UNIVERSITY OF IDAHO
College of Agriculture

Malformed Potatoes

Factors Affecting Their Development

Richard E. Ohms

IDAHO Agricultural Extension Service

Bulletin 348
March 1961

Malformed Potatoes

Factors Affecting Their Development

RICHARD E. OHMS*

Malformed tubers are bottlenecked, pointed end, or dumbell in shape (Figure 1). The disorder is a serious factor in the production of quality Russet Burbank potatoes in Idaho. Malformed tubers are undesirable from the standpoint of internal quality as well as external appearance, since the malformed portion of a tuber will have lower specific gravity. In addition to the appearance and internal quality factors, pointed end and bottlenecked tubers are subject to jelly end rot.

Factors Producing Malformed Tubers

Malformed tubers are generally associated with environmental or growth factors that result in uneven tuber growth or development.

Water

In Idaho, improper use of water is one of the most important contributing factors. Up to 90 days after planting, a shortage of water will result in malformed tubers. After this date a lack of water will not increase the amount of malformed tubers. Of all irriga-

* Extension Potato Specialist, University of Idaho Agricultural Extension Service.

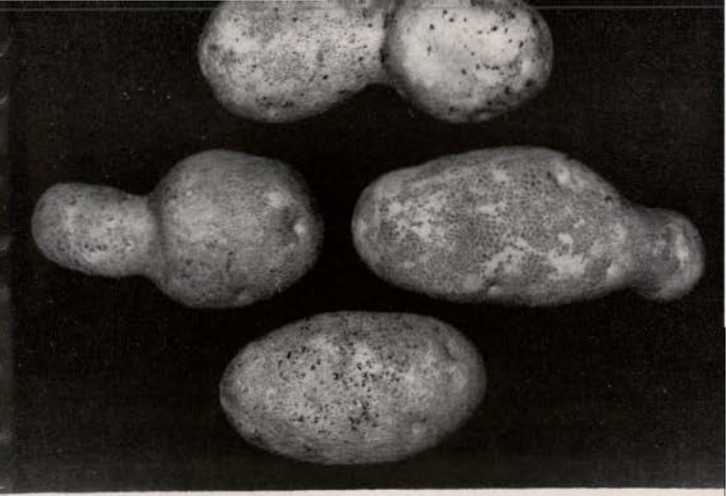

Figure 1.—Dumbell, pointed end and normal Russet Burbank tubers.

tions, the first is the most important in decreasing malformed tubers. Be sure to irrigate within 40 days after planting.

The amount of soil moisture during the growing season will affect the amount of malformed tubers. If the moisture level drops below 65 percent of the field capacity there will be an increased amount of malformed tubers at harvest.

Date of Planting

Potatoes planted prior to May 15 at Aberdeen will generally have more malformed tubers than those planted after May 15.

Soil Temperature

As the soil temperature increases the amount of malformed tubers will increase. After 30 days, each day the soil temperature is above 65° F., at the 12-inch depth, there will be in an increased number of malformed tubers.

Nitrogen

Nitrogen in excess will increase the amount of malformed tubers. What is excess depends upon the previous cropping history and amount of nitrogen applied to the potato crop. The University of Idaho fertility guide should be followed to arrive at the proper amount of nitrogen to be applied. Increasing the amount of phosphorus will not counteract the excess nitrogen.

Recommendations to Prevent Malformed Tubers

1. Keep soil moisture level above 65 percent of field capacity.

2. Irrigate within 40 days after planting.

3. Use University of Idaho fertilizer guide, Extension Bulletin 325, for establishing fertilizer practices.

4. Plant deep and maintain a loose hill to keep the soil temperature lower where the tubers are developing.

5. Consult your county extension agricultural agent.

Published and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914, by the University of Idaho Agricultural Extension Service, James E. Kraus, Director; and the U. S. Department of Agriculture, cooperating.