

3. Cellotherm may be used in ground or raised beds
4. Power consumption is 2.7 less with Cellotherm than with electric cable

CHIKO HARAMAKI: Next, we have something special, a symposium on unusual techniques. Our leader will be Mr. Ray Halward.

### UNUSUAL TECHNIQUES

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Through the years at these meetings, many and varied techniques have been explained by fellow propagators. Many of us returned home full of ideas how we were going to adapt these innovations to our own particular propagating facilities.

Let us briefly review some of the earlier techniques that inspired many of us to change our old ways for new. In 1953 *The Phytotektor Method of Rooting Cuttings* by Harvey Templeton explained the rooting of cuttings in soil using mist controlled by a humidostat and timer. He related at that time that the technique was an attempted union of the English sunframe and new mist humidification. An idea he obtained from an article he had read on mist, by James Wells.

*A Simple and Inexpensive Time Clock for Regulating Mist in Plant Propagation Procedures* by Charles Hess and William Snyder was the title of a paper that aroused a great deal of interest in electrical and mechanical controls in mist propagation.

In contrast to these techniques, Leslie Hancock described the rooting of cuttings in soil in raised beds under burlap, supplying the necessary moisture manually.

In 1954 Vincent Bailey explained their propagating facilities and the use of the Binks system of humidity control for propagating softwood and coniferous cuttings. Excellent results were obtained by varying the percentage of humidity from 90 to 70 during the rooting period.

From these and other similar systems many techniques have been developed. The system I use is a good example. I started using mist in 1956 and at that time various electronic leaf controls were in use. Being undecided which one to use I began experimenting with different materials for a leaf control in conjunction with a Humidomist controller. More by chance than deliberation I tried Bee's wings suspended between two carbons from flashlight batteries. These were inserted through a piece of plastic and wired to the controller. This is used under a double layer of plastic. It has provided excellent control for intermittent misting and the wings last all season.

Last winter I heard about an unusual technique. The

propagating beds are set on a bog area. The bog is covered with three inches of a 5 sand, 1 peat mixture. A fungicide in powder form is mixed well into the media. When the cuttings are stuck they are covered with plastic covered sash. The rising humidity from the bog eliminates the necessity of watering or spraying. In the evening both ends of the frames are opened to allow free circulation of air. The cuttings are left in these beds until the following spring. This is the method used by Mr. William Ellerbrok of Sydney River, Nova Scotia.

RAY HALWARD: Do we have any other unusual techniques to report?

DAVE PATTERSON: After hearing Bruce Briggs last year, I went home and took a deep flat, about six inches deep, and knocked the bottom out. Then I stretched black polyethylene over it and stuck the cuttings through the polyethylene. Then I put them in a mist bench. Most of the medium in the bench had been taken away. We had about 120 cuttings of about 10 different things and most of the things we rooted such as *Ilex crenata*, *Ilex glabra*, and *Juniper pfitzeriana* rooted 7 to 8 out of 10. We also rooted 5 out of 10 *skiadoptis* cuttings.

PETE VERMEULEN: Your mist was applied on top of the cuttings while in Bruce Briggs' case the mist was applied to the stems under the plastic.

BRUCE BRIGGS: This year we tried a few different things. We applied hormones underneath. We used fog as well as mist underneath and found it didn't make any difference as long as it was moist. Actually, soil (or a medium) is not an important thing at all, it actually can be eliminated. The thing we are after is control.

DICK FENICCHIA: I have been working with a chamber in which you can regulate both top and bottom temperatures. I have some interesting results and would encourage others to try the same thing.

CARMINE RAGONESE: I have found a technique which is very helpful to root hybrid Rhododendrons. If I place the cuttings in a plastic bag and leave them in a plastic bag with just a little bit of humidity and place them in the dark for about two weeks, they root like a weed. I also found that some cuttings which are not rooting in the greenhouse, if I exclude light for a day or so, they will then root.

CHIKO HARAMAKI: The next speaker needs no introduction. He is Mr. James S. Wells.

#### **"COST OF PRODUCTION AND HOW TO DETERMINE IT"**

JAMES S. WELLS  
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A casual glance at this title would seem to indicate that our Society has gone "way out" in choosing a subject which would have very little direct connection with Plant Propaga-