

Welcome to the  
2<sup>nd</sup> Annual New York Crop Research Facility Field Day

**Wednesday, August 23, 2000; 1-7 pm**  
**NYCRF, 7939 Bank Street Road, Batavia, New York**

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- 1 pm Registration, DEC and CCA credit sign-up begins at NYCRF office. Pick up chicken BBQ tickets at registration desk.**
- 1:15 Control of Stewart's Wilt in Sweet Corn** – *Lee Stivers, NYCRF; Tom Kuhar, Dept. Entomology, Cornell; Don Cline, Gustafson; Dick Ackerman, Bayer*
- 1:35 Fresh Market Sweet Corn Varieties** – *Chuck Bornt, CCE Lake Plains Vegetable Program*
- 1:50 Field Corn Hybrid Testing to Help You Choose the Best**– *Bill Pardee, SCAS, Cornell University; and Nate Herendeen, CCE NWN Y Dairy, Livestock and Field Crops Program*
- 2:20 Sweet Corn Yield Enhancement Trial** – *Alan Erb and Arlie McFaul, CCE Lake Plains Vegetable Program*
- 2:45 Snap Bean Yield Enhancement Trials** – *Lee Stivers, NYCRF; and company representatives*
- 3:00 Screening New Insecticides for Snap and Dry Beans** – *Lee Stivers, NYCRF and Tom Kuhar, Dept. Entomology, Cornell*
- 3:30 Snap Bean Variety Evaluations: Standard Classes and Specialty Types** – *Rich Maloney, Asgrow Vegetable Seeds; Arlie McFaul, CCE Lake Plains Vegetable Program*
- 4:00 Snap and Dry Bean Weed Control** – *Andy Miller, Dept. Horticulture, Cornell University*
- 4:15 Kraut Cabbage Variety Trial** – *Lee Stivers, NYCRF; and Steve Reiners, Dept. Horticulture, Geneva*
- 4:30 Cabbage Worm Control with Confirm and Ketch** – *Greg Comeau, Rohm and Haas*
- 4:45 Cover Crops for Improving Soil Structure** – *Lee Stivers, NYCRF*
- 5 pm Chicken BBQ dinner**

# Cover Crops for Improving Soil Structure

Mammoth Red Clover 10 lbs/acre, 5/4	Sudangrass 50 lbs/acre 7/12		Buckwheat 60 lbs/acre 7/12	No Cover Crop
Mammoth Red Clover 15 lbs/acre, 5/4				
Medium Red Clover 10 lbs/acre, 5/4				
Medium Red Clover 15 lbs/acre, 5/4				

- soil quality important issue for vegetable production
- over-seeding clover into wheat is a common practice
- using wheat as a cover crop is also common
- comparing medium and mammoth red clover, at two different seeding rates, broadcast into wheat crop in May
- sudangrass and buckwheat drilled in July

# NEW YORK CROP RESEARCH FACILITY

A PROJECT OF THE NEW YORK VEGETABLE RESEARCH COUNCIL AND ASSOCIATION

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## Welcome to the 2001 Processing Vegetable Twilight Meeting

*Sponsored by Cornell Cooperative Extension Lake Plains Vegetable Program,  
Cornell University, and the NY Crop Research Facility  
July 12, 2001*

### Program Agenda:

- 5:30 Welcome and Introductions
- 5:45 Processing Vegetable Weed Control Updates  
*Robin Bellinder, Cornell University, Ithaca*
- 6:15 Seed Treatments for Seed Maggot Control  
*Lee Stivers, NYCRF*  
*(New on board program - Don't know)*
- 6:30 Variety Selection and Cultural Practices for Peas  
*Arlie McFaul, LPVP; Rich Maloney, Asgrow Veg. Seeds* → *Maloney*
- 7:00 Early Season Phosphorus Release in Snap Beans  
*Thomas Björkman and Steve Reiners, NYSAES, Geneva*
- 7:15 Cover Crops for Soil Quality Remediation  
*Alan Erb, LPVP; Lee Stivers, NYCRF*
- 7:30 Refreshments, Open Discussion and Adjournment  
*Speakers and Participants*

1.5 DEC Recertification Credits

## Cover Crops for Remediating Compacted Soils

supported by USDA Sustainable Agriculture Research and Education (SARE) Program

Jar Number	Plot Rotation (fall 99 - summer 01)	Biomass Inputs, tons dry matter/acre			
		Jul-00	Oct-00	May-01	Total
1	fallow-fallow-field corn				0
2	wheat-volunteer wheat-fallow		2.7		2.7
3	wheat-medium red clover-clover regrowth	1.8	4.6	4.8	11.2
4	wheat-buckwheat-hairy vetch-sweet corn	3.8	1.4	3.8	9
5	wheat-buckwheat-rye+hairy vetch-fallow	3.8	0.2	7.2	11.2

## **Cover Crops for Remediating Compacted Soils**

Lee Stivers, NYCRF Manager

Over the past year and a half we have conducted a demonstration project at the NY Crop Research Facility on cover crops for remediating compacted soils. We were also interested in comparing on a large-plot scale some of the cover cropping options most feasible for processing vegetable growers. Most processing vegetable growers in the state produce wheat as a rotation crop or a cover crop. Many frost-seed clover into the standing wheat in very early spring, and leave the clover to grow past wheat harvest to the following spring. Often, however, frost seeded clover does not “catch”, or produce a good stand. We specifically wanted to look at potential ways to improve stand establishment and clover growth, and to compare this frost-seeded clover with other cover crops.

The cover crops demonstration was established on approximately 10 acres at NYCRF. The soils in this field had been heavily cropped, primarily in turf, for many years. There was a standing crop of wheat in the field when the project started in March, 2000. Large (3/4 acre) plots were established with different combinations and timings of the following cover crops: frost-seeded mammoth red and medium red clover, sudangrass, buckwheat, yellow blossom sweet clover, rye, and hairy vetch. We took samples periodically to assess organic matter inputs of different cover crops.

Results of cover crop biomass inputs are shown in Tables 1 and 2, below.

**Table 1: Biomass samples of cover crops, 2000-2001.**

Date	Plot Number	Cover Crop	Dry Matter tons/acre
7/27/00	6	mammoth red clover, low	1.7
7/27/00	7	mammoth red clover, high	1.8
7/27/00	8	medium red clover, low	1.5
7/27/00	9	medium red clover, high	2.5
8/25/00	4	buckwheat	3.8
8/31/00	2	sudangrass	3.8
9/28/00	2	sudangrass	2.0
10/31/00	4a	vetch	0.2
10/31/00	4b	rye and vetch	1.4
10/31/00	5	wheat stubble	2.4
10/31/00	5	volunteer wheat	0.3
10/31/00	8	medium red clover low	3.9
10/31/00	8	wheat stubble	1.5
10/31/00	9	medium red clover high	3.3
10/31/00	9	wheat stubble	1.3
5/21/01	4a	vetch	3.8
5/21/01	4b	rye and vetch	7.2
5/21/01	8	medium red clover low	4.0
5/21/01	9	medium red clover high	4.8

**Table 2: Overview of biomass inputs provided by several cover crop combinations, 2000-2001.**

Plot Number	Plot Rotation (fall 99 - summer 01)	Biomass Inputs, tons dry matter/acre			Total
		Jul/Aug 2000	Sept/Oct 2000	May 2001	
1	wheat-fallow-fallow-field corn	0	0	0	0
2	wheat-sudangrass-field corn	3.8	2.0	--	5.8
5	wheat-volunteer wheat-fallow	--	2.7	--	2.7
9	wheat-medium red clover-clover regrowth	1.8	4.6	4.8	11.2
4a	wheat-buckwheat-hairy vetch-sweet corn	3.8	1.4	3.8	9.0
4b	wheat-buckwheat-rye+hairy vetch-fallow	3.8	0.2	7.2	11.2

We observed the following in conducting this demonstration:

- Medium red clover survived the winter of 2000-2001 (relatively severe) better than mammoth red clover.
- Increasing the seeding rate of medium red clover from 10 lbs./acre to 15 lbs./acre increased dry matter production in both the first and second years.
- Spring frost-seeding of clovers into wheat was much more successful than fall seeding onto bare ground.
- In a single year, sudangrass can produce as much dry matter as a well established clover stand, but in less time. Plot 2 (sudangrass) produced approximately as much biomass from July through September, 2000, as did plot 9 (red clover) from March through October.
- Over the course of the entire year and a half, no cover crop combination tested in this demonstration out-produced a good stand of medium red clover (plot 9).
- It took a combination of three annual cover crops (plot 4b), requiring considerably more tillage and planting passes, to equal the dry matter production of a good stand of medium red clover.
- Groundcover was constant with the frost-seeded clover plantings. Annual cover crops, while allowing more flexibility for integrating with cash crops, always required tillage and a period in which the soil was exposed.
- Hairy vetch planted alone did not provide a great deal of groundcover over winter. However, it survived the tough winter very well and produced a considerable amount of spring re-growth.
- In this demonstration, the rye greatly out-competed the vetch when they were grown in combination. While vetch seedlings were quite evident in this plot in the fall, during the spring re-growth the rye greatly dominated the plot. This is surprising since the conventional wisdom is that in poorer soils, vetch will compete better with rye since it is not dependent on soil nitrogen.
- It is extremely difficult to manage a rye cover crop if it has been allowed to head-out before incorporation. Even after bush-hogging the rye in late May, we were unable to get it properly incorporated into the soil well enough to plant anything back into the plot. The extreme lack of rainfall made the situation worse, and that section of the plot was left fallow over the summer of 2001.
- Relying on a winter vetch cover crop and cultivation alone did not provide adequate weed control for sweet corn during the dry summer on this poor soil. Early in the season, weed control in the sweet corn looked very good considering there had been no herbicide applications. However, the lack of rainfall resulted in such poor sweet corn growth that weeds had gotten completely out of control by August.

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