CONTINUANCE OF A LONG TERM PEANUT SUSTAINABILITY PROGRAM IN GEORGIA UTILIZING THE FIELD TO MARKET FIELD PRINT CALCULATOR 2022

Kaylyn Groce Reagin
Wesley Porter
University of Georgia – Tifton

The Fieldprint Calculator, created by Field to Market: The Alliance for Sustainable agriculture, is a tool used to estimate field level performance through the following eight indicators of sustainability: soil conservation, energy use, land use, soil carbon, greenhouse gas emissions, water quality, biodiversity, and irrigation water use. The calculator is confidential and located on the Field to Market® website for producers of major commodity crops to utilize at no cost. The operation of the typical calculator is as follows: Growers are presented with a series of questions about their management practices for a field and are provided with feedback in the form of an index on their environmental impact and efficiency – the smaller the value of the index, the more sustainable and efficient the practice. Based on this feedback growers can compare their management practices to those of national, state, and local averages presented as a spidergram. The farm Fieldprint allows the producers to understand in what areas they are outperforming other peanut producers and in what areas they could improve their performance.

Within the Fieldprint Calculator, researchers can simulate potential crop production scenarios and how they affect sustainability metric scores. For this research project, four-base crop production scenarios were created in the calculator for a cotton-cotton-peanut rotation: irrigated-conventional tillage, irrigated-strip tillage, dryland-conventional tillage, and dryland-strip tillage. Metric scores received from each crop production scenario were then applied to 236 fields across South Georgia which are entered into the project. These fields are a representation of upwards of 50 growers enrolled in the project. From the four-base scenarios, preliminary results showed that dryland fields and strip-tillage field emitted less greenhouse gas emissions (Figure 1). Strip-tillage fields had a neutral soil carbon index, whereas conventional fields were losing soil carbon which is crucial for improving soil physiological properties (Figure 2).

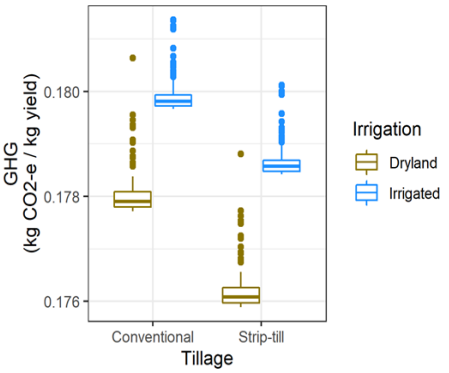

Figure 1. Greenhouse gas emissions based on the four-base crop production scenarios.

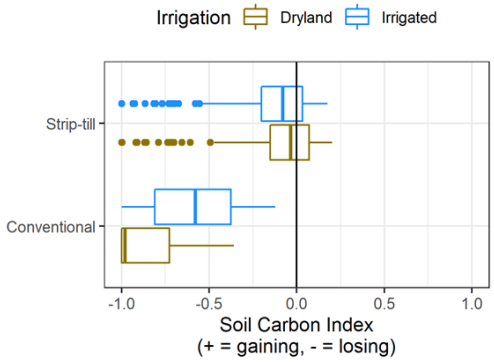

Figure 2. Soil Carbon Index based on the four-base crop production scenarios.

Conclusions from the sensitivity analysis will be compiled in a peer reviewed journal article and Extension publications. Our goal is to share information on peanut sustainability to other researchers and peanut growers as sustainability is at the forefront of the agricultural supply chain. As we begin to establish baseline sustainability metrics and run various sensitivity analyses, an economic analysis will be conducted to show how sustainable management practices can influence on-farm economies.