

Fruit Cluster Pruning of Organic Tomatoes

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How does fruit cluster pruning impact the yield, quality, and marketability of three types of tomatoes grown under organic management in a high tunnel?



Introduction

This research project examines the impact of fruit cluster pruning on three cultivars of tomato grown organically within a high tunnel. Each plant was trained to have a single leader. Two cluster pruning treatments and a control were used to study the effects on limiting fruits per cluster on yield, marketability, and quality. The experiment was replicated twice, in 2016 and 2021, at Colorado State University's certified organic farmland located at ARDEC South. First-year data suggests that cultivar selection, rather than cluster pruning treatments, is a more important factor when considering total and marketable fruit yield and indicators of quality.

The different fruit cluster pruning treatments used in this experiment. Clockwise from top left: 3 fruits per cluster, 6 fruits per cluster, unpruned cluster for control (with 9 fruits).

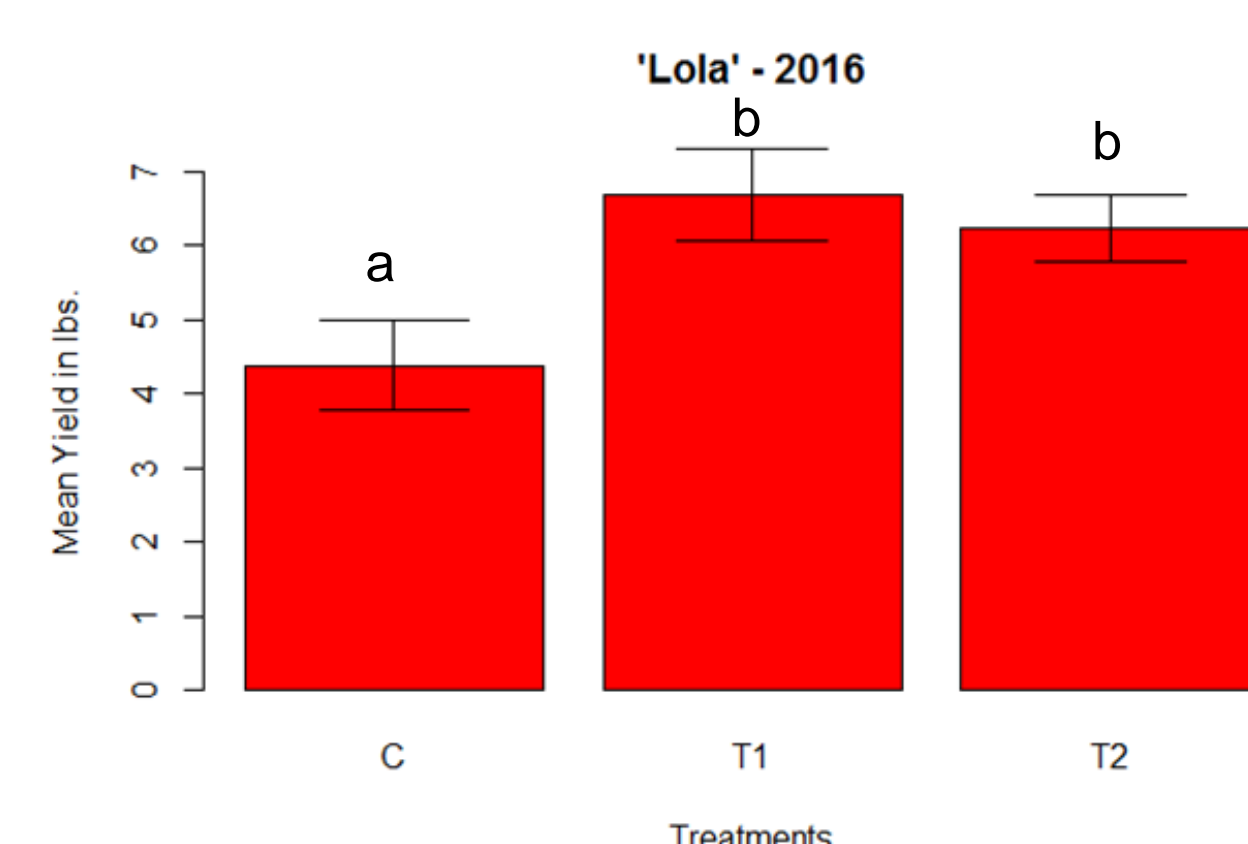
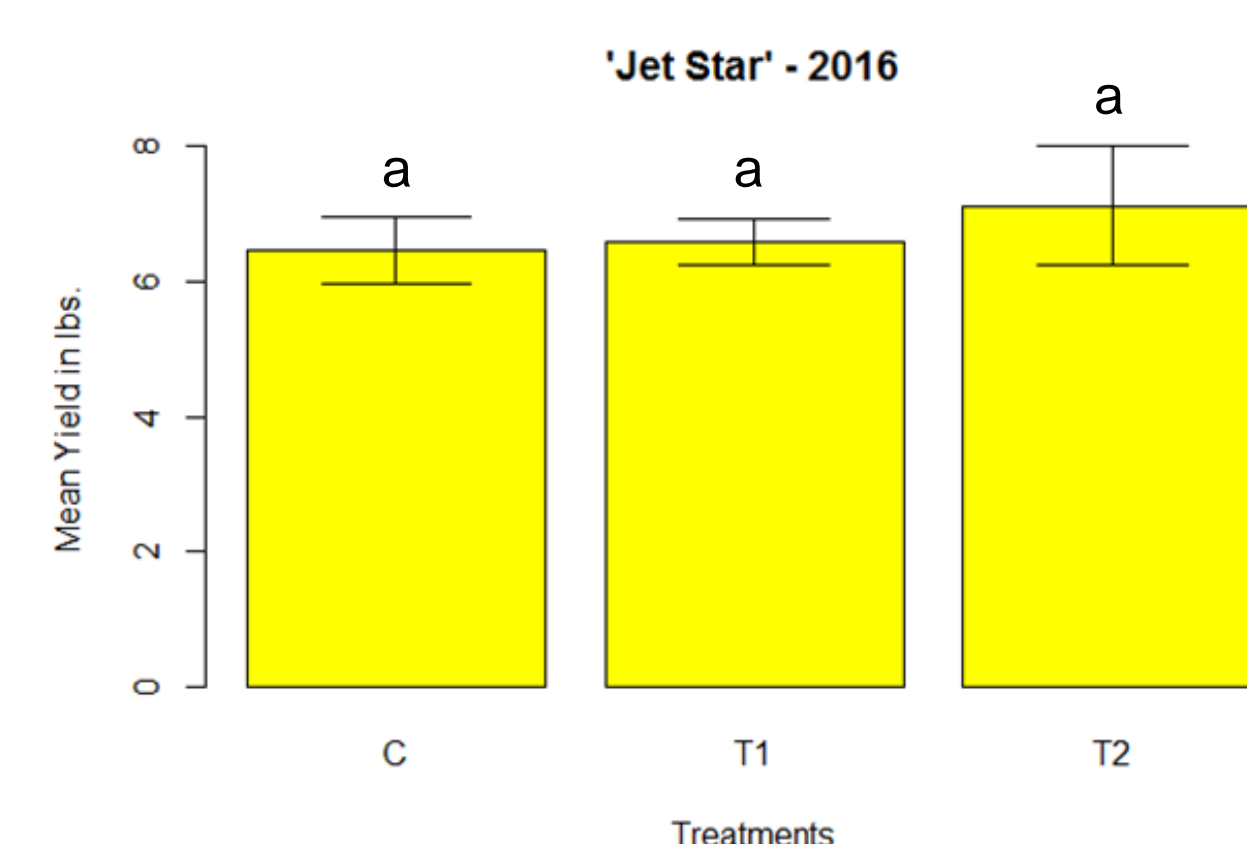
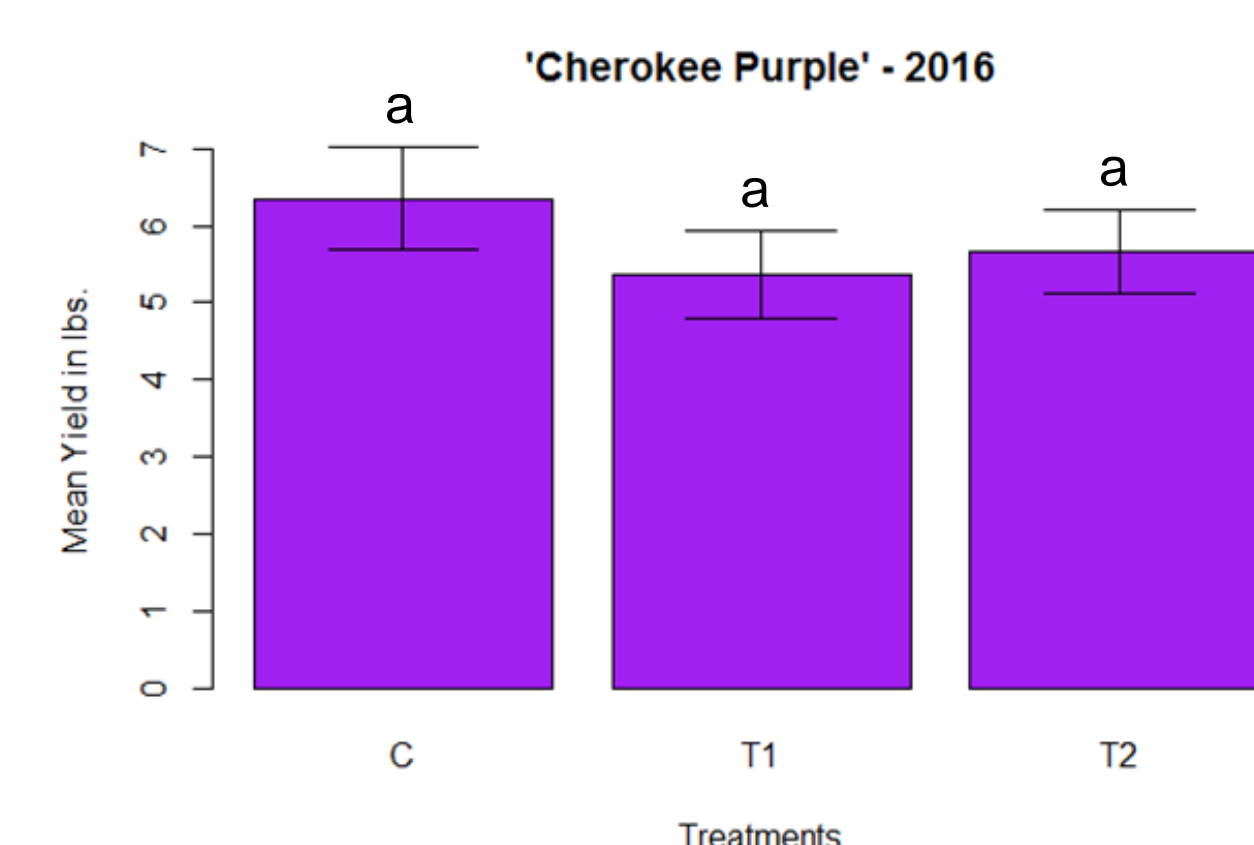


Materials and Methods

Two fruit cluster pruning treatments were used to investigate the effects of fruit load per cluster on total yield, marketability, fruit size, and soluble solids content. The treatments were clusters thinned to 3 fruits and clusters thinned to 6 fruits, with the control group having unpruned clusters and a natural number of fruits. Cherokee Purple, Jet Star, and Lola were the three cultivars of indeterminate tomatoes used in the study.

Results

2016 Total Yield by Cultivar



Above: Organic tomato production in a high tunnel
Below: Intensive commercial production in a greenhouse
(Photo by David Leaming, Kennebec Journal, 2014.)

Conclusions

For two of the three tomato cultivars, there was no difference in total yields across the treatments. Individual fresh fruit weight increased as fruit load per cluster decreased. Marketability is heavily influenced by cultivar. Soluble solids content, an indicator of quality, was not different between treatments. In summary, larger fruits can be produced without having a negative effect on total yield or quality.

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