

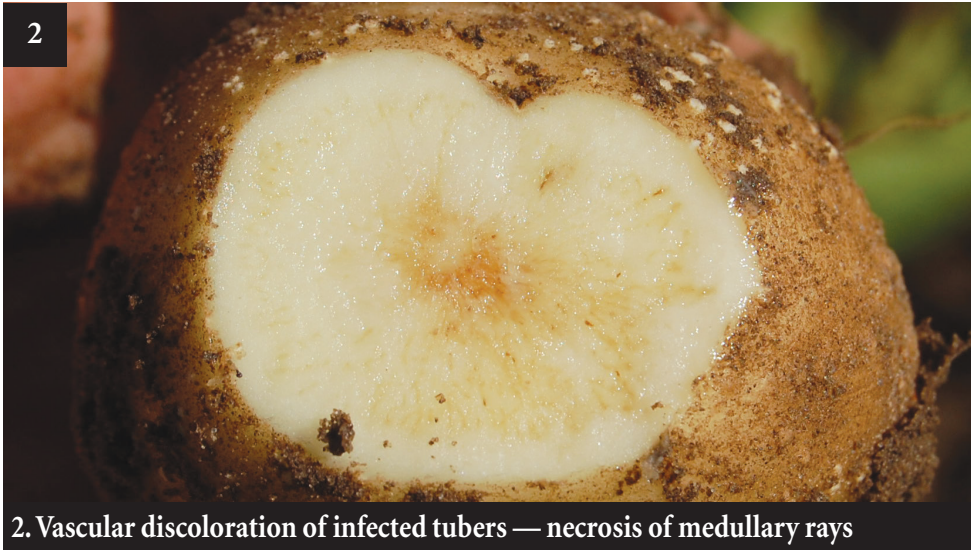
# Zebra Chip Disease Profiles II

## Tuber Symptoms

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1. Vascular discoloration of infected tubers — necrosis of vascular rings



2. Vascular discoloration of infected tubers — necrosis of medullary rays



3. Discoloration in the vascular ring of a young, immature tuber



4. Diagnostic symptoms of Zebra Chip



5. Pinkish-purple color of "belly button"



6. Enlarged lenticels on tubers



7. Vascular discoloration in tubers

## Introduction

A new disease of potato exhibiting the foliar symptoms of yellowing, purpling, and distortion was first observed around Saltillo, Mexico in 1994, before being reported in the U.S. in 2000 in south Texas, where it caused substantial losses to both producers and processors in 2004-2005. The most distinguishing characteristic is a discoloration of sliced tubers after frying, resulting in the name “Zebra Chip.” The disease is now known to be present throughout Latin America and has been reported from at least eight states in the U.S., including Nebraska.

The pathogen causing Zebra Chip is transmitted to plants by the potato-tomato psyllid, *Bactericera cockerelli*. The most recent research to date strongly suggests the pathogen to be the fastidious bacterium ‘*Candidatus Liberibacter solanacearum*’. It is limited to the phloem of plants, thus resulting in numerous symptoms associated with a disease of the vascular system.

### Tuber Symptoms Associated with Zebra Chip

Figure	Description
1.	Vascular discoloration of infected tubers — necrosis of vascular rings.
2.	Vascular discoloration of infected tubers — necrosis of medullary rays.
3.	Discoloration in the vascular ring of a young, immature tuber. Disease symptoms can be observed in plants at all stages.
4.	Diagnostic symptoms of Zebra Chip from infected tubers after frying. The discoloration of fried tuber slices is the origin of the disease name as zebra chip.
5.	An infected tuber also will exhibit a pinkish-purple coloration of the “belly button.” This is the site of attachment of the stolon to the tuber.
6.	Enlarged lenticels on tubers are another symptom of the disease.
7.	Vascular discoloration in tubers from a home garden after peeling and cutting into pieces. Foliage did not exhibit severe symptoms.

## Management

- There are currently no known disease-resistant potato cultivars, but this should be an effective tool after new resistant cultivars are available.
- Vigorous scouting and targeting of psyllid populations with aggressive chemical applications.
- Quarantine of tubers from infected fields.