A Sustainable Approach to Working with Vegetable Farmers

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Cooperative Extension System
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Northeast SARE Outcome Statement

Agriculture in the Northeast will be diversified and profitable, providing healthful products to its customers; it will be conducted by farmers who manage resources wisely, who are satisfied with their lifestyles, and have a positive influence on their communities and their environment.
Rule #1: It is all about the growers!
Small, diversified farms with more rocks than soil!

Fred Monahan, Shelton, CT
Rule #2: Never be afraid to admit that you don’t know the answer.
Rule #3: Know when it is time to leave!
Rule # 4: the best research ideas come from the growers
Perimeter trap cropping involves planting a more attractive crop so that it completely encircles and protects the main cash crop like fortress walls.

“Perimeter: a boundary strip where defenses are set up.”

Webster’s Dictionary
PTC functions by intercepting and concentrating the pest population(s) in the border area where they can be killed, thus preserving natural enemies and reducing damage and disease spread in the main cash crop.
Think of the trap crop as a poisoned fence!
Perimeter Trap Crop around peppers

Futtner Farm, E. Hartford, CT

pepper maggot

eggplant

cherry peppers
One CT grower had 100% of his eggplant riddled by pepper maggots for several years, despite multiple full-field sprays. He marketed 100% of his crop using PTC and never sprayed the eggplant!

“I highly recommend PTC, especially for big growers...you’re crazy not to do it!”

Jim Futtner, E. Hartford, CT
Cucumber beetles

Perimeter Trap
Cropping for Cucurbits

Summer squash
Cucumbers
Winter squash
Melons

Bacterial wilt
Sustainable Ag Grant (SARE)

2001-2005 Summer Squash PTC

• variety trials to find “best” trap crop
• small-plot PTC studies at research farms
• trials in commercial fields

2003 – 2005 Cucumber/Butternut PTC

• small-plot PTC studies at research farms
• trials in commercial fields
Best Trap Crop

Trap crop cannot be a disease reservoir: or beetles that make it through perimeter to feed on main crop will vector disease (bacterial wilt).
Cucumbers

Blue Hubbard
Pinecroft Farms, Somers, CT

Blue Hubbard around cucumbers
Always more beetles & damage in the trap crop than unsprayed centers
Percent Defoliation on summer squash in center of plots 2004

- All SS (control):
  - Percent Defol/Plant: 25 (a)

- All SS (sprayed):
  - Percent Defol/Plant: 5 (b)

- PTC:
  - Percent Defol/Plant: 5 (b)
Beetles on summer squash in center of plots 2004

- **A**: all SS (control)
- **b**: all SS (sprayed)
- **b**: PTC

**Live beetles**

Number of beetles/plant
Botticello Farm, Glastonbury, CT

Blue Hubbard around summer squash & zucchini
Blue Hubbard around butternut & acorn squash
Somers, CT
Giant pumpkins around pumpkins

Randy Blackmer, N. Grosvenor Dale
“It blew my mind to see the beetles flock to the perimeter rows!”

Randy Blackmer, N. Grosvenor Dale, CT
President, CT Farm Bureau

“I can not even get a crop of cucumbers on my farm without PTC!!!”

Nelson Cecarelli, Northford, CT
2003 Results on 6 Commercial Farms (Blue Hubbard around Cucurbitis)

- All growers said PTC reduced insecticide use (97%) (2.2 full-field sprays vs. 1.9 perimeter sprays).

- All said PTC provided superior pest control (saved 18% summer squash & 31% cucumber crop).

- All but one said they also saved time/money using PTC and found the new system simpler to use than full-field sprays (saved $51-$3,810/acre).

- Simplifies monitoring, spraying, picking/marketing

- All said PTC had lower impact on the environment
Pesticide-free produce

Perimeter trap cropping, Berlin, CT

Blue Hubbard

Steve Bengtson, Cold Spring Brook Farm
SARE Partnership Grant for Deep Zone-Tillage

Nelson Cecarelli, Northford, CT
Sometimes know as vertical-tillage
Eliminates soil erosion

Eliminates water pooling & soil crusting/cracking
June 2008 Twilight Meeting
Karen Scott recently talked about her CSA at the CT Veg & Small Fruit Conference.
Nelson Cecarelli speaking at Deep Zone-Tillage & Soil Health Conference
The eggplant thrives in heat and sunshine, and the short, warm summers in the Northeast are perfect for growing eggplant. In Northford, Conn., Nelson Cecarelli grows 3 to 4 acres of eggplant each year. He mostly grows the Classic, Night Shadow and Santana varieties that produce the desirable ovoid shape and dark purple color. He also grows a few of the long and slender Italian or Oriental varieties.

In New England, eggplant is generally planted in late May and early June when there is no longer any threat of frost. Cecarelli starts all of his plants from seed in a greenhouse and transplants the seedlings when they’re 3 to 4 inches high. Because much of Cecarelli’s farmland is sloping, he finds it necessary to plant the eggplants in raised beds covered with black plastic. The plastic is used to both keep the soil warm and help retain the moisture that’s still in the soil at the time of planting. Drop irrigation lines beneath the plastic water the plants during the later part of the growing season as well as provide the ability to add nitrogen if necessary. Cecarelli limits fertilizing to just potassium and nitrogen; there are significant levels of phosphorus in the soil that will last for generations. Prior to planting,
Growers teaching students

Steve Bengtson, Berlin, CT

Gordon Burson, Somers, CT