

Potato Physiological Disorders - Growth Cracks¹

Chad M. Hutchinson²

Growth cracking is a physiological disorder of the potato tuber in which the tuber splits while growing. The split heals but leaves a fissure in the tuber. Growth cracks generally start at the bud or apical end of the potato and can extend lengthwise. Growth cracks can vary in severity from appearing as a surface abrasion to a split through the tuber. The severity depends on the stage of growth the initial cracking occurred (Figure 1).



Figure 1. Moderate (left) and severe (right) growth cracks in Atlantic.

Even though cracking does not usually predispose the tuber to rotting, growth cracks can negatively impact potato tuber quality. Growth

cracks make fresh-market tubers unattractive. Severe growth cracks can even impact the quality of chip processing potatoes (Figure 2).



Figure 2. Examples of severe growth cracks in Atlantic that would reduce marketability.

The reason why growth cracks occur is not well defined. However, growth crack incidence increases when growing conditions are uneven or sudden environmental changes occur. Critical environmental conditions include both soil moisture and temperature. Growth cracks increase when relatively poor growing conditions are followed rapidly by relatively good growing conditions. There are differences in the susceptibility of potato varieties to

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2. Chad M. Hutchinson, assistant professor, Horticultural Sciences Department, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, 32611.

growth cracks. Atlantic, the most widely grown potato for chip processing in Florida, is relatively susceptible to the disorder.

To reduce the incidence of growth cracks, maintain proper soil moisture during the season. This is especially important during the bulking stage when the plants are large and tubers are rapidly expanding. In Florida, this stage of growth occurs late in the season when air and soil temperatures are increasing quickly. Large plants and expanding tubers require relatively more soil water to maintain good growth.

The only recourse when the incidence of severe growth cracks is high is to select out tubers with severe growth cracks prior to packing and/or shipping.

References

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