



# SEASON CREATION

## FOR SCHOOL GARDEN PROGRAMMING



January 15, 2015  
Amesville, OH

# History: Timeline



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## Green Edge Organic Gardens

**2004:** Green Edge Gardens, a certified organic farm, starts out with 4 employees and one greenhouse, which had been previously used to grow landscape

2004



**2004:** We sell our produce at the Athens Farmer's Market and to restaurants in Athens and Columbus

2005

**2005:** Packing room and 2 new greenhouses constructed

**Nov '05:** Microgreen house built



2006

**2006:** Green Edge has 8 employees and 3 interns

**May '06:** Green Edge acquires the fresh mushroom division of Mushroom Harvest Inc.



2007

**2007:** Green Edge has 8 employees and 3 interns

**Dec '06:** Athens Hills CSA begins, with Winter '07 CSA: 46 full or half share members



2008



**Winter '08 CSA:** 85 full or half share members

2009

**Winter '09:** Bread, milk, and fruit introduced into the CSA as partner items



**2009:** Green Edge has 10 employees and 3 interns

2010

**Summer '10:** Integration Acres cheese share introduced into

**Winter '09 CSA:** 105 full or half

**Fall '10:** A new drainage system is excavated in the fields

**Winter '10 CSA:** 143 full or half share members

2011

**2011:** Green Edge has 11 employees and 3 interns



**Winter '11 CSA:** 157 full or half share members

**April '11:** Equipment shed built

**Fall '11:** 2 new greenhouses constructed, for a total of 10 houses devoted to vegetable production

2012

**March '12:** Green Edge has 13 employees, and will have 4 full time interns beginning in April

**Fall '12:** New drainage system added to 6 greenhouses



**Winter '12 CSA:** 193 full or half share members



**Winter '13:** CSA expands to Belpre,

**Winter '13 CSA** provided 194 full shares each week, with over 260 households participating



2013

**Fall '12:** Green Edge partners with a local nonprofit, Rural Action, to offer a series of educational



# Infrastructure: Greenhouses



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Considerations:

- Orientation: narrow end faces prevailing wind
- Crowning the soil to elevate the site
- Amending the soil
- Drainage system



# Infrastructure: Greenhouses



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**Provides Natural Self-Ventilation:**  
Oriented so narrow end faces prevailing wind;  
the lower vent doors are on west side; upper vent doors on the east side



# Infrastructure: Covering Systems



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Between November 2010 and April 2011, covering took place on about 123 days .

- We uncover the plants in the morning unless the temperature is 10°F or less and it is severely overcast.

**3 types of covers:** fabrics (.90 oz, 1.25 oz/SqYd.) & plastic, each applied separately and removed manually.

- When the temperature is going to drop below 27°F, cover with fabric.
- When the temperature is going to drop below 25°F, cover with fabric and plastic.

**Transitioning our System:** Old method: Two employees per greenhouse (uncover time: 90 worker minutes, cover time: 60 worker minutes)

New system: 1 person uncovers in 6 minutes, or 2 people in 1 minute (time savings on uncovering: 70 worker minutes), 1 person, 1 minute per house to cover (time savings 50 worker minutes)



Sun's Out: Uncover



No Sun: Cover Up

# Infrastructure: Water



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Water moves from the ponds to the pump house and UV filter



Then to the irrigation tanks and through hoses into greenhouses





# Infrastructure: Start House



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- A heated house, uses hydronic heat system, powered by a hot water tank
- Closed circuit heating system, operating at 20# pressure, using a small, circuit pump (A/C)
- More efficient way to heat, as opposed to heating air
- The hot water hoses lay on tables, above a layer of insulation; trays sit directly on the hose; water temperature is approximately 140 degrees



# What is a “Low Tunnel”?



- Like a high tunnel, a low tunnel is another way to extend the growing season.
- Works to trap heat within the tunnel, allowing hearty plants to continue growing.
- Easily built with easily accessible materials.





# Benefits of a Low Tunnel



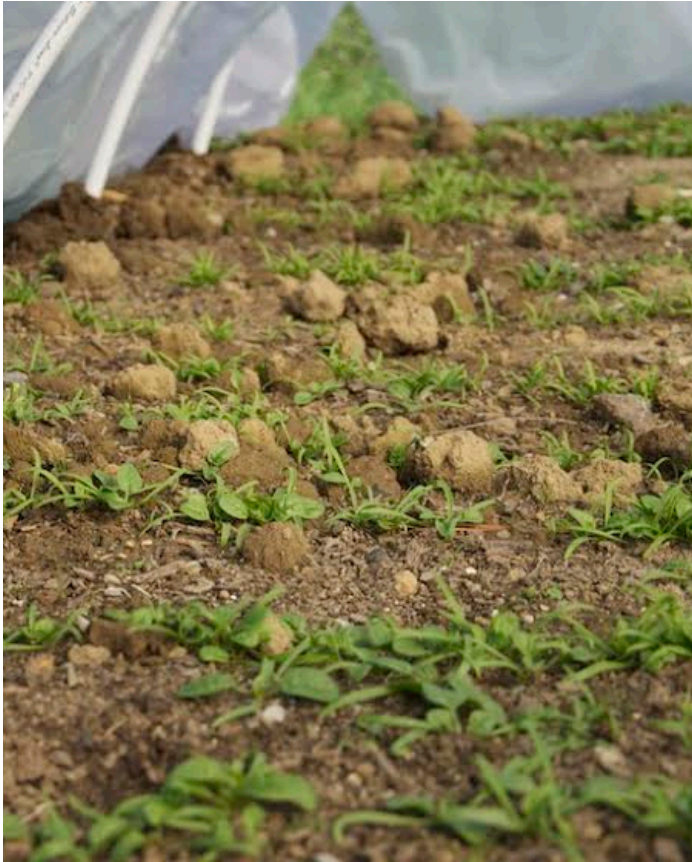
- Cost & space effective
- Year round growing
- Easy to maintain
- Winter growing means teaching opportunities during school year
- Fresh food

# Low Tunnel Costs



Item	Purpose	Cost	Number per Unit	Total Cost
10ft, 1/2" PVC Pipe	bent into ribs for hoop house	\$1.81	2.5, cut into 5ft lengths for 5 ribs	\$4.25
10ft, 1/2" steel rebar	steaks that hold PVC in ground	\$5.20	0.5, cut into 6" lengths	\$2.60
Plastic Drop Cloth, 9ft x 12ft, 2mil	Plastic cover for hoop house	\$2.98	1, with excess.	\$2.98
2" x 4" x 8' studs	holding down the plastic	\$3.18	1, split down the middle	\$3.18
Duct Tape, Staples, and small hardware	connecting Plastic			Less than \$1.00
			total per hoop house	\$14.00





# Raised Bed Costs

Item	Purpose	Cost	Number Per Unit	Total Cost
2" x 6", 8ft lumber	framing material	\$5.18	3, two whole, one spit-up	\$15.54
3" wood screws, 25 pack	connecting the wood frame pieces	\$7.80	16 of the 25	\$5.00
				\$20.00

# Classroom References and Further Reading

- USDA Farm To School “School Gardening” Toolkit (included)
- Johnny’s Low Tunnel Manual (For more ideas, and in-depth technical explanations) (Included)
- PSU Extension Resources
- University UMASS Amherst Resources

