

# Beating Jack Frost

*Text and Photos by* JIM LOTHROP

Each year, at about Christmas-time, Jack Frost starts making visits to the Sacramento Valley and other areas, so it's important to watch nighttime temperatures to make sure our plants and flowers aren't damaged by freezing. Even though most mature plants can stand temperatures as low as 27°F for a short period of time, the flower spike is more tender and will wilt and die two or so degrees above that. Also, since there are microclimates everywhere, the temperature where your cymbidiums grow is probably higher or lower than the Weather Bureau's official temperature.

In fact, temperatures can vary in different locations of your growing area.

For example, temperatures are likely to be less cold under a patio cover, or for pendulous cymbidiums, under the eaves. An unsheltered area of the yard will probably be colder. Winds also can make the effects of low temperatures more severe

Because you can't be sure of what actual temperature might get to your plants, my recommendation is to keep temperatures no lower than 30°F. To begin monitoring your growing areas, you'll need to invest in an inexpensive high/low thermometer. But remember, it's only reading the temperature for the place you have it located; it can be

lower or higher a few feet away.

What you do for frost prevention depends on two factors: how cold you think it will get; and how many plants you have. Protecting a small number of plants is much easier than protecting hundreds. My suggestions will be roughly in order of mildest to coldest.

First, make sure your plants are watered. Freezing causes moisture to leave the leaves and will cause freeze damage at higher temperatures. In fact, it's not a bad idea to sprinkle the plants and leave some water on the foliage during freezing weather.

If the temperature is forecasted to be at about 32°F, place your plants in a protected area, such as under the eaves or in your covered patio. Next to your house under the eaves generally keeps the plants and spikes from frost damage. You can always take the plants inside at night, but you will soon tire of that approach.

Other strategies are also effective. Frost cloth, bought at nurseries or large home improvement chains, can be placed over the plants and effectively give you a 5 to 8 degree temperature difference under the cloth. The cloth comes in a large roll and "breathes" so you can keep the cloth in place until the threat is over.

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Christmas lights warming cymbidiums on the patio.

As the temperature projections get lower, you need to move on to other methods.

The easiest method is to use 9 watt outdoor Christmas lights. Each Christmas season, the large drug store chains put them on sale for half price. I buy the opaque colored lights because I don't want to supply the plants unneeded lamp light at night. The objective is to take the chill off the plants, not to get them to grow and bloom sooner. Although only two strings can be plugged into each other, a total of six strings can be plugged into one circuit.

Place the lights around, not on, the plants. When I was growing plants on my patio deck, I laid the strings on the concrete around the pots. Now, in the shadehouse, I string them just below

the heavy screen surface of my benches. I do that on the theory that because heat rises, the whole plant will benefit. Dennis Olivas of D & D Orchids strings his lights above the plants and his plants do well too.

The next step is important, especially if very cold temperatures are predicted. Buy enough 4-6 mil plastic sheeting (from a large home improvement store) to cover all your plants. Also, buy some 3-4 foot bamboo stakes from your local nursery. Using the stakes for supports, place the sheeting above the plants so that it does not touch the plants, spikes, or the lights. All you need to do now is to turn on the lights.

This system will keep your plants safe, but you need to be careful not to heat them too much. In the morning after the temperature goes above freezing, raise the sides of your plastic canopy to let the fresh air in.

For my system, I bought a \$10 outdoor timer and use it to turn the lights on and off. Normally, the coldest temperature occurs during the pre-dawn hours so I set the lights to go on at about 3 AM and turn off around 9 AM. If you use a timer, you will still need to raise the sides of the plastic canopy each morning and drop them at night.



Plants on the side of the house under shade cloth, protected by Christmas lights.



Cymbidiums in the shade house protected by a vinyl canopy, Christmas lights, and a fan.

There are two other techniques that are used. One is the technique used by vineyard owners in the Napa Valley. They use huge fans to circulate the morning air and that tends to prevent spot frost damage to the grapes. It probably helps with cymbidiums, too. Under that theory, my shadehouse fan operates each day starting at 3 AM.

The most interesting technique I have heard of is one used by Loren Batchman at Casa de las Orquideas in Solana Beach. He discovered that running his sprinkler system over his plants during freezing weather reduces frost damage.

In early 2007, we had several nights during which the temperature reached from the mid-20s down to 20°F. For my two main growing areas I ran the sprinklers all night until the outdoor temperature reached 32°F. The remaining 60 cymbidiums on our patio were surrounded by one string of 9 watt outdoor Christmas lights and covered by a

large sheet of 6 mil plastic sheeting. I had the frost prevention measures operating for one week and sustained NO damage to the plants or spikes due to the low temperatures or the excess watering.

If you hesitate to start a frost prevention program because of the cost, remember that just one good plant can cost more than any of these techniques. So be prepared. Several years ago Sacramento had a week of below-freezing temperatures during which the temperature went down at night into the teens and didn't go above 32°F during the day. I *didn't* prepare, so of my collection of about 150 cymbidiums, I was only able to salvage 20-30. I learned my lesson the hard way.

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