

us this is about four weeks behind schedule. During that time we had wet and cool weather. We were running our fog system 40 sec. every 2½ min., which proved to be too long as our cuttings were much too wet. Our cuttings of *Ilex crenata compacta* and *I. helleri* decayed below the soil level, but they have now rooted at the soil line. We cut the fogging time back to 14 sec. every 1¼ min. This has proved to be better, but the edges of the medium still do dry out.

We are still experimenting with the fog system in propagation. We think the concept is a good one. With the changes we plan to make, we expect to alleviate the problems we have experienced.

LITERATURE CITED

1. Gaddy, B. 1982. My experience with high humidity propagation *Proc. Inter. Plant Prop. Soc.* 32:446-448.

A SIMPLE AND FLEXIBLE MIST CONTROLLER

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The propagation house is full of problems and pitfalls. One of the trickiest problems is controlling humidity around the cuttings. The usual methods of controlling mist cycles with standard time clocks and electronic leaves both have unacceptable trade-offs. Standard time clocks do not have enough flexibility, and electronic leaves and screen balances are too expensive to be used on a large scale. The mist controller outlined below is very flexible and is reasonably priced.

The Controller. The mist clock is a Richdel, Lawn Genie, 6-station lawn sprinkler controller (Figure 1). This controller is a common residential unit. The standard 24-hr. motor (M007) has been replaced with a motor (M001) that cycles every six min. The cycle is adjusted to mist once every two, three, or six min. This adjustment is easily accomplished by simply adding or removing tripper gears. Each station has an independently variable misting time that is adjusted by simply turning a dial. The mist can be set to come on for as little as one sec. to as long as 30 sec. per station.

The System. A single controller with a 24-hr. day-night clock to cut the controller on in the morning and off in the evening is very effective and economical. A much more flexi-

ble system is to use two controllers with each station connected by a three-way toggle switch. One controller could be set up with gears to provide mist every three min. and the other to mist every six min. Both clocks would be wired through the same stations through a three-way toggle switch for each station. Thus, by the flip of a switch, the mist cycles can be either on for three or for six-min intervals per station. If only one controller is used, then all six stations on that controller must have the same interval between on times. Another advantage in the use of two controllers is that as the day warms up and the cuttings need mist more frequently, the mist cycle can be changed from every six min. to every three min. by the flip of a switch.

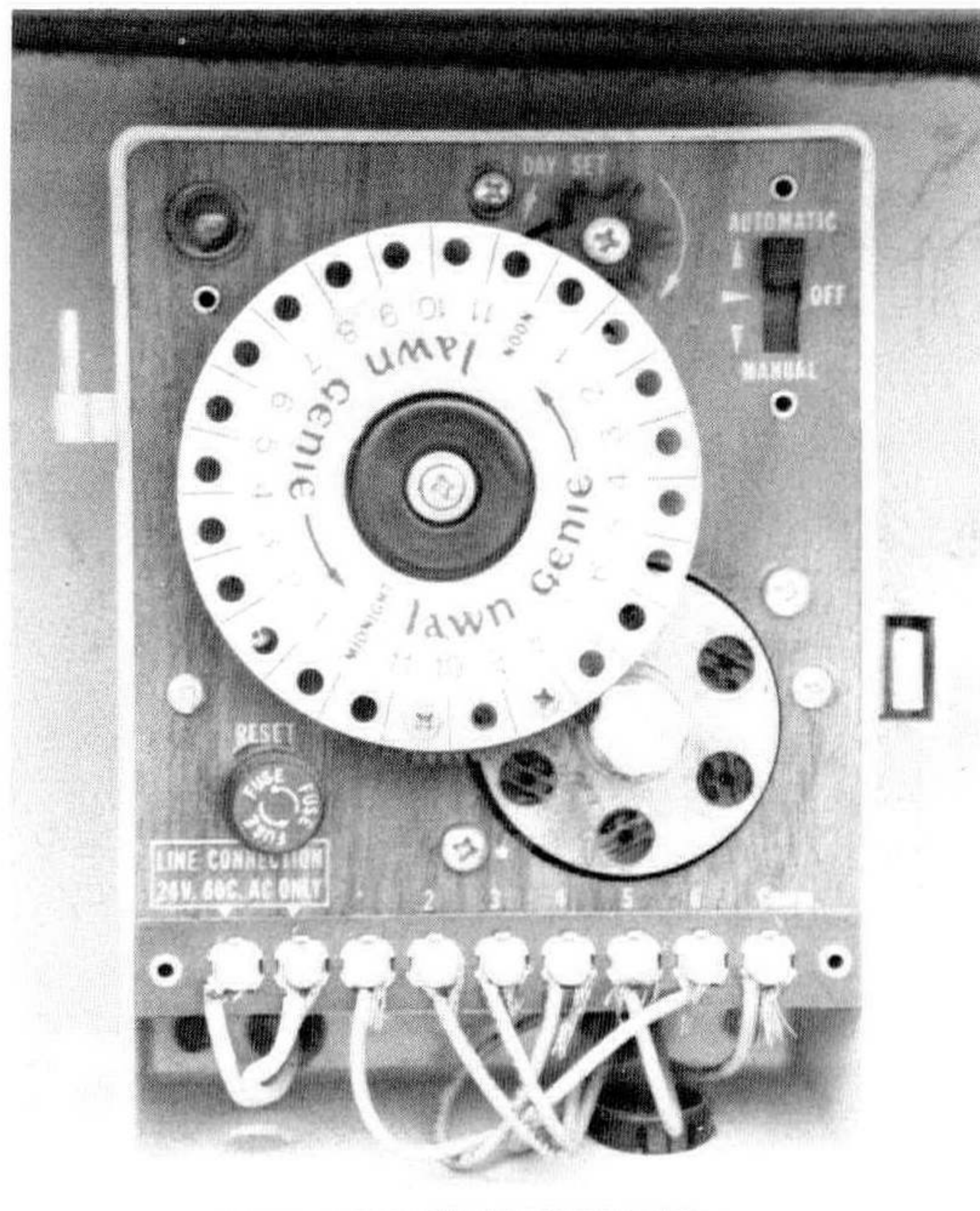


Figure 1. Richdel, Lawn Genie, 6-station lawn sprinkler controller converted into an inexpensive and flexible mist controller.

Another labor-saving device is the use of an on-off toggle switch for each station, with the addition of another 24-volt transformer. This switch is tied into the station wire as an alternate power supply for manual watering when the cuttings

Note: A detailed electric schematic drawing can be obtained from the author.

have rooted. This additional switch allows the cuttings to be watered manually if for some reason a controller malfunctions. The complete setup has one advantage over most commercial clocks in that the person who wires it can replace most parts in place with little or no downtime.

This system offers much needed flexibility in the propagation house. The two biggest advantages this system has over commercial controllers are reasonable cost and simplicity of repair.

YOUR IRRIGATION WATER SAMPLE

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The purpose of water sampling is to collect a portion of the water source small enough in volume to be transported conveniently and handled easily in the laboratory while still representing the water source being sampled. A representative sample is the most important single element in the water analysis since the result of any test can be no better than the sample on which it is performed. A representative sample means that the concentrations of all components are the same in the sample as in the water source. The task of obtaining a representative sample often becomes more difficult as the size of the water source increases. A good grab sample can be representative if it is collected from a well-mixed water tank but will not be representative if it is collected from a pond. The sampling program should take into account the variations of time, area, depth, and the rate of the water flow. Quality can change overnight even with city water if a decision is made by city officials to soften the water.

It is impossible to give detailed sampling procedures under all conditions. In general, a representative sample can be attained by making a composite of individual samples collected at different locations or over a period of time. For example, if pond water is to be tested the samples should be taken from different depths and combined to form one composite. For well water a composite is obtained by taking samples over a period of 5 min. to 1 hr. or longer. Sometimes it is necessary to obtain more information about the variability of a water source by analyzing the individual samples separately. If flow rate in-