Developing Customizable Decision Support Tool for Comparative Economics Analysis of Grafted and Non-grafted Tomato Production

Yuning Zhao 1, Zhifeng Gao 1, and Xin Zhao 2 ¹ Food Resource Economics Department, University of Florida, Gainesville, FL 32611. ² Department of Horticultural Sciences, University of Florida, Gainesville, FL 32611. Email: toffee1993@ufl.edu

Background

- Tomato grafting has been utilized worldwide with a long history and grower adoption of grafted tomato production is increasing in the U.S.
- Usually the rootstock is selected for improved soil borne disease resistance, nutrient uptake, plant vigor, and fruit yield, while the scion is selected for good foliar resistance package and preferred fruit characteristics.

Objectives

- The objective of this research is to develop a customizable decision support tool to compare economics analysis of grafted and non-grafted tomato production.
- . This tool allows growers to change the quantity and price of the production input items as well as the output quantity and prices based on their own historical data, therefore, to create a scenario that helps them better forecast the cost and benefit of using grafted tomato plants at their farms.
- The tool can be effective in assisting producers with making both short- and long-term production decisions. The Tomato Budget Tool is a Microsoft Excel template programed with visual basic application (VBA) that calculates costs and expected net returns of grafted and non-grafted tomato production in open field.
- 3. The tool can produce graphs and charts to show the comparison result. In addition, break-even and sensitivity analyses are included in the tool, which can help growers evaluate the economic cost and benefit of grating under different scenarios based on the changes with various input factors and output factors

Conclusion

Using this tool, growers can get the assess to the economic viability of tomato grafting based on their own unique production conditions. The academic data can be used to explain and preview the production budget result and guide growers to organize the production.

Previous Study



Although some previous studies have shown that using grafted tomato plants could increase net return, the adoption rate of tomato grafting is still low especially for open field production.

Almost all the previous economic analyses of tomato grafting are based on specific on-station or farm trials. For most growers such information cannot provide sufficient justification for their adoption of grafting. Growers need to assess the economic viability of tomato grafting based on their own unique production conditions.

