



[Greenhouses](#) | [Supplies](#) | [Resource Center](#)



[HOME](#) | [VIEW CART](#) | [HELP](#)

[Greenhouse Guide](#) | [Supplies Guide](#) | [Grow Light Guide](#) | [Cold Frame Guide](#)

Categories

GREENHOUSE KITS

- [Compare Kits](#)
- [Cross Country](#)
- [FlowerHouse](#)
- [Hobby Gardener](#)
- [Juliana](#)
- [Little Greenhouse](#)
- [Portable](#)
- [Sundog](#)
- [Sunshine](#)

SUPPLIES

- [Benches](#)
- [Books](#)
- [Controls](#)
- [Deer Repellent](#)
- [Grow Lights](#)
- [Heaters](#)
- [Meters](#)
- [Misting Systems](#)
- [Plastic Coverings](#)
- [PVC Fittings](#)
- [Season Extenders](#)
- [Ventilation](#)
- [Watering](#)
- [Other Supplies](#)

RESOURCE CENTER

- [Greenhouse Guide](#)
- [Supplies Guide](#)
- [Grow Light Guide](#)
- [Cold Frame Guide](#)
- [Foundation Guide](#)
- [Heater Calculator](#)
- [Fan Calculator](#)
- [Area Calculator](#)
- [Ordering Policies](#)
- [Shipping Details](#)
- [Order Tracking](#)
- [About Us](#)
- [Contact Us](#)



Greenhouse Supplies Guide

[Ventilation](#) | [Heating](#) | [Misting and Watering](#)
[Shading](#) | [Flooring](#) | [Benches](#) | [Lighting](#)

The Most Important Greenhouse Supply

What you may ask is the most important accessory you need to have for your greenhouse. A heater? Proper ventilation? While these may be necessary to provide the temperatures you want to maintain in the greenhouse, you are operating in the blind if you do not have a min/max thermometer to show you what temperatures your plants are experiencing in the greenhouse when you are not there. A min/max thermometer records daily high and low temperatures in the greenhouse. This is vital information that can tell you if your heating and/or cooling equipment is sized correctly and working properly in your greenhouse. Some thermometers also record highs and lows for humidity as well. This is a helpful feature for plants that require specific humidity levels like orchids. [View greenhouse thermometers](#)

Ventilation / Cooling

Ventilation is the single most important requirement for a greenhouse. It has two important purposes: providing fresh air, mainly carbon dioxide, to plants and cooling for the greenhouse. Without good ventilation, a greenhouse is nothing more than a solar furnace. Greenhouses are really designed to store heat from the sun during the day creating a warmer temperature in the greenhouse versus outside of it. This makes cooling a greenhouse on a hot day a difficult task that can not be accomplished without a good ventilation system. Cooling in the summer can be accomplished most easily with a combination of shade, proper ventilation, and an evaporative cooling system like a misting system, fogger, or evaporative cooler. [Shading](#) and [evaporative cooling](#) are discussed below. Even using all of the items mentioned above you can expect a greenhouse to still not be much cooler if any than the outside temperature in hot humid areas.

An **exhaust fan ventilation system** usually consists of a fan setup to blow hot stale air out of the greenhouse and bring fresh cooler air inside the greenhouse via intake shutters mounted on the opposite end of the structure. An exhaust fan system should be able to make a complete change of air in 1 to 3 minutes (about 1 minute or less for small greenhouses, 2 to 3 minutes is acceptable for large commercial size greenhouses) in summer to keep temperatures in the greenhouse at a reasonable level.

Many people use **roof and/or side vents** to supply fresh air to plants and cool their greenhouse. This is ideal for venting during cold months because fresh air is supplied to plants more gradually than an exhaust fan system reducing any "temperature shock" to plants.

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Circulation fans are highly recommended for use with side and/or roof mounted vent systems. These fans move air throughout the greenhouse eliminating hot and cold spots which is useful when venting or heating your greenhouse. The increased air movement helps to expel hot air out of the window vents and provide fresh air for plants.

Unless you plan on staying in your greenhouse 24 hours a day 7 days a week, you should consider automating your ventilation system. Forgetting to vent your greenhouse one hot day could fry every plant in it. Thermostatic controls and solar powered autovents will also maintain a more consistent temperature in your greenhouse which promotes healthier plant growth. In hot climates shading and misting equipment may be necessary to hold the greenhouse's temperature in check. Winter ventilation needs are lower. [View ventilation supplies](#)

Heating TOP

The heating requirements of a greenhouse depend on the desired temperature for the plants grown, the location and construction of the greenhouse, and the total outside exposed area of the structure. Much of the daily heat requirement may come from the sun, but if you want your greenhouse to be more than a few degrees above the outside temperature at night, you will need to provide it with a heat source. The heating system must be adequate to maintain the desired day or night temperature. Heating systems can be fueled by electricity, gas, oil, or wood. The choice of a heating system and fuel depends on what is locally available, the production requirements of the plants, cost, and individual choice. Heating requirements for your greenhouse can be determined with our [Heater BTU Calculator](#).

If you're using your greenhouse to start seedlings and root cuttings in the spring, supplemental heating probably will not be necessary. In mild climates, 12' x 12' and smaller model hobby greenhouses can be adequately heated with electric heaters (make sure electric heaters are not exposed to water to avoid a dangerous shock). An electric heater is clean, efficient, and easy to install and maintain. Small gas or oil heaters will also work well in hobby greenhouses. With larger size greenhouses and cold climates where temperatures regularly fall below freezing, larger gas greenhouse heaters are most commonly used because it is cheaper to heat with gas than electric in most areas.

For safety purposes, and to prevent harmful gases from contacting plants, all gas, oil, and wood burning systems must be properly vented to the outside. Use fresh-air vents to supply oxygen for burners for complete combustion. If you use an unvented gas heater in your greenhouse, it is recommended that natural "indicator" plants like tomatoes, impatiens, and salvia be placed near the heater. These plants are very sensitive to gases produced from combustion in gas heaters and will have malformed leaves and stems and/or prematurely lose flowers before other plants if the gases are not being vented properly. Also, look for safety features like automatic overheat controls when purchasing a heater. Portable kerosene heaters used in homes are risky because some plants are sensitive to gases formed when the fuel is burned. [View heaters](#)

Misting and Watering TOP

Misting and fog systems have a variety of uses in a greenhouse. It is important to determine what you want to accomplish with a misting system before purchasing one. **Humidity:** It is important to maintain a healthy humidity level (50% to 70%) in a greenhouse. This is healthy for the plants and higher humidity levels also helps reduce the watering frequency of plants

in the greenhouse. When the greenhouse is vented, essential moisture is lost, and plants are more likely to dry out and wilt. Fog and Misting systems with fine nozzles are very effective at providing additional humidity because their smaller water particles evaporate more quickly. **Evaporative Cooling:** Misting systems help cool greenhouses with a fine mist that lowers air temperatures when it evaporates. Smaller nozzles work best for cooling also. **Watering:** Cuttings and seedlings are commonly watered with small overhead sprinkler or misting systems or mist nozzles for hoses because watering with a regular wand or watering can may disturb the surrounding soil causing plants to take longer to root. If a misting system is used, larger misting nozzles are needed for cuttings and seedlings to make sure the soil is properly saturated. Overhead sprinkler systems are useful for watering most types of established plants in a greenhouse as well. Drip systems are an effective way to water larger plants without wetting the foliage. Another advantage to drip systems is that they use very little water when compared to overhead watering systems. [View misting, sprinkler, and drip systems](#)

Shading TOP

Shade covers are the way professional growers keep their greenhouses cool during those long hot summers. They block a percentage of the sun's rays from entering the greenhouse which can reduce temperatures over 20% alone. Shade covers are relatively inexpensive and also provide shade for plants that don't grow well in full sun. The amount of shading necessary varies depending on greenhouse location, your local climate, and the light requirements of the plants in the greenhouse. Most greenhouse shade cloths fall in the 45% to 65% shade range. When buying a shade cover remember, more is not always better. Excessive shading can slow plant growth and cause plants to stretch. [View shade covers](#)

Flooring TOP

The floor of your greenhouse is both functional and aesthetic. It forms the surface you walk on and helps complete the image of the greenhouse. The walkway and the area under the benches are usually two different materials. The walkway should form a firm nonskid surface for walking, be easy to clean, and be durable enough to withstand constant moisture and dirt. Common materials used for a walkway include concrete, brick, stone, gravel, wood slats, and ground bark. The area under the benches is usually covered by a porous material that can be dampened to help provide humidity and should allow easy drainage of water. For under bench areas, consider gravel, sawdust, ground bark, or any other porous material. You will want to lay a sheet of woven weed barrier ([ground cover](#)) under the floor covering to prevent weed growth, because weeds harbor many pests and diseases. For more information, take a look at our [guide on building a foundation and floor](#).

Benches TOP

You will want benches in your greenhouse. They make a world of difference in the ease of gardening and add a lot of extra working space to your greenhouse. Benches also provide the area under them with plenty of shade which is an ideal environment for many plants. Greenhouse bench tops should have an open design which allows water to drain and fresh air to flow through them. [View benches](#)

Lighting TOP

If your growing area or the season does not provide your plants with enough light, you may need to provide artificial lighting. For detailed information about artificial lights and options available, you can visit our [Grow Light Guide](#). [View lighting systems](#)

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