

## Energy Conservation

*Allen C. Botacchi*

*Cooperative Extension Educator, Commercial Horticulture*

**G**reenhouse energy conservation is a many-faceted undertaking. Regardless of what form(s) of energy conservation practice(s) is/are implemented into the greenhouse structure, one must always remember the effect on the crop(s).

Is the practice going to adversely reduce crop quality or timing? Will too much light be shaded from the crop? Will you still be economically able to produce the crop? Will the crop still be profitable? These, plus additional questions, must be asked prior to implementing or installing an energy conservation device. Each grower must determine his/her payback and cost effectiveness of the practice.

Some of the typical energy conservation practices and percent reported energy savings include:

Windbreak	5-10%
Glazing material	30-40%
Insulation	10%
Weatherstripping, tightening glass, etc.	3-10%
Double Poly Over Glass	35-50%
Single Poly Over Glass	30-40%
Inflated Tubes	40%
Thermal Curtain	20-50%

Other techniques which increase efficiency and indirectly save energy include:

- Peninsular Benches
- Movable Benches
- Warm Floor Growing Systems
- Rack Growing
- Ebb and Flow Water Systems
- Different Fuels

These energy conservation devices and practices plus others should be considered, but always select those most beneficial to you.

Do your homework and push the pencil to determine the "bottom line."

The references cited below offer detailed information on the devices and practices listed in the article.

## References

- Ball, V. 1983. *Conserving greenhouse heat*. Grower Talks. April: 30-41.
- Bond, T. E. 1982. *Greenhouse energy notes-5: energy conservation ideas*. Flower and Nursery Report for Commercial Growers, Univ. of Calif. Coop. Ext. Spring 1982: 1-4.
- Elliott, G. 1990. *Reduce water and fertilizer with ebb and flow*. Greenhouse Grower Vol. 8, No. 6: 70-75.
- Grumbine, A. 1990. *The importance of reducing water use and runoff*. PA. Flower Growers Bul. 398: 3-4.
- Roberts, W. J. 1983. *How can growers reduce energy consumption without interfering with their operations?* American Nurseryman Vol. 158, No. 10: 71-76.
- Roberts, W. J., etal. 1985. *Energy Conservation for commerical greenhouses*. NRAES-3:1-40.

