

# A Sustainable Approach to Working with Vegetable Farmers

T. Jude Boucher  
University of Connecticut  
Cooperative Extension System



# 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!**





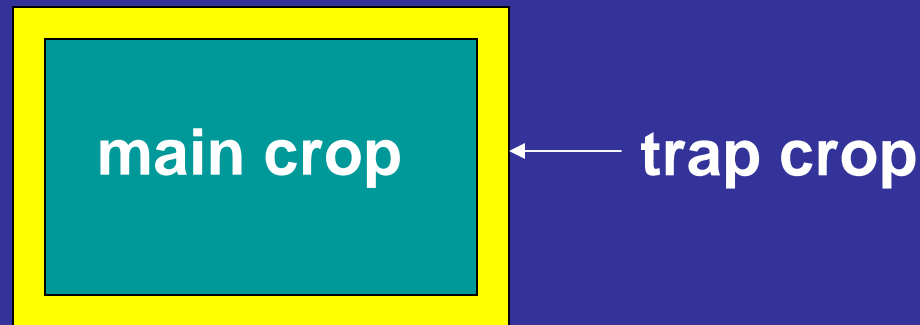
# University of Connecticut Plant Science Research Farm



**Rule # 4: the best research ideas come from the growers**



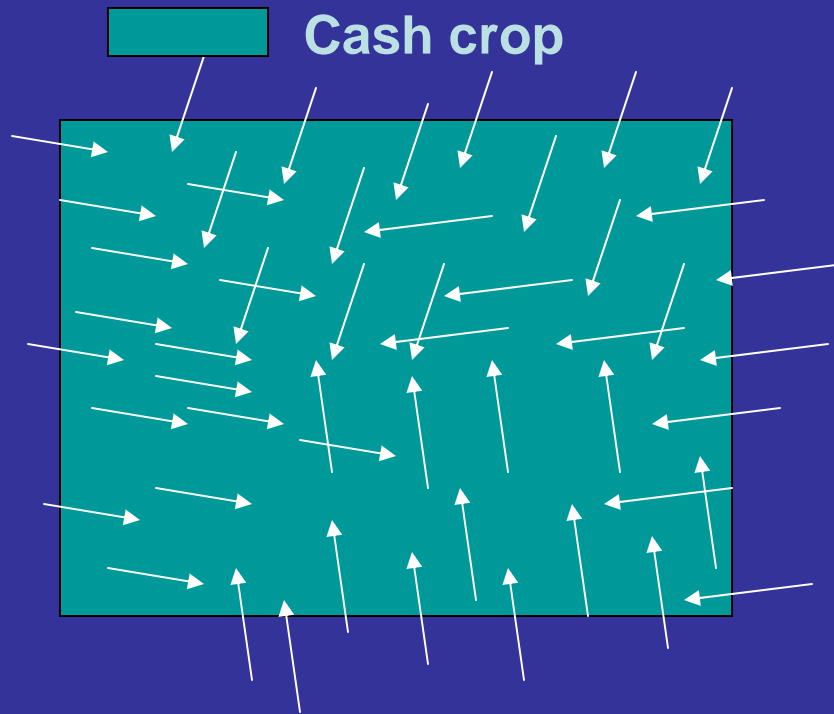
*Perimeter trap cropping* involves planting a more attractive crop so that it completely encircles and protects the main cash crop like fortress walls.



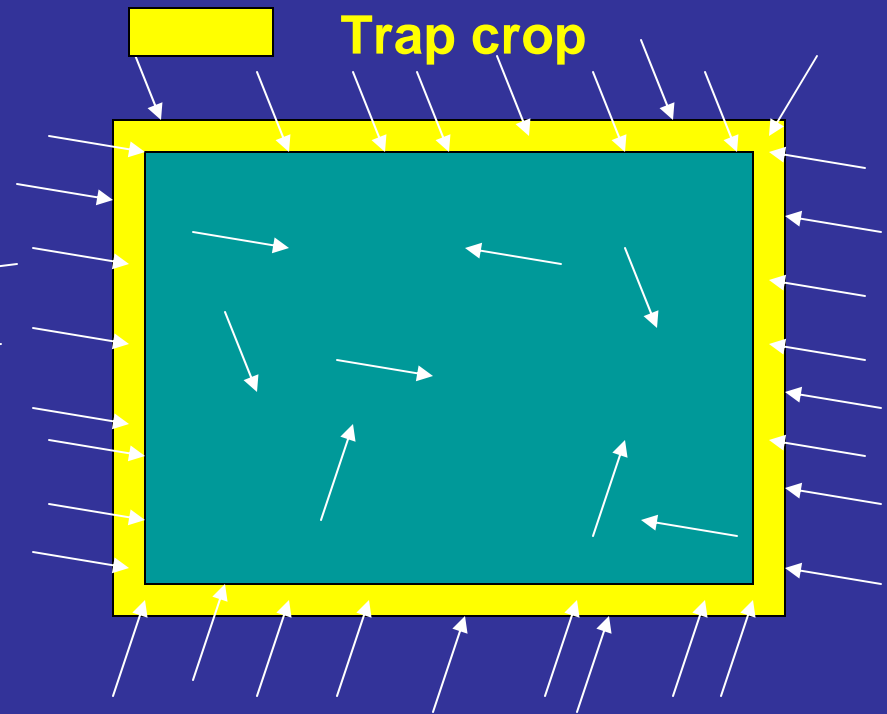
“Perimeter: a boundary strip where defenses are set up.”

*Webster's Dictionary*

## Conventional Planting



## Perimeter Trap Cropping



**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).

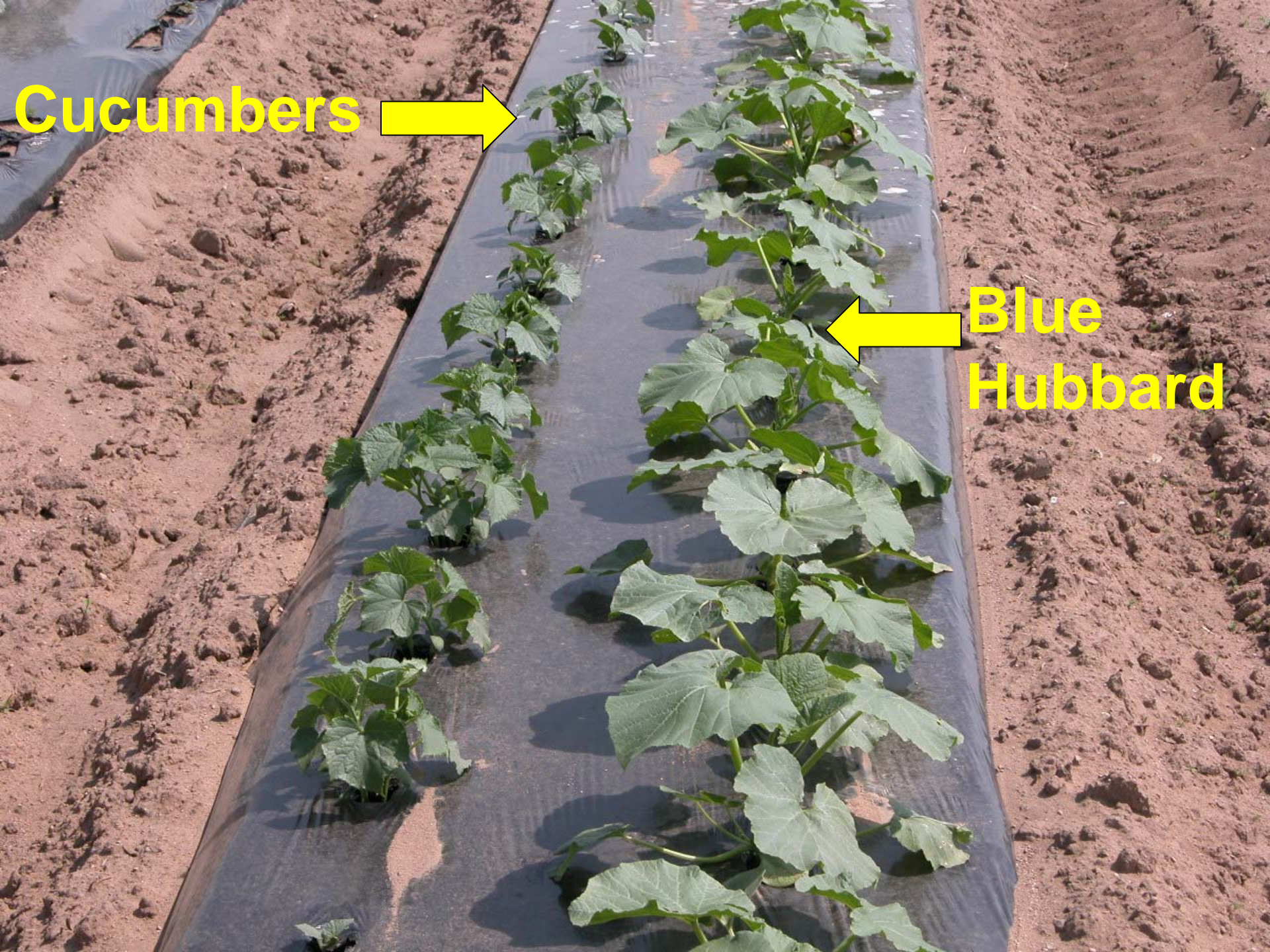




**Cucumbers**



**Blue  
Hubbard**





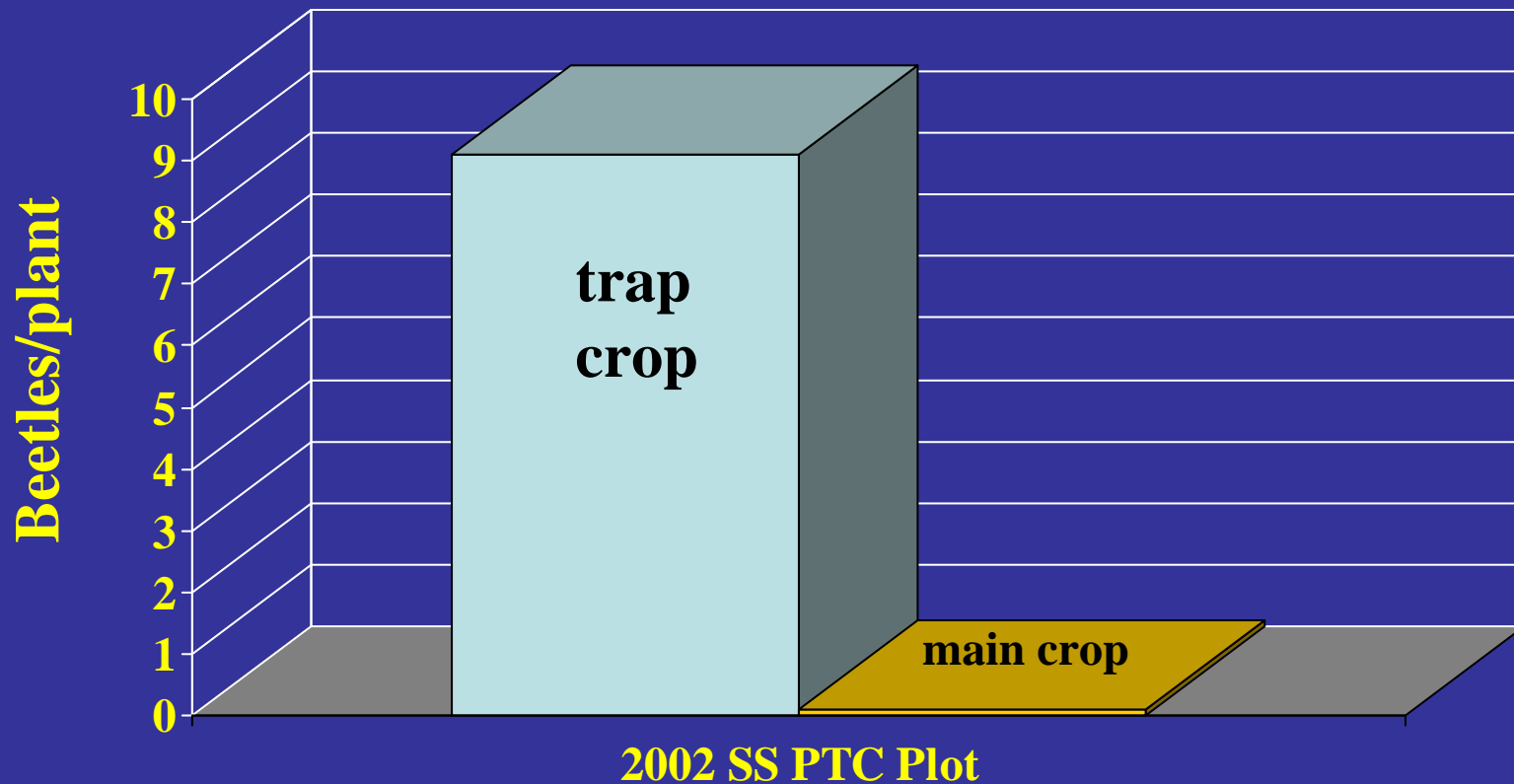
# **Pinecroft Farms, Somers, CT**

**Blue Hubbard around cucumbers**

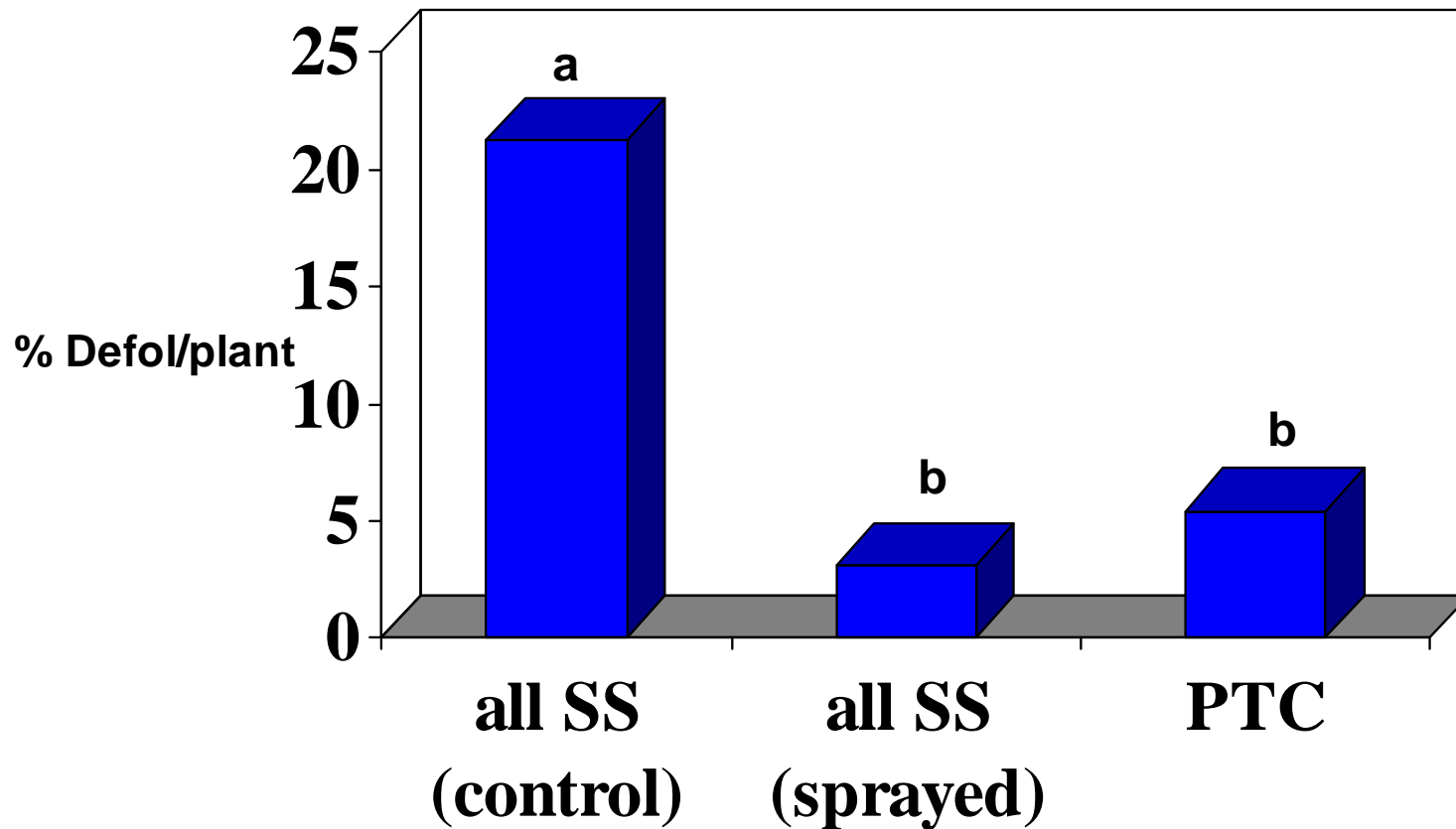




# Always more beetles & damage in the trap crop than unsprayed centers

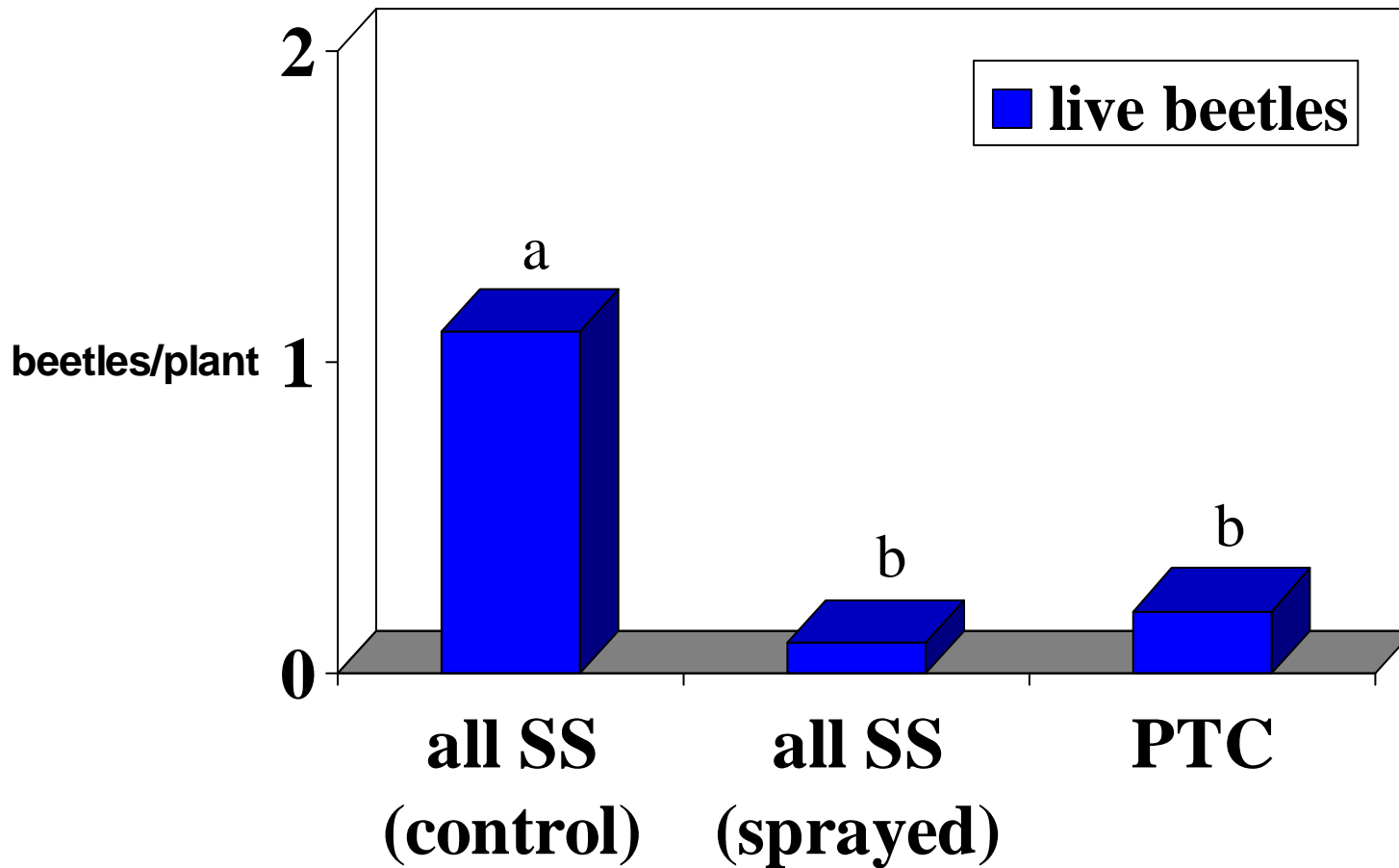


# Percent Defoliation on summer squash in center of plots 2004





# Beetles on summer squash in center of plots 2004





PTC



Control







# **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 Cucurbits)**

- **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





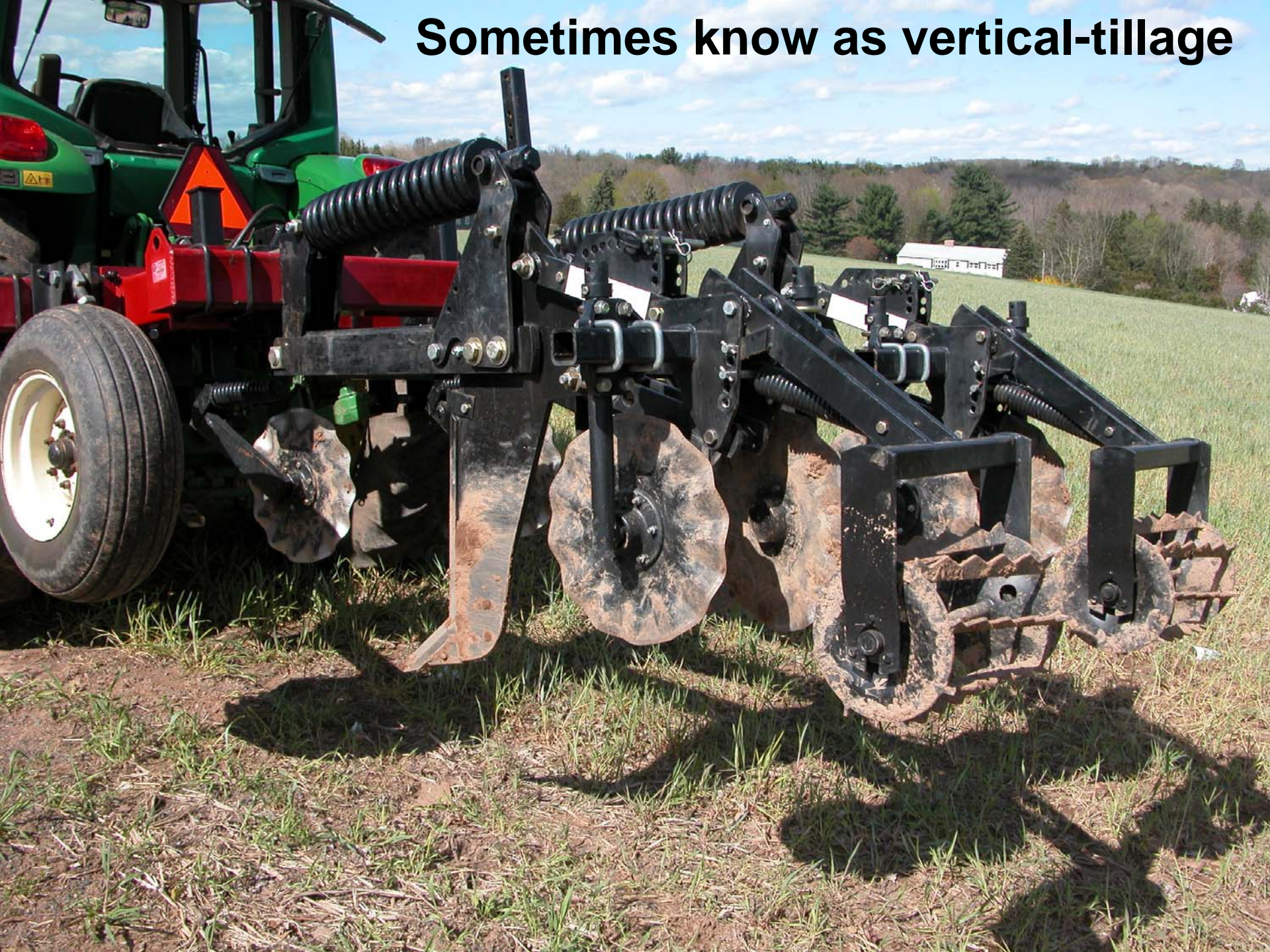
# SARE Partnership Grant for Deep Zone-Tillage

Nelson Cecarelli, Northford, CT





**Sometimes know as vertical-tillage**





**Eliminates soil erosion**



**Eliminates water pooling  
& soil crusting/cracking**



**Tom Scott, E. Lyme, CT**





# June 2008 Twilight Meeting





# Karen Scott recently talked about her CSA



CT Veg & Small Fruit Conference



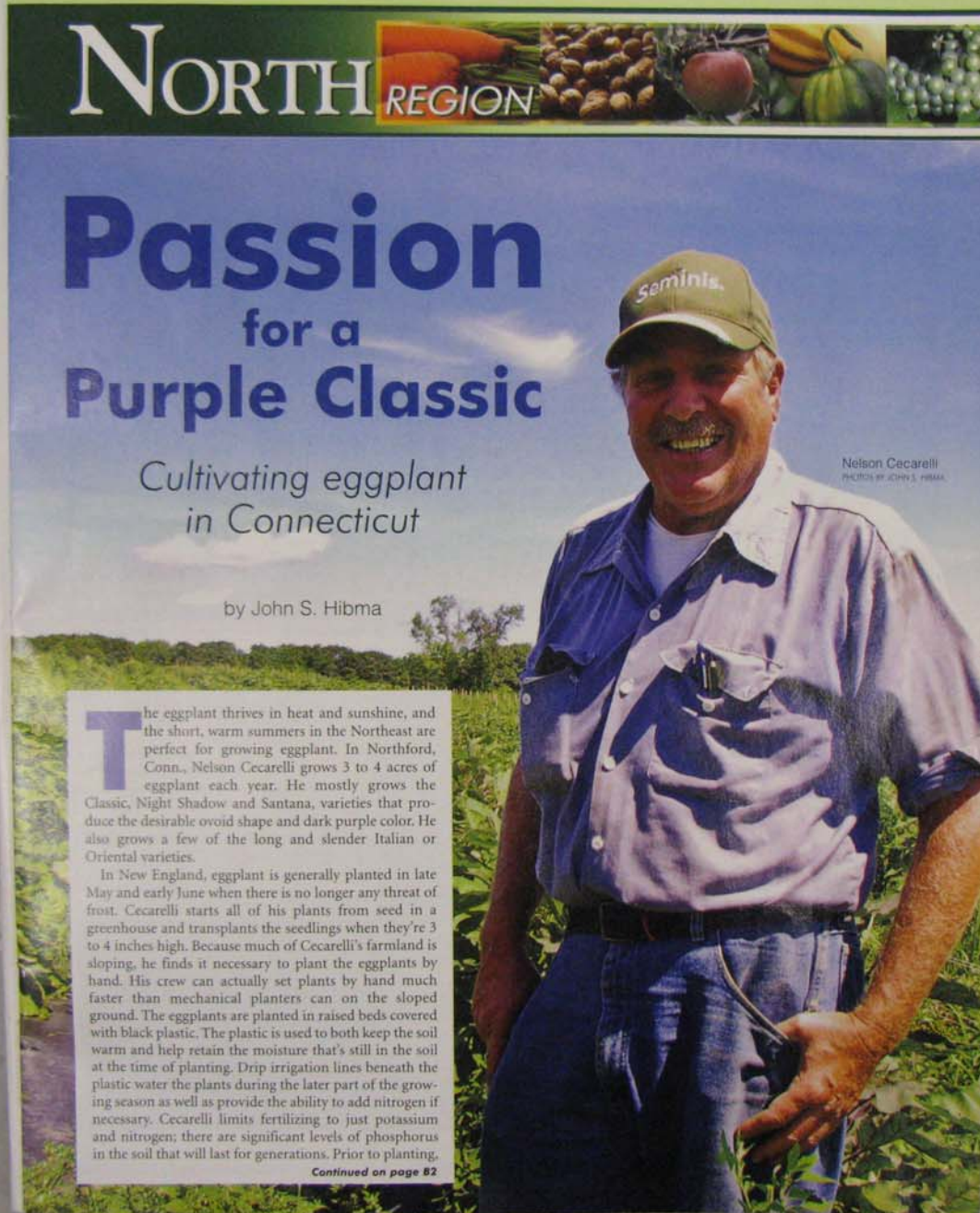


# Nelson Cecarelli speaking at Deep Zone-Tillage & Soil Health Conference





# Nelson Cecarelli: "Cover Boy" for "Growing" magazine (2009)



The magazine cover features a photograph of Nelson Cecarelli, a man with a mustache wearing a green baseball cap with the word "seminits." and a blue short-sleeved button-down shirt, standing in a field of eggplants. The background shows a clear blue sky and a line of trees in the distance.

**NORTH REGION**

# Passion for a Purple Classic

*Cultivating eggplant  
in Connecticut*

Nelson Cecarelli  
PHOTOS BY JOHN S. HIBMA

by John S. Hibma

**T**he 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 by hand. His crew can actually set plants by hand much faster than mechanical planters can on the sloped ground. The eggplants are planted 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. Drip 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,

*Continued on page 82*



# Growers teaching students

**Steve Bengtson,  
Berlin, CT**



**Gordon Burson,  
Somers, CT**



Jamie Jones, Shelton, CT

Dean Weidemann

Provost Nicholls





Terry Jones, Shelton, CT



BE  
GOOD  
TO THE  
LAND AND  
THE LAND  
WILL BE GOOD  
TO  
YOU