

# "Sustainable Soil and Cropping Systems" FY23

Status: NIFA REVIEW

## Project Director

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## Organization Project Number

## Organization

University of Massachusetts

## Accession Number

7002072

## Start & End Date

10/01/2020

## To Project / Program

"Sustainable Soil and Cropping Systems"

## Primary Critical Issue

Sustainable Agriculture and Food Systems

## Fiscal Year

2023

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### In 2-3 sentences, briefly describe the issue or problem that your project addresses.

The project is addressing soil health and agricultural practices that enhance soil health. Additionally, the project focuses on reducing agricultural off-farm inputs such as herbicides and fertilizers, thus reducing environmental pollution. Finally, the project is focusing on reducing greenhouse gasses such as CO2 and N2O.

### Briefly describe in non-technical terms how your major activities helped you achieve, or make significant progress toward, the goals and objectives described in your non-technical summary.

Despite the lack of personnel in the UMass Extension CDLE team, with the help of dedicated graduate students, we were able to achieve most of the project's goals and objectives. Students were the key to the annual field days, educational workshops, maintaining the CDLE website, and publishing several scientific journal papers and extension factsheets.

### Briefly describe how your target audience benefited from your project's activities.

The target audience benefited from the project in different ways:

1. Increased net income due to the use of cover crops thus reducing fertilizer and herbicides.
2. Diversify their crops, which not only improves the general health of their agricultural soils but also provides insurance against unpredicted environmental extremes, including high temperatures or drought conditions.
3. Growers learned about the cultivation of several new crops, including okra, saffron, and faba bean, that can be used as ethnic crops due to the increasing population of immigrants in the state.

### Briefly describe how the broader public benefited from your project's activities.

Many of the projects are focused on protecting the environment from pollutants, including nutrients, herbicides, and sediments. Projects such as grazing management, manure management, cover crops, and transitioning to no-tillage systems not only protect water bodies but also reduce carbon and N2O emissions to the atmosphere.

### Comments (optional)

A major issue was insufficient personnel in the Crops, Dairy, Livestock, and Equine team of UMass extension. This resulted in providing fewer in-person technical and educational assistance to the farmers, especially those located in the far north and south of the coastal areas.

- UMass Extension Annual Field Day- Research Reports (2) - 120 participants
- Applied research on cover crops for improving soil health and recovery of nutrients - Cover crop termination strategies (4) - 250 participants.
- One-on-one technical assistance to farmers by Phone, email, and in-person consults (600) 600 participants
- CDLE Newsletter (1) - 2000 participants

- Fact Sheet - Soil Health, nitrogen sufficiency test (2) - 750 participants
- On-farm demonstrations: Best management practices for equine (5) 400 participants
- The Agronomy Journal and the Journal of Plant Production (24) 6000 participants
- Graduate Advisor SSA - 4 students
- SSA Graduate Advisory Committee - 16 participants
- Workshop presenting results of on-farm demonstrations and applied research on equine management practices (4) 800 participants.