

## EVERGREEN PROPAGATION WITH CABLE FRAMES

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Since the introduction of soil heating cable to the gardening and nursery trades, many uses have been found for this type of equipment. Since we do not have greenhouses, they have been a wonderful thing for us. Our results in evergreen propagation from both grafts and cuttings through the use of cabled, outdoor propagating frames have been good.

The frames are approximately 6' x 30' x 10", and require 10 hot-bed sash and nine rafters. The frames are constructed of one-inch pine for the slides and ends, with 2" x 8" cedar at the base. The frames are lined with Tentest for added insulation. One side of the unit is 28 inches high while the other side is 24 inches high, thus giving slope in order to shed the rain.

In locating the unit, we dig down 8 inches below the ground level, filling in the excavation with cinders. The frame is then placed over this area. Two inches of steamed soil is then spread over the cinders. Next, the cable is laid so that the loops are evenly spaced at 6 inch intervals. This size bed requires three, 120 foot cables, 1 thermostat, and 1 switch. The cable is then covered with 6 inches of steamed soil, which brings the inside of the frame some eight inches above the ground line.

A portable shelter can be placed over the frame, thus enabling a man to work without undue loss of heat. The shelter is made of 1 inch lumber and is six foot by six foot in dimension.

The amount of current used varies according to the prevailing weather conditions. Cost will therefore vary with the locality, although for us it has been found to be quite reasonable. Two inches of peat moss is used over the soil surface only when the frame is being used for evergreen grafts.

For evergreen grafting, seedlings are potted in 2½ inch pots in the usual manner, at the end of October. Careful selection of stock is very important to a successful grafting operation. Potted seedlings are placed in frames, previously prepared with peat. The peat needs to be well water soaked. Pots are then set upright and are not plunged! After a hard frost (usually around December 1) the heat is set at 50 degrees. It is gradually raised and by grafting time, we raise it to 70°F.

The seedlings are ready for grafting by the first week in January. Every root must be checked. This year our grafting was finished by January 15th, with the exception of *J. virginiana hilli*. Since we bought those scions, they were grafted late, i.e., around January 26, with 100% stand. We use a side graft, tied by a rubber strip. Every ten days a Fermate spray is used as a precaution against fungi.

*Taxus* cuttings were made from September 20-30th. Tip cuttings 6-8" were wounded on one side and treated with Chloromone 1-4. Cuttings were placed in flats, using a fine bank sand as a medium, and put in the frame. No peat is used for the cutting frame. There is no heat until January 1st when bottom heat is set at 50 degrees.

The cuttings should be rooted by April 1, so the heat can be turned off. The procedure just described is used for juniper cuttings taken in October, and arborvitae cuttings taken in November.

Chloromone rather than Auxan or Stimroot treatment has given us a better rooting percentage. Watering is watched and regulated carefully according to the weather.

Some results selected at random from our 1957 propagation records are listed in the following table.

Table 1.—Electric cable frame propagation results

Plant Type	Number of cuttings			Number of grafts		
	Made	Rooted	%	Made	Take	%
<i>Thuja occidentalis</i> (Little Champion)	6975	6275	90%			
<i>Juniperus c. psitzeriana nana</i>	1400	1200	86%	224	223	99.5%
<i>Taxus cuspidata nana</i>	2310	2310	100%			
<i>Juniperus virginiana hillii</i>				500	500	100%
<i>Juniperus chinensis</i> (Mountbatten)				700	600	86%

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MODERATOR COLE: Thank you, Mr. Blyth. We will now ask Mr. Jack Hill, D. Hill Nursery Company, Dundee, Illinois, to explain "Propagating Plants Directly in Containers."

Mr. Hill presented his paper, entitled, "Propagating Plants Directly in Containers." (Applause)

## PROPAGATING PLANTS DIRECTLY IN CONTAINERS

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Discussing the propagation of plants directly in containers should be prefaced by indicating that the propagation that we have done directly in one-gallon containers has been on an experimental rather than on a production basis. This was done two years ago and was not followed up this past year. I think we have sufficient information about it, and therefore I will describe the procedures we have used and the results obtained.

The reason we did not follow it up this past year was because we thought we could get a saleable plant in one season from going into the container early in the spring with an established, potted or banded liner. Having now had one year's production experience with that program, I am not sure we can do it across the board with the line of deciduous flowering shrubs that we wish to market in one-gallon containers.