

At Fairview we grow most of the hardier cultivars of azaleas since our market is north of our location. We do grow some Indica cultivars but gamble on the winter we may have.

This open method has worked for us. We feel that we get more hardening off and tougher plants by allowing cool air around the containers. We do suffer some losses, but do not feel that they justify the added expense of winter protection.

WINTER PLANT PROTECTION AT GREENLEAF NURSERY COMPANY, OKLAHOMA DIVISION

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Over the past 15 years Greenleaf Nursery has spent a great deal of money on its overwintering process. The winter of 1961 taught us some rather severe lessons that resulted in such extensive steps being taken. In the winter of 1976-77, all of the extra effort paid off.

In January of 1977, we had a low temperature of near -20°F , and the temperature did not get above 10°F for three days. Had we not had the system of overwintering that we have used for the last several years, our losses would have been devastating. As it was, our losses were basically limited to 5-gallon pyracantha that were outside and 5-gallon sweetgum. All items that were in our overwintering houses were spared, including azaleas that we had brought in from Alabama and hollies from our nursery in Texas. Thus, we feel like our system had the ultimate test and came through in relatively good condition.

Our overwintering system is divided into four basic procedures:

- (1) Bunching for mutual protection.
- (2) Mulching with wheat straw.
- (3) Constructing overwintering houses.
- (4) Protecting from dessication by watering before and after sub-freezing weather.

We bunch basically all our plant material for winter, since our operation is totally containerized. Deciduous trees and broadleaf evergreens are bunched for mutual protection. We place containers "can-tight", where the type of plant material will allow but, out of necessity, must leave limited space between containers on some cultivars due to the possibility of foliage discoloration and disease. Conifer cultivars are also

bunched, not necessarily to give winter protection but to gain space for can filling.

Following the bunching, we then mulch all deciduous shrubs and trees with wheat straw. Most of the shrubs are mulched around the perimeter to cut down on air circulation and to protect the perimeters from freezing. The trees are completely mulched in, with both the perimeters and the tops covered. Straw mulching greatly reduces the frequency and the degree to which the medium in the containers will freeze. We will normally use about 6500 bales of wheat straw in accomplishing our strawing.

We construct 'A' frame overwintering houses over all of our broadleaf evergreens. The houses may vary in length from 150 feet to over 400 feet. The houses are built from a series of prefabricated "A-frames". Each frame is constructed of two 20-foot 2 by 6's, a 2 by 4 inch brace, and three triangular gussets of 1/2 inch exterior plywood. The prefabricated "A frames" are then strung together in place at 8 foot intervals with 2 by 4 inch stringers along the top, middle and bottom. A six man crew can erect about 800 linear feet of house in a day. After the house is erected, the ends are covered with plastic, the house is staked down (to prevent wind lift), and stiff legs are put under each bow to support snow load. The house is then covered with plastic, lathed down, and railroad ties are placed at the corners for weight. The process may sound somewhat lengthy, but it really moves fast and systematically when put into operation. This year, we will have 52 overwintering houses with about three linear miles of house space.

Without a doubt, we consider protection from desiccation to be one of our primary responsibilities during the winter months. We try to go into every cold wave of sub-freezing temperatures with plenty of moisture in the medium in our containers. We are not terribly concerned when the medium freezes in those containers outside the houses, if there is adequate moisture going into that weather. As soon as the air temperature gets above freezing, we make it a point to overhead water any plant material with frozen medium. This helps to insure that the plants will have moisture around the roots when they again start transpiring. Desiccation is especially a problem after lengthy cold spells which seem to freeze-dry the medium.

This is just a brief outline of the winter protection at Greenleaf Nursery. There are a number of exceptions and specialized cases involved in the process that I have not discussed. The main point to stress is that we strongly believe in our very regimented overwintering procedure. Despite the fact that it is an expensive process, it has proven to be a cheap insurance policy.