

## COMMUNITY GARDEN GUIDE SEASON EXTENSION

### HOOPHOUSES

Extending the growing season in many Great Lakes States' gardens is essential so seed can be saved and vegetables can be successfully grown. A number of season extension techniques are available to the gardener. Costs for season extension range from tens of dollars to tens of thousands of dollars, depending on the type of season extension employed.

Hoophouses are small, semi-portable structures that can be used as a small greenhouse structure for starting seedlings and for growing heat-loving vegetables. A hoophouse provides frost protection, limited insect protection, and season extension. Hoophouse structures are easily constructed and will last many years. Hoophouse dimensions can be adjusted to personal needs, but a structure 4 feet x 10 feet is recommended. These dimensions allow easy side access for weeding and allow adequate hoop arch strength relative to span. Cost of this structure is modest. A 4 foot x 10 foot Hoophouse with soil fill can be constructed for approximately \$150-\$200.



Hoophouse in use on the Bad River Indian Reservation, Odanah, WI.

## ADVANTAGES/DISADVANTAGES

### Advantages Using Hoophouses

- 1) Frost protection, 4+° F.
- 2) Above ground level allows for earlier soil warming, advancing the growing season.
- 3) Small heaters can be used to give additional frost protection.
- 4) Structures are easily constructed from readily available materials.
- 5) Hoophouses can be used to start trays of vegetable seedlings early season and then be planted with heat-loving crops that are allowed to grow to maturity.
- 6) Hoop/plastic covering can be manipulated and/or removed to control internal temperatures.
- 7) Compact size allows for season extension in backyard areas.

### Disadvantages Using Hoophouses

- 1) Relatively high cost per square foot of growing space.
- 2) Internal temperatures can rise quickly on cool sunny days and kill plants unless the plastic covering is adjusted to allow for adequate ventilation.
- 3) Hoop covering must be removed at the end of the growing season, as snow load will crush the hoops.
- 4) Plastic covering will only last 1 to 2 years unless more expensive greenhouse plastic is used.

## HOOPHOUSE SOIL RECIPE

The quality of the soil is critical to the proper functioning of a Hoophouse. The Hoophouse may be filled with topsoil that is either purchased or acquired on-site. If topsoil is used, be prepared to deal with imported weed seed that often are present in the soil. The best results can be achieved by making soil for the Hoophouse.

This recipe will fill a 4'x10' Hoophouse approximately 10 inches deep with soil.

<i><b>SOIL RECIPE</b></i>	
<u><b>Material</b></u>	<u><b>Quantity</b></u>
Medium texture sand with silt or clay fines (classifications: loamy sand, SM, SC)	1 cu. yd.
Potting Soil, 25 # bale	1/2 ea.
Organic Granular Fertilizer (5-2-4 or similar analysis Composted Chicken or Turkey Manure Fertilizer)	10#
Place sand in Hoophouse box. Add potting soil and fertilizer on top of the sand and spread out uniformly. Mix potting soil and fertilizer thoroughly into the top 3-4 inches of sand.	

## MANAGEMENT OF HOOPHOUSES

Hoophouses will last many years if not abused. The plastic covering is the only component that needs periodic replacing. Any clear plastic may be used as a covering, although ultraviolet light will tend to break down plastics not designed for outdoor use after one season. Many types of greenhouse plastics are available and will last for 3 to 10 years.

A Hoophouse can be managed to provide multiple functions. Seeds can be started in flats and germinated in the Hoophouse. Temperature is regulated by varying the size of the end openings and/or lifting the side wall plastic. After seed trays are removed, heat-loving plants such as tomatoes, peppers, and melons can be grown directly in the soil. Plastic can be left in place to keep Hoophouse temperatures warm until outside temperatures will support active plant growth or until plant vegetation outgrows the confines of the box.

Plants requiring staking, such as tomatoes, can be planted near the edge of the box near a Hoophouse support. After the plastic and hoops are removed, a rigid stick or dowel can be inserted into the plastic hoop retainer. Tomato plants can then be tied and supported by the rigid upright stake.

## RECOMMENDED GARDEN PLANTS

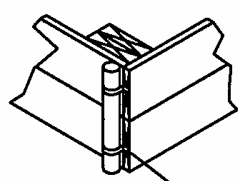
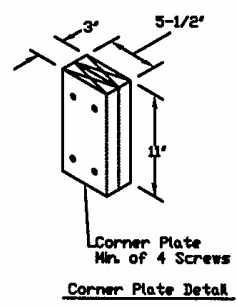
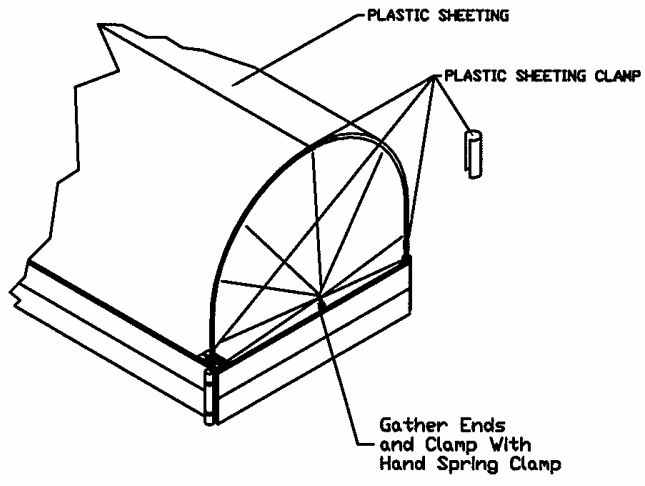
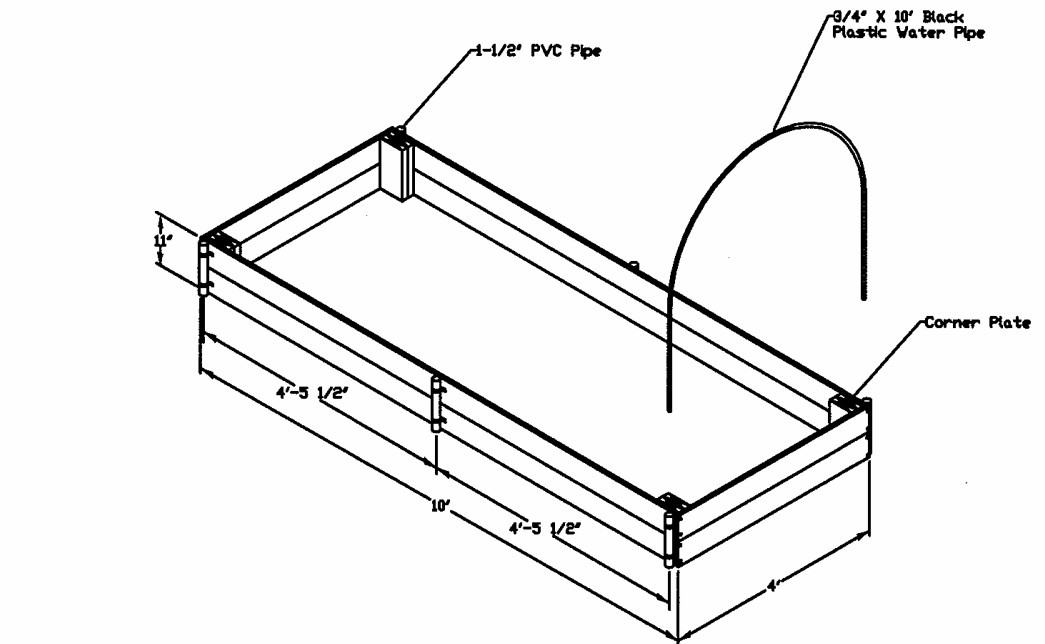
The following plants will perform well when using a Hoophouse for plant protection and season extension: cantaloupe, cucumber, lettuce, muskmelon, pepper, pumpkin, summer squash, tomato, and winter squash.

### *HOOPHOUSE COMPATIBILITY*

<u>Field Tunnel</u>	<u>Greenhouse</u>	High <u>Hoophouse</u>	<u>Plastic Mulch</u>	Floating <u>Row Cover</u>	Trickle <u>Irrigation</u>	Overhead <u>Irrigation</u>
No	Yes	Yes	Yes	Yes	Yes	Yes *

\* Overhead irrigation can be used effectively when the covering is in place if watered from either end or if the covering is temporarily removed.

# HOOPHOUSE PLANS



## BILL OF MATERIALS

- 3/4" X 5-1/2" X 10' Treated Wood (6 each)
- Cedar, Redwood, or ACQ Treated Wood
- 1-1/2" PVC Pipe ( 6 Ln. Ft.)
- 1-1/2" U-Clamp ( 24 Each )
- 3/4" Black Plastic Water Pipe ( 35 Lw.Ft. )
- Plastic Sheeting ( 10' X 16' )
- Hand Spring Clamp ( 2 ea. )
- 10 X 3/4" Galvanized Phillips Head Screws ( 24 ea. )
- 10 X 2 Torx Head Climatek Plated Deck Screws ( 48 ea. )

- 1 1/2" U-Clamp Detail
- Use 3/4" Phillips Head Screws to Attach
- Mount Off The Corner

## **SOURCES**

Hoophouses are not commercially available and must be constructed.

## **CONTRIBUTORS**

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