

Winter Hoop House Design and Fabrication

As I walked around the HPCG this past holiday weekend, my thoughts focused on how successful and productive our gardens have been this summer and fall. All of the hard work and caretaking have paid off in delicious, healthy produce for our home tables as well as those of the families served by the Holy Cross food pantry. With the approaching days of winter, prospects for fresh veggies over the next few months seem quite slim. Many of the plots have successfully maintained fall crops, in part due to the favorable weather we have had and the foresight of each gardener to plant in August or early September. Maintaining some fall greens like lettuce, spinach, and chard while also getting a leg up on spring start-ups seems like a great idea. Last season, several of our gardeners had success with hoop supported plastic "greenhouses" over their plots. In this article, I would like to outline this process for any other interested gardeners, and touch on the supplies needed, the costs, and the basic techniques.



Fig. 1

Starting with the basic plot size of 4' by 10', my son, Dale, and I drew up our plans for a greenhouse with five hoops per plot spaced evenly across the length of 10'. The design included a retractable cover for periods of warm weather. This resulted in the following supply list:

Supply List		
Qty	Item	Cost
5	10' sections of ½" schedule 40 plastic pipe	\$15
10	¾" metal pipe retainer clips	\$1.50
20	1½" galvanized screws	\$2
2	pieces of 1x2" wood 10' long	\$5
	Heavy duty stapler and sharp point staples	
	4 to 5 mil clear/opaque plastic sheet, 10'x15' min. size	\$12-15
	Garden twine or nylon garden string	
12	one gallon Ziploc freezer bags or substitutes	\$2
1	bag of play sand	\$5

Tools required for this project are a tape measure, marking pencil, a small hacksaw, hammer, scissors, and a cordless power screwdriver.

Phase One

Locations were measured and marked at 2.5' from each end and at the center, or 5' point. The pipe retainer clips were positioned and centered at each mark about an inch or so below the top edge of the wood frame, on the **inside** of the frame to gain the most resistance to the bending force on the pipe hoop. Two screws were placed for each clip into the wood frame and this is repeated for each of the 10 clips.



Fig. 2

In order to have a reasonable hoop height to work under and one that will allow adequate height for plant growth, our calculations estimated the length of pipe needed would be 105". This would allow for a smooth curvature, proper height, and some excess to permit 3-4" on each side to be pushed into the dirt below the pipe clip. The five pieces of pipe were cut and positioned in one of the clips and bent into a hoop shape and the other end inserted into the opposite clip. Both ends were adjusted by pushing evenly into the soil to produce an even curvature of the hoop. Once all hoops are in place, check the

entire group for level across the top of the hoops and adjust as needed to level these. (Fig. 2)

A supporting strut across the top of all the hoops and tied to each one can be made from any relatively smooth piece of 1x2" wood, bamboo, or sapling (a 10 ½ foot piece will allow a few inches to help draping over the end).

Phase Two

A piece of clear plastic is cut to the proper dimension and laid out flat over the hoops. Arrange to have even and adequate amounts of excess over each side of the length and width. Wrap one of the 1x2x10 pieces with a few inches of the long end of the plastic sheet and staple to the wood along the entire length, ensuring that the staples go through at least two layers of plastic. Repeat this for the other long side of the plastic and this will allow you to wrap up and store the cover around the wood pieces when opening the cover or when it is not needed over the garden plot. (Fig. 3)



Fig. 3

Phase Three

Using 12 one gallon size zip lock freezer bags (or any suitable substitute), make up sandbags to hold down edges of the plastic around all sides. Placing four bags along each length and two on each side should hold down plastic well. (Fig. 4,5)



Fig. 4



Fig. 5

This project should take the average DIY-er about 1 to 2 hrs. to complete, cost about \$40.00, and give several seasons of service before requiring major repair or plastic replacement. When in use, it should allow the gardener to continue to enjoy some nutritious crops through the winter and get an early start on spring sowing and growing. Good luck with your winter hoop garden!

- Herm