

# SOIL SOLUTIONS AT UF FIELD AND FORK: NUTRIENT MANAGEMENT WITH DR. GABRIEL MALTAIS-LANDRY

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Drip Irrigation



Turning Soil



Reviewing Objectives



Fertilizer Implimentation

## Introduction

Dr. Gabriel Maltais-Landry, Associate Professor of Sustainable Nutrient Management Systems in the University of Florida's Department of Soil, Water, and Ecosystem Sciences (SWES), is at the forefront of teaching students how to relate classroom theory to practical application at the UF Field and Fork farm and garden. On the Field and Fork farm and garden, pest management and nutrient management are the cornerstone of sustainable agriculture. Through his Environmental Nutrient Management class, Maltais-Landry provides students with an immersive learning experience by bridging the knowledge gap between traditional lecture and the challenges of real-world.

students learn firsthand how nutrient availability—referring to the extent to which essential nutrients are accessible to plants in the soil—affects plant growth, health, and overall productivity. They compare the growth of crops cultivated with different rates of fertilizer and some controls without fertilizers. Teaching students about nutrient availability is crucial, as it equips them with the knowledge and skills to manage soil health and sustainably optimize crop production. Understanding how nutrients affect plant growth enables future agricultural professionals to make informed decisions that balance productivity with environmental stewardship, ultimately contributing to food security and sustainable farming practices, which is why Maltais-Landry's course is so important to those in the field.

"This practical experience helps my students grasp the context and put what they've learned into practice," Landry said.

Undergraduate students at UF in Maltais-Landry's course get the chance to physically get their hands dirty at the Field and Fork Farm and Garden. This smaller, more intimate course includes students from various majors, such as Environmental management and plant sciences, all of which fall under the College of Agricultural sciences. Under Maltais-Landry's direction,

Students learn important lessons that have a more significant lasting effect than graphs or charts in the classroom when they see firsthand the distinctions between crops after different rates of nutrients are applied and those subjected to nutrient deprivation.



## The Challenges of Applying Sustainable

Applying the proper nutrients is more challenging than creating sustainability. Sustainable management on actual farms is mostly determined by market pressures. Farmers frequently struggle to implement sustainable methods like crop rotation and cover crops because they have to balance ecological objectives with economic viability.

**"A farmer is an enterprise. They have to generate revenue. They must settle their debts," Landry said.**

This truth is a crucial component of the teachings at Field and Fork. The students learn that successful sustainable solutions require more than a biological understanding. Maltais-Landry's class teaches students how to balance the need for economic stability and ecological sustainability.

One of the most critical lessons Maltais-Landry imparts to his students is the potential of combining different strategies for managing nutrients. He looks

at alternatives to using only synthetic fertilizers, such as mixing fertilizers with organic materials like compost and manure. These techniques can maintain plant health and lessen some of the adverse environmental effects of traditional fertilizers. Nutrient management is all about using a variety of techniques to maximize yields without compromising environmental health. These management practices emphasize sustainability, resilience, and healthy soil, encouraging students and farmers to think creatively about nutrient cycles.

### The Broader Framework for Managing Nutrients

In Nutrition Management, practical fieldwork is closely related to the larger goals of enhancing soil health and creating resilient, climate-smart farming methods. As stressed in the Environmental Nutrient Management class, sustainable agriculture is about building resilient ecosystems to withstand the stresses of resource shortages and climate change, not just increasing yields.



Students understand the intricacy of agroecosystems and the value of stewardship, and they come to see nutrient management as an essential part of the broader objective of agricultural sustainability.

Better research, market support, and targeted education are necessary for a sustainable agricultural future. Closing the knowledge gap between theory and practice is vital for developing resilient agricultural systems. As Dr. Maltais-Landry emphasizes, "It's essential for future generations to understand the interplay between ecological sustainability and economic viability." To learn more about his class and his vision for sustainable nutrient management, visit his website. For additional information about the Field and Fork program and opportunities for collaboration, explore their website as well. <https://fieldandfork.ufl.edu/>