

# Soil Balancing Research Team Hosts Reverse Field Day

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The OSU Soil Balancing Research Team facilitated a unique experiential field tour and meeting focused on a farming concept known as “soil balancing”. The event was held on August 9-10, 2018 at the Ohio Agricultural Research and Development Center (OARDC) in Wooster, Ohio.

Soil balancing generally refers to the theory and practice of attaining an optimum soil ratio of the plant macronutrients, calcium (Ca), magnesium (Mg), and potassium (K), through the application of mineral amendments. However, for many farmers and consultants, the concept refers to a wider range of considerations that include management practices and the application of micronutrient blends and microbial formulations.

## Soil Balancing Literature

The peer-reviewed scientific literature on soil balancing focuses primarily on the manipulation of the soil's chemical ratio, and has many gaps regarding the range of crops tested and responses measured, and the degree to which previous research has incorporated the contextual factors important for farmers. The OSU Soil Balancing Research Team's efforts have been designed to help address these gaps by integrating the expertise and insights of farm consultants and farmers to advance understanding of soil balancing research methods and outcomes. The project considers a broad range of crops and potential impacts, including effects on yield, soil health, crop quality, weed pressure, and profitability.

## Reverse Field Tour

The Research Team's goal for the reverse field tour experience was to have an informed discussion with a diversity of stakeholders, rather than use the standard structure, centered on presentations by the Research Team. The event's denotation as a “reverse” field tour results from this greater focus on stakeholder input versus a standard approach.



*Andrea Leiva Soto with her advisor, Dr. Doug Doohan, highlighting key findings and facilitating discussion with participants on an organic vegetable on-farm trial. Photo Credit: Stephanie Short*

To facilitate informed conversations during the reverse field tour, a packet of short research summaries and other hand-outs was provided to the participants for review prior to the meeting. On the tour, the group visited nearby on-farm trials and research station plots, and engaged in lively conversations about research methods, how to interpret results, and possible new research avenues to explore.

Field tour participants ranged from Ohio, Illinois, Michigan, and Pennsylvania, and included six members of the Team's Stakeholder Advisory Committee (consisting of five farmers, one consultant, and one university soil fertility specialist) and seven additional farmers and consultants.

Research Team members included faculty and staff in the Department of Horticulture and Crop Science, School of Environment and Natural Resources, and the Agricultural Technical Institute at The Ohio State University.

## Findings

The expanded diversity of voices gathered for the field day highlighted the ways farmers and consultants assess the success of certain farming practices and how they envision potential supportive roles for university research.



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For example, in the case of this project, farmers and consultants seemed to share a general sentiment that soil balancing works in certain contexts and as a part of a broader management system that includes practices like cover cropping and crop rotation. However, they wanted to know more about why it works and under what conditions it might work best. They also emphasized the importance of on-farm experiments in terms of their relevance for farmers. At the same time, participants learned about some of the challenges of academic research and the difficulty of isolating singular effects within the complexity of a farming system, which includes many variables.

In summary, the Ohio State Research Team will use the discussions and feedback from this event to further broaden their collaborative efforts. The Team believes that cultivating relationships with farmers and consultants will result in better designed research that is mutually beneficial.



*Following the larger group discussion about an on-farm organic vegetable research trial, the collaborating farmer continues conversation with OSU research scientist, Dr. Subbu Kumarappan (third from the left), and a tour participant/farmer. In the background, a farmer and a consultant on the tour explore a cover crop mix. Photo Credit: Caroline Brock*

## Soil balancing team

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## For more information

Visit: <http://go.osu.edu/soil-balancing>

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