

## **SAVE FUEL WITH YOUR HEATING SYSTEM THIS SPRING**

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Has the cold blustery winter weather got your heating system down. Remember that you still have one-third of the heating season left from March through May. Here are a few reminders on ways to reduce fuel usage this spring. A few minutes attention to these can pay off now that oil costs are well over a dollar a gallon.

1. Efficiency Test--The burner on your boiler or furnace is like the carburetor of your car. It requires periodic adjustment. The efficiency of most burners can be increased 5 to 10 percent using the appropriate instruments and diagnostic procedures. (See Connecticut Greenhouse Newsletter No. 97 for further information.)

2. Boilers and furnaces operate most efficiently when operating continuously. Short cycling that occurs during the warmer nights of spring results in greater losses from start-up and shut-down. Installing a stack damper that closes the flue when the burner is off may save 5 to 10 percent. The damper is interlocked with the thermostat and burner so that the burner will not fire unless the damper is open.

3. Lower Boiler Water Temperature--As the weather moderates, the heating system can maintain the desired greenhouse temperature with a lower water temperature. Losses from the boiler and piping in unheated areas are reduced as this water temperature is lowered. Make adjustments to the water jacket aquastat as the weather gets warmer.

4. Do you have a large old boiler? Maybe you should consider installing some oil fired hot air unit heaters for use in the spring and fall. Several growers have done this so they don't have to run the boiler to supply heat on mild nights or when operating one or two greenhouses. Be sure that the pipes are drained in the houses not being heated.

5. Do you still water your plants with cold tap water? In a recent experiment by Dr. Pat Miller, soil temperature dropped from 55°F to 45°F in three minutes when pots were watered with 42°F tap water. It took three hours to bring the soil temperature back to 55°F. As the root zone temperature approaches 40°F plant growth nearly stops. With greater use of vermiculite, perlite and peat moss, all good insulators, this problem tends to increase.

There are several ways in which water can be preheated. Growers with one or two greenhouses have used 55 gallon drums and a small pump. After watering plants in the morning, the drums are filled and water allowed to warm till the next day.

Several growers have installed heat recovery units in the boiler or furnace stack. Water is circulated through a pipe coil, located around or within the stack and stored in an insulated tank for use on the plants.

A third method is to install a large insulated tank (500-2000 gallons) in the head house area and heat the water with a heat exchanger connected to the boiler. A separate circulating pump and thermostat should be used. Water can then be piped through insulated pipes to individual greenhouses. Remember that heat supplied to the water used on the plants is not wasted as it also heats the greenhouse.