

Curtain Checkup

Is your greenhouse losing energy and sapping your business strength? Here's the cure.

by **PATRICIA DEAN**

WITH energy costs increasing and little relief in sight, everyone is looking for ways to reduce heating costs. One way of conserving energy is the use of an energy curtain in the greenhouse that, when pulled closed at night, creates an attic of air that acts as an added layer of insulation.

Any future greenhouse that growers may be designing or planning should allow for at least a single-curtain system, whether they are being installed initially or at a later date. Preplanning will allow any greenhouse business to then add the first or even a second system without too much retrofitting.

Installation: Part Of The Product

There are two parts to a quality energy curtain: the mechanical design and the installation. The reliability and craftsmanship of the installer are critical. It's critical that the builder read, understand and follow the plans and instructions during installation. Without this final step, the curtain system can lose much of its effectiveness.

Energy Curtain System Checklist

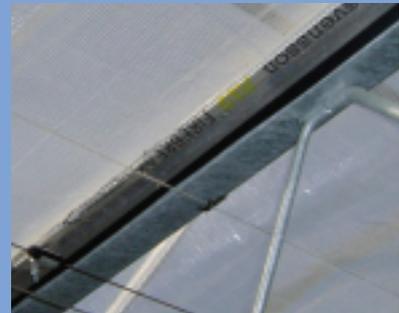
To ensure that a curtain system is giving the maximum heat retention possible, it is recommended growers go through the following checklist to verify that systems are operating correctly. The two most important factors are making sure the curtain system is sealed as tightly as possible and that it is being used whenever possible. To maximize the usefulness of their energy curtains, most growers use a computerized control to open and close their systems. The following pictures detail some common mistakes and tips to fix them.

1 Is there a tight seal between the lead edge and the truss angle when the curtain is closed?

Gaps represent heat loss. Adjust the pipe clamp on the push tube to tighten the seal.



Needs to be adjusted.



Properly adjusted.

2 Is the fabric tucked into the perimeter seal?

Installed between the edge of the greenhouse and the edge of the moving section of curtain, the perimeter seal represents significant heat savings. If you opted not to have a perimeter seal installed to increase light transmission, you may want to re-evaluate this decision. This seal is a stationary panel of shade cloth at each eave and gutter that overlaps the edges of each movable panel of cloth. This overlap helps prevent cold air from circulating past the edges of the movable panels of cloth and can significantly reduce energy expenditures.



Fabric properly placed in perimeter seal.



Fabric not in perimeter seal.

3 Are there any tears in the curtain material that need to be repaired?

Air should be trapped below the curtain to maximize energy savings. Depending on the size of the tear, repairs can be done by applying a 3M double-sided tape (which can be provided by cloth manufacturers) and then a patch of new fabric over the tear. Larger tears may require replacing the panel of fabric, but that one-time cost is more than outweighed by constant heat loss.



Fix curtain tears as soon as possible.



Minimize necessary pass-throughs.

4 Ensure that fabric is trimmed to form a minimal opening around objects that span above and below the curtain system.

5 Use the system as often as possible.

To achieve maximum use, and therefore maximum savings, most growers automate the process. Controllers allow the curtain to cover and uncover automatically, which enhances energy savings. A properly-installed controller (such as the VersiSTEP pictured) can act as the brains behind the operation, meaning you can give yours a break.



General Performance

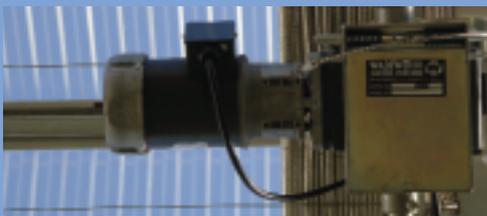
1 Apply synthetic PTFE grease (such as Magna Lube G) to all drive line components well and often.

This helps reduce wear and makes the system operate smoothly and quietly.



Set yourself a schedule for lubrication.

2 Ensure that the curtain folds neatly into a small bundle when in the closed position.



This step helps your plants, as well.

3 Are all rollers properly aligned?

The tubes should run in the groove of the roller guide and not off to the side.

Simple problems, if caught early, prevent both maintenance and energy bill-related headaches later. **GG**

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Aligned.



Not aligned.