

## **Project: Expanding the Role of Cover Crops in Sustainable Cropping Systems**

**Researcher:** [Matt Ryan](#)

### **Need:**

Cover crops provide myriad benefits to producers and the environment, including reduced erosion and improved soil health, weed suppression, supplemental forage for livestock, and enhanced resilience to weather variability caused by climate change. Despite evidence that cover crops improve agricultural sustainability, they are underutilized in the Northeast. Farmers often cite lack of time to establish cover crops after fall harvest as being a major barrier to their adoption. Effective management strategies are needed to facilitate establishment, decrease costs, and increase the value of cover crops to farmers.

### **Approach:**

As part of his Hatch project (NYC-125432), Dr. Matt Ryan and his colleagues at the Cornell Sustainable Cropping Systems Lab developed a multifaceted approach aimed at increasing cover crop utilization in agronomic crops in the Northeast. They performed a series of experiments and on-farm trials that included evaluating the benefits of a cover crop drill-interseeder, assessing the success of organic soybeans no-till planted into roll-crimped cover crops, and demonstrating the advantages of cover crops used as forage. They disseminated results to farmers, extension educators, and students through a variety of media, including workshops, newsletters, conferences, and peer reviewed publications.

### **Results and Impact:**

As a result of this research and outreach addressing knowledge and technology barriers, several organic farmers in New York State have adopted practices that were developed as part of this project. In fact, members of both farms where on-farm trials were conducted have been instrumental in communicating the benefits to other producers. By diversifying crop rotations, especially when cover crops are harvested for forage, farms will be more resilient and adaptable when cropping plans are disrupted by extreme weather events. They will also enjoy the many other agricultural and ecosystem services provided by cover crops. Almost two dozen publications have resulted from this work, as well as over 40 presentations and other communications. Additionally, a cover crop module was added to the nitrogen management program Adapt-N, so farmers can determine how cover crops affect optimum nitrogen fertilizer application rates.

Related Information: [Cornell Sustainable Cropping Systems Lab](#)