



The Hobby Greenhouse

Vinyl plastic shading is made of a flexible film that reduces light from 55 to 65 percent. The material comes in rolls and installs easily against the glass inside your greenhouse. To apply, just wash the glass with a wet sponge, then smooth the plastic onto the wet glass. When smoothed into position it adheres to the glass. It can be pulled off and used repeatedly.

Shading compound can be applied on the outside of glass greenhouses. Do not use shading compounds (whitewash) on materials other than glass. They may harm the glazing (covering) and may not be easily or totally removable. Shading compound can be thinned with paint solvents. It comes in either white or green. Shading compound that mixes with water can also be used. The following is a homemade recipe for whitewash. Mix 5 pounds hydrated lime with 3/4 gallon water and allow this mixture to age overnight. Then dissolve 1 pound of common salt with 1/5 pound of zinc sulfate in 1/5 gallon of boiling water. Allow to cool, and then mix with lime paste and stir well. Lastly, add 1/5 gallon of sweet skimmed milk and again stir. Add water and keep stirring until desired thickness is reached.

A lime paste can be mixed by using 50 pounds of hydrated lime with 6 gallons of water, or 38 pounds of quick lime with 8 gallons water. An even more simplified formula is as follows:

- 1 part white latex paint to 10 parts water provides heavy shading; whereas,
- 1 part white latex paint to 15 to 20 parts water gives moderate or standard shading.

Removal of Shading Compound

As fall approaches, maximum sunlight will be needed again for greenhouse grown plants. Much of the shading compound may be worn off by this time, depending upon the solution applied. However, any remaining compound should be scrubbed off clear glass to allow maximum light penetration.

Cooling can be a Problem

Cooling a greenhouse in Oklahoma is difficult. Two typical methods of cooling are used in the summer. The first method is to reduce the light intensity passing through the covering material by using a shading compound, a shade cloth, or wood slats on the outside of the greenhouse. The second and most effective method of greenhouse cooling is accomplished by using an evaporative cooler. This system works by pulling outside air through a film of water thus cooling the air 15° to 20°F by loss of heat through evaporation. The cool air is pulled through the greenhouse by a fan. Evaporative coolers work best at lower humidities. Most hobby greenhouse supply companies have easy-to-install coolers made for hobby greenhouses. Such a system should receive equal priority to a heating system. The cost of operating an air conditioner to cool a greenhouse would be prohibitive and would likely reduce humidity in the greenhouse to less than optimal levels.

The ideal temperature range for most greenhouse crops is 55° to 60°F for night temperature, and 70° to 75°F for day temperature. The day temperature should be 5° to 10° higher than the night temperature on a cloudy day, and 10° to 15° higher on a sunny, bright day. It is essential that a thermostat be located in the greenhouse in a central location, at plant level, and away from direct exposure to sunlight. Do not rely on the home cooling system with a thermostat in the living area to cool the greenhouse. Cooling the greenhouse may also be thermostatically controlled. When the temperature exceeds the desired temperature, the ther-

mostat activates a small electric motor which opens a vent, turns on an exhaust fan, and turns on an evaporative cooler. During summer months, an evaporative cooler will be necessary to keep the temperature close to the optimum level; at other times of the year, an open vent or exhaust fan will dissipate excessive heat effectively.

Inside Maintenance

It is very important that the greenhouse be kept as clean as possible. When this is overlooked, diseases and insects can rapidly become a major problem. Keep all paths and floors free of weeds and debris. Don't allow standing water or muddy floors to exist. Consider gravel, concrete, or even bark floors for cleanliness and drainage. Keep dead and dying growth pruned from plants, regularly. Many common sense practices already practiced in the home are also applicable in the greenhouse. Avoid the temptation to overcrowd the benches with plants, as this will prevent disease or insect problems.

Weatherproof Wire

Always weatherproof wire for all outside wiring. Wire size depends upon the distance to be covered and the electrical load on a circuit. Use approved terminal equipment and follow safe wiring practices. All wiring must conform to local wiring codes. It is worth the money spent and peace of mind to consult a qualified electrician before building a greenhouse.

Contact your county Extension educator for help in locating a few of your neighbors who have hobby greenhouses. Visit them to learn about their problems so that you can choose the best greenhouse to suit your needs.

Check local building codes and zoning laws before starting construction.

Any good book on houseplant care gives guidelines or suggestions on what grows well in a greenhouse. Most growers are very surprised to see how much easier plants can be grown in the ideal environment a hobby greenhouse provides. Refer to OSU Extension fact sheet HLA-6411 and HLA-6425 regarding houseplant care and annual flowers. Guidelines within are applicable to greenhouse culture. Also, readers interested in a commercial greenhouse operation should refer to OSU Extension fact sheet HLA-6700, HLA-6701, and HLA-6703.

Associations

Hobby Greenhouse Association
www.hobbygreenhouse.org

Oklahoma Supply Companies

Acme Engineering & Mfg. Corp.
P.O. Box 978
Muskogee, OK 74402
(918) 682-7791
www.acmefan.com

American Plant Products and Services, Inc.
9200 N.W. 10th
Oklahoma City, OK 73127-9722
(405) 787-4833
americanplant.com

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A greenhouse gives a homeowner an opportunity to grow plants year-round in a controlled environment. While a greenhouse can be either a substantial or nominal investment, success as a hobby greenhouse grower will depend on the degree of environmental control that can be maintained in the structure. Environmental controls can be expensive, and as most other hobbies, home greenhouses require a financial commitment.

The first step would be to accurately assess greenhouse requirements. Would a cold frame, hot bed, or window greenhouse meet the requirements, or is more growing space required? (It seems that regardless of the size selected, the structure will be too small eventually). Larger greenhouses (over 300 sq. ft.) cost less per square foot of useable space than smaller ones, but cost more initially and cost more to operate. Greenhouses are available in a large variety of shapes. Select the style that will harmonize with other features on the proposed site.

The greenhouse may be a free-standing structure, which generally will provide more growing space and flexibility to be placed anywhere on the property, or a lean-to structure attached to a wall of the home, garage, etc. Lean-to models are frequently less desirable because there are limitations on where they can be placed around the home. Preferred exposures are east and south. Regardless of the basic design, however, the greenhouse must receive a minimum of five to six hours of unobstructed light during the winter months.

Attached Lean-To

A lean-to greenhouse is built against a building, using the existing structure for one or more of its sides. It is usually secured to a house, but may be attached to other buildings (Figure 1). The greenhouse is limited to single or double-row plant benches with a total width of 7 to 12 feet. It can be as long as the building to which it is attached. The advantage of the lean-to greenhouse is that it usually is close to available electricity, water, and heat. The lean-to has the following disadvantages:

- Limited space.
- Limited light.
- Limited ventilation and temperature control.

The least expensive type is a window mounted greenhouse. It allows space to grow a few plants at relatively low cost for heating and cooling. This reach-in greenhouse is available in many standard sizes, either in single units or tandem arrangements for large windows. Only simple tools are needed to remove the regular window from the frame and fasten a prefabricated window greenhouse in its place.

Attached Even-Span

The even-span greenhouse is the standard type—the style generally visualized when thinking about a greenhouse. The even-span greenhouse is similar to a freestanding structure, except that it is attached to a house at one end. It can accommodate two or three rows of plant benches. Attached even-span greenhouses

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are also available on our website at:
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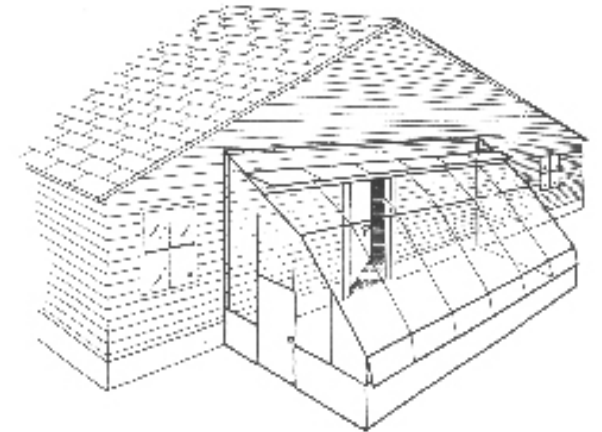


Figure 1. Attached Lean-to Greenhouse. This structure is very convenient since it is placed close to existing utilities.

cost more than lean-to types, but have greater flexibility in design and accommodate more plants.

Freestanding

The freestanding greenhouse is a separate structure and consists of sidewalls, end walls, and gable roof (Figure 2). It is assembled similar to an even-span, except that a freestanding greenhouse is set apart from other buildings, allowing full exposure to the sun. It can be made as large or small as desired.

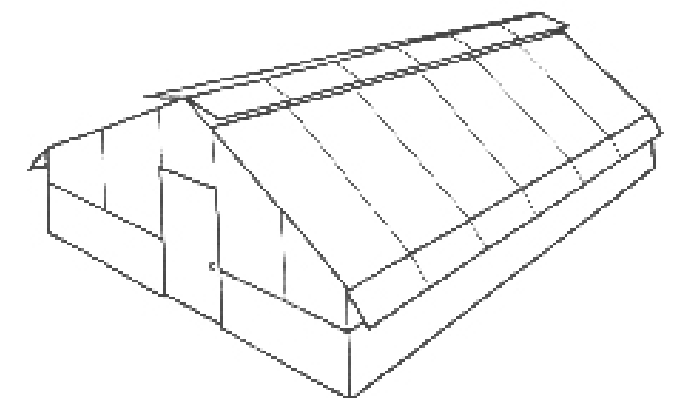


Figure 2. Freestanding Greenhouse. This structure does what its name implies; it stands alone.

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