes may become infected again. After the seed is cut it should not stand too long before being planted, although a few days delay will not cause a loss if heating is prevented.

Formaldehyde gas has been used and extensively recommended for seed treatment for scab. Results from its use at Ames have shown that while it will control the scab there is a great loss of vitality in the seed which results in a loss of stand and yield.

**SPRAYING.**

Spraying is one of the most profitable parts of potato culture. It almost invariably brings a large net profit as compared with its cost. The early blight and the late blight are the two diseases that must be combatted. The Colorado potato beetle and the flea beetle are the two important insects in Iowa. Other insects and diseases will occur, but the treatment for those named will control most of the other common ones. Spraying with bordeaux mixture for the early blight should begin when the plants are from six to eight inches high and should be continued at intervals of from ten days to two weeks thereafter. These same applications will control the late blight also. By adding three pounds of lead arsenate to fifty gallons of the bordeaux mixture at each spraying the insects can be controlled. One-half pound of paris green may be used in place of the lead arsenate.

**BORDEAUX MIXTURE.**

To prepare this mixture dissolve five pounds of copper sulphate or blue stone, in a small amount of water, dilute this to twenty-five gallons. Slake five pounds of lime and after it is well slaked dilute to twenty-five gallons and add slowly to the copper sulphate solution. These should not be mixed in the concentrated solution but in the dilute solutions as indicated. This will make fifty gallons of mixture or about enough to spray one acre once. In applying this mixture with traction sprayers it is important that every part of the vine be covered and it is better to use from two to three nozzles on each row rather than to trust to one to do good work.

**CULTIVATION.**

Thorough cultivation of potatoes, as of other crops, will pay good returns on the time and labor invested. Harrow after planting and again just as the young plants are coming through. The small weeds are easily killed at this time. Cultivate frequently thereafter, making from five to seven cultivations for the season. Dry seasons will require more thorough cultivation though cultivation is important in wet seasons. All weeds should be kept out with the hoe when necessary.