

## INCREASING FRESH PRODUCE AVAILABILITY FROM LOCAL SOURCES

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In 2012, several partners came together for a unified mission, “**to both educate and provide locally grown fresh produce**” to citizens of the Eastern Shore of Virginia (Fig. 1). The best way to fight hunger and provide locally sourced fresh vegetables is to demonstrate proper production practices and teach citizens where they can find information that they need to be successful in their gardens.

The Foodbank on the Eastern Shore Garden Demonstration Project is taking a two stab approach (Fig. 2) using:

1. Garden beds that can be implemented by any person that has even the smallest piece of land, and
2. A hoop-house that is a passively ventilated system that can raise soil and air temperatures; which allows for earlier planting in the spring and an extended growing season in the fall.

Both of these systems have their benefits and can produce substantial fresh produce on even the smallest acreage in differing times of year (Table 1).

**Garden Beds:** Garden beds can be placed virtually anywhere. In bed systems, the land is simply tilled, amended with fertilizer, planted, and pests controlled with integrated pest management (IPM). In most cases, it is okay to simply use the soil that is already in your yard. A raised bed with purchased soil is only necessary if you are implementing your garden in a location where the soil is not suitable for growth, such as an old driveway. No matter what soil is used for planting, the most important aspect of a garden system is proper soil fertility. Proper soil fertility starts with a soil test; which is available from the Virginia Tech Soil Testing lab (<http://www.soiltest.vt.edu/>) or from numerous private labs. Contact your local Extension office for a soil test kit and ask them how to properly take your soil sample. Your soil test results are only as good as your sample, so do a good job



Fig. 1. Volunteers planting in Spring 2013.



Fig. 2. Raised garden beds and hoop-house.

taking the sample. The soil test results will come with exact instructions for the amount of each nutrient and lime that you must apply for optimal yields. **DO NOT APPLY MORE LIME OR FERTILIZER THAN RECOMMENDED!** Currently, over 33% of the home garden samples ran at the Virginia Tech lab has a pH that is too high from over-liming; which causes numerous nutrient deficiency problems to occur. If you are going to use manure, be aware of special food safety precautions that you should take to avoid vegetable contamination with pathogens (VCE Publication FST-39NP; [http://pubs.ext.vt.edu/FST/FST-39/FST-39NP\\_PDF.pdf](http://pubs.ext.vt.edu/FST/FST-39/FST-39NP_PDF.pdf)). After amending your soil, publication 426-480 from Virginia Cooperative Extension (<http://pubs.ext.vt.edu/426/426-480/426-480.html>) can guide you in crop and variety selection with planting. For the remainder of the growing season, use proper irrigation techniques (VCE Publication 426-322; <http://pubs.ext.vt.edu/426/426-322/426-322.html>) and IPM to maintain your garden. With IPM, only herbicides, insecticides, and fungicides are used if necessary. In most small bed systems, weeds can simply be controlled by pulling and tillage. However, insects and fungicides may require an organic or inorganic pesticide application. Numerous publications with proper information for pesticide control and proper IPM techniques are available from Virginia Cooperative Extension online (<http://pubs.ext.vt.edu/>) or from your local Extension office.

**Hoop-House:** A hoop-house (or high-tunnel) is a tool many local gardeners are beginning to implement to extend their growing season by warming the air and soil faster in the Spring and keeping them warmer longer into the Fall, and to help deal with disease pressure by excluding rainfall and controlling water with irrigation. Though available in various configurations, these structures generally have retractable side walls and removable end walls to ventilate the structure. Nearly all have translucent polyethylene sheeting that covers the entire structure that lasts three to five years. Most do not have a heating source and rely on solar energy for heating in cooler seasons. Hoop-houses are semi-permanent structures and once erected, are not easily moved. General hoop-house production practices regarding soil testing and fertility follow the same practices as any “outdoor” crop system. However, we generally recommend that a fraction of the nitrogen and potassium fertilizer be mixed into the soil (25 to 50%) with the remainder being applied as fertigation; which is fertilizer mixed into the irrigation water using an injection system (VCE publication 430-100; <http://pubs.ext.vt.edu/430/430-100/430-100.html>). Similar IPM tactics that are used in greenhouse systems are used in hoop-houses for disease and insect control.



**Fig. 3. Tomatoes strung inside the hoop-house.**

All proceeds from these two systems in the demonstration garden site will be used by the Foodbank on the Eastern Shore, a branch of the Southeastern Foodbank, for distribution to their 14,000+ unduplicated clients annually. More importantly, volunteers and education events offer hands-on experience working in the garden and offer the opportunity for life-lessons that can be transferred to the individual's own situation. Additional grant funding will also be used to educate about the significant nutritional benefits of eating fresh produce. For more information regarding the need for local food sources and hunger in Virginia, contact your local food bank branch or navigate to: <http://www.foodbankonline.org/WhoWeHelp/Hunger%20Study.aspx>.

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**Fig. 4. Youthworks volunteers from a harvest day.**

**Table 1. Example rotation schedule for hoop-house and outside garden beds for the Eastern Shore of Virginia. Notice the continuous food production scheme with higher value crops being produced in the hoop-house.**

Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
<b>Hoop-house planting schedule.</b>											
Soil sample											
				Cucumbers				Cucumbers			
				Peppers				Peppers			
				Tomatoes				Tomatoes			
Broccoli											Broccoli
Collards											Collards
<b>Outside garden beds planting schedule.</b>											
Soil sample									Broccoli		
									Collards		
									Kale		
					Cucumbers						
					Peppers						
					Squash						
					Tomatoes						
					Zucchini						
					Green beans						
					Green beans						
					Green beans						
				Broccoli			Green beans				
				Collards			Green beans				
				Kale			Green beans				