

Winter Protection at Martin's Nursery

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INTRODUCTION

Martin's Nursery is located in Semmes, Alabama, which is just northwest of Mobile. The Semmes area has nearly a century-old history in the nursery industry. Cold weather and severe freezes have played key roles in our history. In fact, it was a devastating freeze that converted the earliest South Alabama nurserymen from citrus crops to ornamentals.

Protection from the elements is a state of mind for our business, as it should be for all ornamental nurseries. A big emphasis is placed on winter protection and we think about it 12 months out of the year. Daily decisions about what to pot and where to put it are partially based on how and if we plan to protect it during the winter. How we protect our azaleas (*Rhododendron*), hollies (*Ilex*), and cleyera (*Cleyera*) are in many ways standard in the industry, but we have some unique systems.

WINTER PROTECTION SYSTEMS

Our winter protection methods include some cultural conditioning, greenhouses, structureless winter coverings and also a "semi-structureless" method of covering.

Cultural. At the basic level, many of our cultural methods are geared towards preparing plants for the winter months. When possible, the timing of our production cycle maximizes the warmer months in order to finish the crops before the threat of cold weather. We plan the production cycle as well as the type of fertilizer around winter. Potting during the winter months can be challenging, but we do that by planning ahead. We prepare some azalea cuttings by toughening them up so we can pot an early crop during the winter. The cuttings are rooted during the summer and never given supplemental fertilizer. They are moved out of the propagation house in late summer and remain unfed. We encourage these plants to go dormant and rarely protect them during cold weather. This hardened-off cutting can then be potted up during the dead of winter.

Greenhouses. We physically protect plants with and without greenhouse structures. Currently, we have 44 greenhouses in use. We supplement some with heat, usually just keeping air temperatures above freezing. However, we will take advantage of the 4- to 6-week jump during early spring by increasing the greenhouse air temperature. We can use our greenhouses to manipulate dormancy and growth by opening and closing doors during certain weather conditions.

Structureless and Semi-Structureless Protection Systems. Our system of covering plants in the field is unique and may not actually qualify as structureless. We have boards permanently fixed in the ground and use them to attach winter cover. The idea behind installing these boards was to give us a surface to nail protective covers in place. This configuration is based on local greenhouse construction techniques — in fact it is exactly how we nail poly to our free-standing pipe houses. The blocks of plants we cover this way are set up with sprinklers on 12 m (40 ft) centers, with every fifth bed being a sprinkler bed. The boards run down both sides

of the sprinkler bed stopping 3 m (10 ft) short of the end. Rough sawed, treated 1 inch × 6 inch lumber is used and is nailed and attached to 2.5-cm (1 inch) galvanized pipe. These pipes are on 2.4 ft centers. All are driven 0.6 to 0.8 m (2 to 2.5 ft) deep, and some set in concrete. Most covering is done with 6-mil white poly, but we will also use 4-mil white poly, shade cloth or frost blankets. White poly is used not only because it has proven to conserve heat and protect, but also because it does little damage to plant foliage. The 6-mil white works much better than the 4-mil because it is stronger and lasts longer, in fact we have some pieces that have been reused for over 5 years.

By drilling holes in this poly, we can leave plants covered for extended periods of time. While still on the roll, we will drill 9.5-mm (3/8 inch) holes on 30 cm (12 inch) centers. These holes allow for rainwater drainage and limited ventilation. We can, and in fact have, leave this covering in place for over 2 months. Under the poly enough moisture is maintained to eliminate the need to irrigate.

Before we cover, we have to move the plants out of the sprinkler beds. We try not to move these very far, and usually fit them all into the walkways in nearby beds. When we are potting in the fall and jamming plants, we will simply skip the sprinkler beds and leave them empty for winter. Larger, finished-off plants are used when possible in the walkways and outside rows in order to hold the weight of the poly off of the younger plants. In most years, we begin covering greenhouses in October and place the poly in the field in November. We like to have all of our hollies and *Cleyera* either covered or ready to cover before the holidays. There are, of course, exceptions in years where we have early freezes.

In a typical year we will cover the block of plants with poly, then nail only the north end down. Greenhouse strips and double-headed nails are used. We then pull the poly to the north, uncovering the plants. The poly is bunched up on the north end with dirt buckets or peat moss bales sitting on it. If we know a freeze is coming we can quickly pull the poly back over the plants. Usually a stiff north wind assists us and we then nail the south side and secure the ends with dirt buckets or peat moss bales. We will also cover plants in blocks that have no boards. In that case, we secure the protective cover on all four sides with dirt buckets.

CONCLUSION

We've been served well for the past several years by our hybrid structureless system of covering for winter. We have benefited economically by both saving capital outlay and maintaining efficiency. Greenhouse construction can be financially prohibitive, especially during periods of cash-tight growth and expansion. Greenhouses can also reduce efficiency in nursery production systems, since workers can not always get directly to plants and must walk around obstacles. This increased daily walking mileage of workers decreases productivity in our very labor-intensive industry.

THE FUTURE

This structureless system is not perfect. Although it has saved us money and helped protect many plants during winter, we do have to work around it the rest of the year. The future at Martin's Nursery will see increased greenhouse construction and the removal of these boards from the fields. Our structureless system has been an outstanding interim method, but it's hard to beat a greenhouse. Many established nurserymen agree that a greenhouse will pay for itself quickly, sometimes in the first year. We will see!