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## Examining Cultural and Chemical Treatments to Fusarium Bulb Rot in Onions

Tim Miller

Utah State University, thamiller27@icloud.com

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# Examining Cultural and Chemical treatments to Fusarium Bulb rot in Onions

## Background

A grower in northern Utah lost 40% of his onions to a Fusarium bulb rot. This fungus has caused other outbreaks, but it is poorly studied, and little is known about effective control measures.

## Methods

### In Vitro Component

Mycelial discs were put onto petri dishes that contained a mixture of potato dextrose agar at half strength along with different fungicides. Five different fungicides were tested. They were allowed to grow at 30°C for seven days and then the average daily growth was measured.

### In Field Component

Vaquero onions were grown in the USU research farm in Kaysville. Seven of the eight treatments were inoculated with *F. proliferatum*, and each treatment received different chemical and cultural treatment (see graph to the right). Onions were topped, and then stored for two weeks. After storage, all onions were cut open and checked for Fusarium bulb rot.

## Results

### In Vitro Component

The fungicides Pristine and Luna Tranquility performed the best and were selected for use in the field component of the experiment

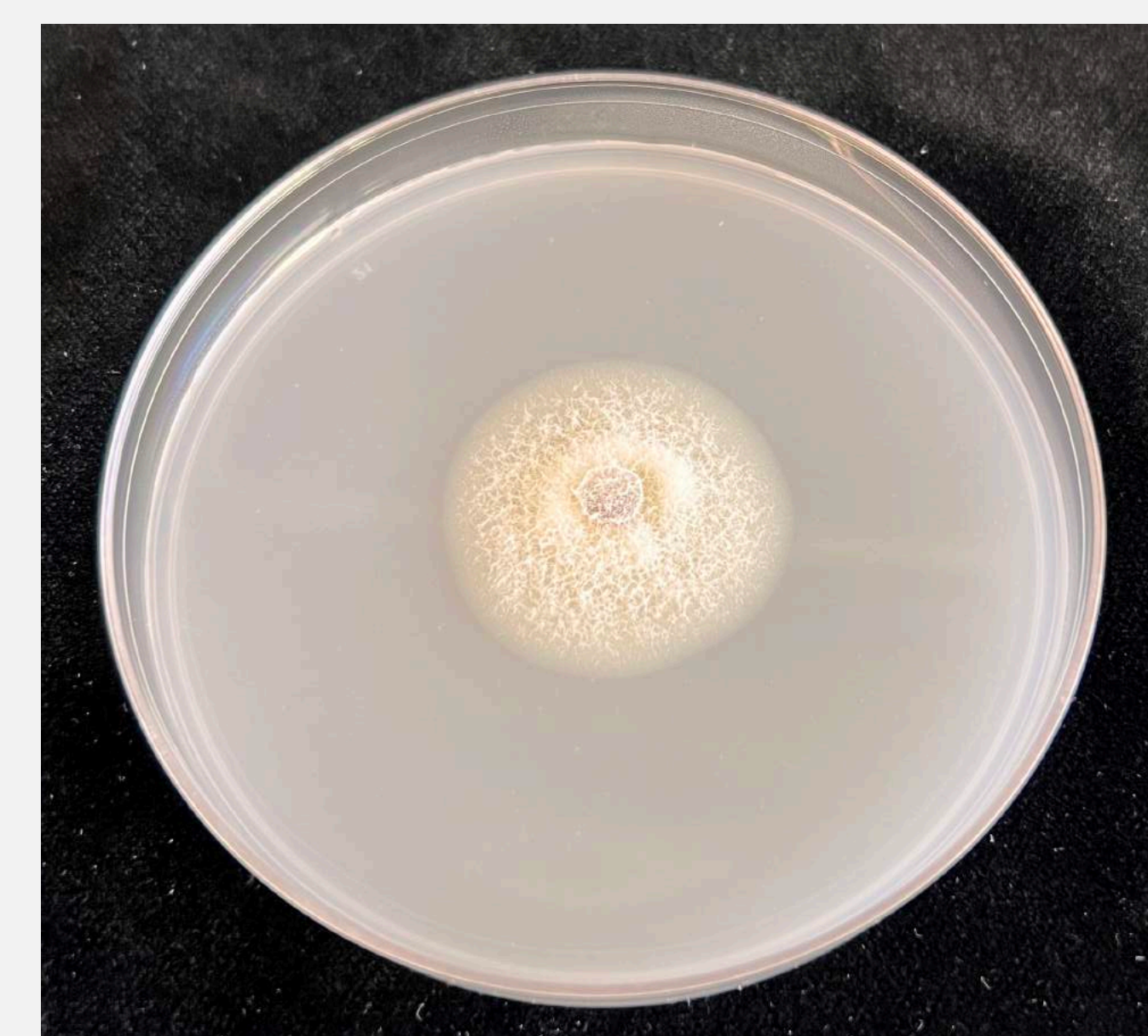
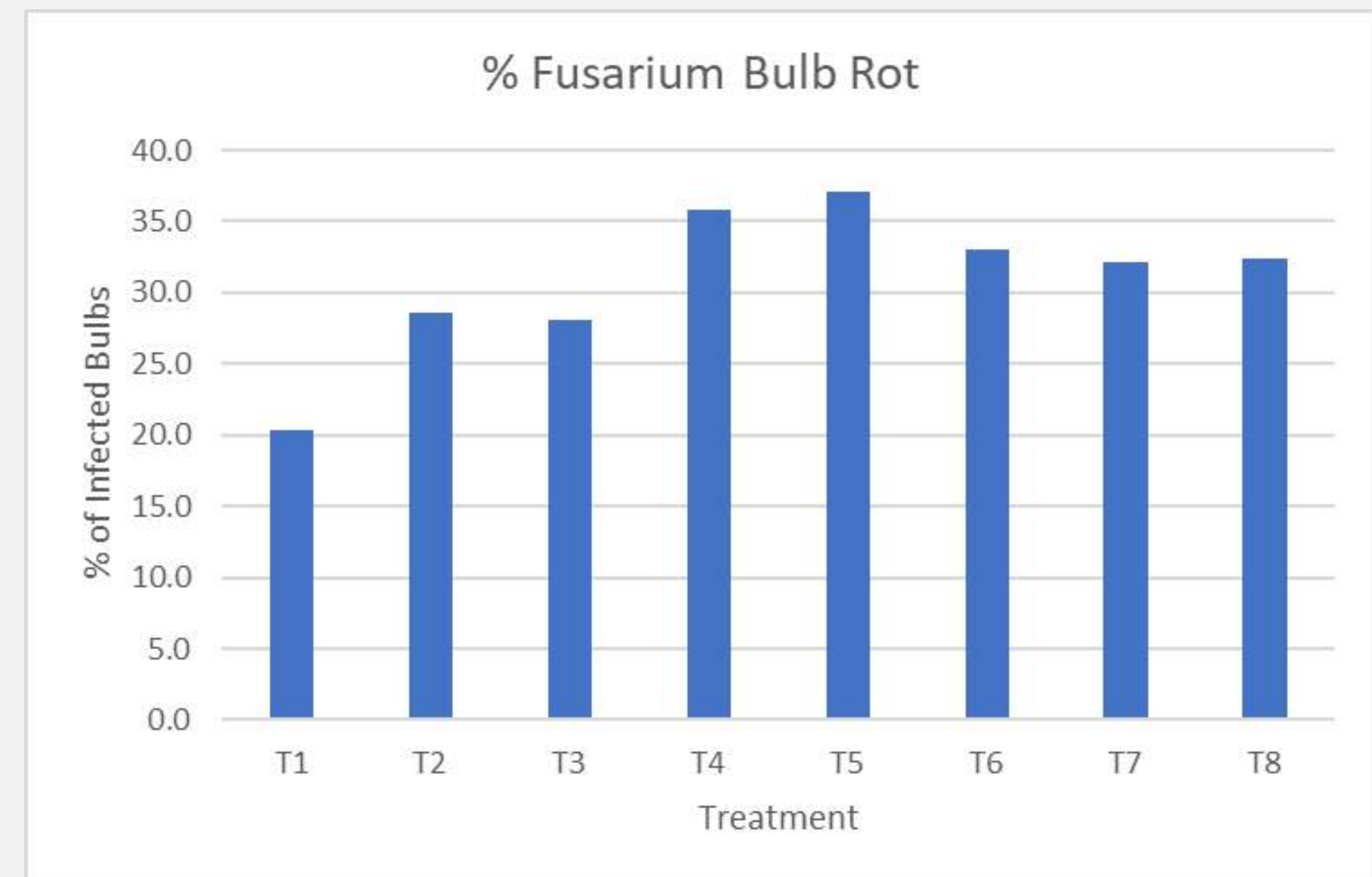
### In Field Component

Treatments 2 and 3 both had numerically lower percentages for total percent infected, although none of the observed differences were statistically similar.



These images show onions infected with *Fusarium proliferatum*.

- T1 – Uninoculated Check w/ Short Neck
- T2 – Long Cut Neck
- T3 – Short Cut Neck w/ 1 app of Pristine
- T4 – Short Cut Neck
- T5 – Short Neck w/ 1 application of Luna Tranquility
- T6 – Long Neck w/ 2 applications of Luna Tranquility
- T7 – Short Neck w/ 2 applications of Pristine
- T8 – Long Neck w/ 1 application of Pristine



Pictures above depict *Fusarium proliferatum* grown on media mixed with different fungicides. From left to right: Pristine, Luna Tranquility, and a nontreated control.