

Improving Soil Health

in WESTERN NEW YORK

Improving Soil Health for Vegetables in Western NY

Excess rains and droughts of the past decade pointed out the poor health and productivity of soils on many local vegetable farms. Coupled with high fuel prices and high fertilizer prices, growers have been eager to improve their soil management efforts. Reduced tillage leads to less fuel use and legume cover crops allow the farmer to grow nitrogen fertilizer, reducing their need for conventional fertilizer and the fuel and labor to apply it.

Over the past several years, the Cornell Vegetable Program (CVP), using NY Farm Viability and SARE support, has conducted the Cornell Soil Health Test on soils from 70 vegetable fields on 20 farms in the region. From those tests, fields were compared based on their soil management for percentage of water-stable aggregates.

A soil with low % water-stable aggregates has poor crop emergence, more crusting, more runoff, reduced root growth, increased root diseases, and fewer beneficial microbes to cycle soil nutrients.

Vegetable farms using conventional tillage and few cover crops had an average of just 18% water-stable aggregates, while farms using reduced tillage or extensive cover cropping averaged 36-39%.

Innovative growers are now beginning to adopt both strategies to improve soils even more.

In addition, the Cornell Vegetable Program is working with a number of conventional and organic vegetable growers on increasing the use of a wide range of cover crops to fill open niches in rotations to improve soil health and grow nitrogen.

There is a lot of momentum to improve soils and the CVP will continue to teach and assist growers in doing so.

Through 2 winter meetings, Cornell Vegetable Program Specialist Carol MacNeil provided intensive education on all aspects of transitioning to reduced tillage. Fourteen new vegetable growers now want to try reduced tillage on their farms.

"I have less soil compaction, better crop growth and much less fuel use after a few years of reduced tillage."

— Rod Stettner, grower,
Spencerport, NY

"Cover crops have reduced pest pressure and decreased costs for nitrogen fertilizer on my farm."

— Kurt Forman, grower,
Palmyra, NY



Your Trusted Source for Research-Based Vegetable Knowledge



Cornell University
Cooperative Extension
Cornell Vegetable Program