

# Summer Shading Essential to Cool Plants

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As the sun beats on your greenhouse and the temperature approaches the century mark, the ventilation system gets taxed to its limit. Some of the more sensitive plants may start to wither and burn. Shading the greenhouse can help and has the same effect as wearing a large straw hat on your head.

In contrast to the sometimes complex principles that have been discussed in previous columns, the concept of shading is very simple. A reduction in the amount of the sun's rays entering the greenhouse will reduce the internal temperature and the light level.

Most flowering crops grown in the greenhouse require full sunlight for maximum growth. Light levels, however, vary from as low as 500 foot-candles (ft-c) on a sunny midwinter day to about 10,000 ft-c during the summer. Even though leaves of these plants become light saturated at 3,000 to 4,000 ft-c, they can tolerate much higher levels without adverse effects.

On the other hand most foliage or "green" plants require much lower levels to grow and can be injured by full summer sunlight. Good growth on Dracenas, Peperomias and Sanseverias occurs at about 2,000 ft-c, Philodendrons and Syngoniums require 1500 ft-c and Dieffenbachias will do well at 1000 ft-c.

In sunlight, leaf temperatures may be as much as 30° to 40°F higher than the air temperature. As the leaf temperature increases, transpiration increases and, if dehydration takes place, burning can occur. Shading of the greenhouse or the plants can help lower the temperature.

Two basic methods of greenhouse shading are used—internal and external. In an internal system, the shade is placed above the plants. Cheesecloth, tobacco netting or polypropylene shade fabric can be supported on wire, a framework or a blanket system. This can be removed on cloudy days to increase the light level.

The external system is better in that some of the sun's rays are blocked before they enter the greenhouse and turn to heat. Also the fabric does not get in the way as the internal system sometimes does.