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Don't let the snow get you down!

This updated e-GRO Alert includes tips on how to manage heavy snow loads on your greenhouse to help prevent damage to your structure.

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Regardless of where we live, almost all of us have to deal with snow on our greenhouse from time to time. Those in the South maybe a little less than those of us in the North (parts of New England have gotten 4 feet of snow in the last 2 weeks!).

The first thing that comes to mind to most of us when the snow starts falling is, "Better start shoveling out the driveway". However, for us greenhouse operators, the first thought should be "Better get the snow off the roof". Not a year goes by without hearing about or seeing a collapsed greenhouse due to the snow load (Figure 1).

This season is no different, just last week I was notified of a New Hampshire greenhouse collapsing under the overwhelming amount of snow fall.

To combat the snow load we should actually start thinking about dealing with the extra weight before the snow even starts to fall, or maybe even before

Figure 1. A collapsed double-poly house casued by too heavy of a snow load

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we build our greenhouse. The design of our greenhouse can greatly affect how much snow load the structure can handle, especially when it comes to double-poly houses. The typical hoop house (Figure 2) is not designed to handle a large snow load, whereas a gothic style house with a more peaked roof (Figure 3) actually sheds the snow better and is impacted less by heavy snow fall.

Paying attention to the weather forecast is critical, there are a number of things that we can do in order to keep the snow from building up on the

Figure 2. The typical "hoop-house" design for double-poly greenhouses which does not shed snow well.

Figure 2. The typical "gothic" design for double-poly greenhouses which does a good job of shedding snow.

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roof of the greenhouse. When snowfall is expected turn your thermostat up. How much will depend on how much snow and at what rate the snow is coming. The more inches of snow per hour falling the warmer you will need to keep your greenhouse in order to melt the snow as it falls on the roof, in some cases this may mean it is considerable warmer than typical growing temperatures. Growers have a hard time making this decision because it has an immediate impact on your wallet; heating a greenhouse is expensive, everyone knows this. However, it is much more expensive to clean up a collapsed greenhouse and repair it than spending the extra money to heat it for the hours of a snowstorm. Don't forget about your energy curtain. This is a little counter intuitive, but make sure your curtain stays retracted. The purpose of the energy curtain is to keep the heat closer to the plants and prevent it from being conducted through the plastic and out of the greenhouse. When the snow is falling, we want to encourage this conduction through the plastic to promote snow melt.

Another way to keep the greenhouse from collapsing is to temporarily reinforce it. Having some 12-16 foot 2x4s handing are a cheap insurance policy. Screw to 2x4s together on edge, perpendicular to

Figure 4. Using 2x4's screwed or nailed togeher on thier edges to make a "T" can be used a temporary supports for the greenhouse during a snowstorm.

each other to make a "T". This adds strength to the boards and will help them from buckling under pressure. These can be used as temporary posts on every bow of your hoop house for added support (Figure 4). Once the snow begins to fall be sure to keep clearing snow away from the edges of the greenhouse. Snow will build up here faster as it slides of the roof and comes to rest on the ground (Figure 5). If you do not clear the snow from the sides of the greenhouse you run one of two risks, or maybe both. First, the greenhouse is designed to shed the snow, if the snow builds up on the side and the structure can no longer shed the snow, the snow will eventually build up the sides to the top. Second, the greenhouse is designed to withstand pressure down. If snow begins to build up, especially if it is on one side more than the other, you will begin having 'sheer pressure', where the weight of the snow is actually pushing the greenhouse over, rather than collapsing it from top down.

Finally, in some instances where the snow is heavy and coming down fast, no amount of preparation will prevent the snow from building up on the greenhouse and eventually causing the structure to fail. In these times, it is good to keep your favorite knife around and be ready to cut the plastic of the greenhouse. This is a last resort to save the greenhouse and not an action to be taken lightly. You may have a crop in the greenhouse and you will certainly loose that crop. You also will want to make some provision to protect any heater, environmental controls, motors, ect from being exposed to the elements. Cutting the plastic won't be pretty and it will be a hard decision, but at the end of they day it will probably be the better alternative to having the entire structure being damaged.

Even though we're a long way through the winter, you never know when the next snowstorm will hit. If you've gotten past the recent storms unscathed consider yourself lucky, but now is the time to prepare for the storm that might be on the horizon.

Figure 5. Snow will build up along the sides of the greenhouse can can prevent the snow from being shed from the roof.