

## PROPAGATION OF DWARF CONIFERS

JOHN MITSCH

*Mitsch Nursery*  
*Aurora, Oregon 97002*

On a small nursery of 10 acres employing 20 to 25 individuals, over a thousand cultivars can be found at the present time, including conifers and a broad range of azaleas, camellias, heathers, rhododendrons, some selected deciduous stock and a few perennials. During our 28 year history, we have come more and more to specialize in dwarf conifers until now over 500 cultivars can be found on the grounds.

Continuous experimentation and observation have helped us formulate some ideas about specific times and methods of propagation — although we still get surprises! Gradually we have worked out a general time schedule which helps in propagating such a diverse collection. This schedule is frequently updated as we continue to experiment and learn from fellow propagators.

Cultivars (or species) are listed the month propagation is started. (See the following sample Propagation Schedule). Shaded areas are prime time; solid line, good; broken line, “risky but possible” if our schedule prohibited our doing them at a better time. Being able to see the whole month at a glance enables us hopefully to juggle the work loads to get the most plants in at the best time for as many as possible.

After determining the specific item to be propagated we give instructions to our workers by means of a 5” × 8” Propagation card which is made out either by myself or a foreman. These are color coded (green for conifers; salmon for azaleas, pink for camellias, etc.) as there is less chance of error in recording quantities on the backs of the cards as propagation is done, particularly when we are working on several different items in the cutting room at the same time.

The “Actual Total” is filled in at the end of the day or propagation period. This information is then recorded on a Master File (we use a 5” × 8” visible Kardex file) which is color coded to correspond with the Propagation Cards. (See Master File Card.) The Master File lets us see at a glance the history of a plant. When rooted cuttings are lifted for shipping later on, we make notations indicating the success of the propagation as a guide in the future. This works better on paper than it does in actual practice. We have yet to figure out what to do when identical treatments on the same day produce conflicting results. After the information is recorded on the Master File, the Propagation Cards are filed chronologically, thus giving us a day by day record of what went in.

**PROPAGATION SCHEDULE FOR MITTSCH NURSERY, AURORA, OREGON**

Shaded area: best time. Solid line: good. Broken line: do only if impossible to do at a better time.

Variety	Cultivar	Treatment	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
<b>JANUARY</b>														
Cedrus brevifolia		H45												
<b>AUGUST</b>														
Chamaecyparis obtusa	most cultivars	G5 H8												
Thuja orientalis	most cultivars	H8B												
<b>OCTOBER</b>														
Cedrus deodara	'Kashmir'	PG4												
Cryptomeria japonica	most cultivars	G10 H8B												
Juniperus chinensis	'Robust Green'	G4												
	'Plumosa Aurea'	G5 H8												
	'Sargentii'	H8B												
	'Shimpaku'	G4												
	'Torulosa'	G4 H8												
Jun. communis	'Effusa'	H8B												
Jun. sabina	tamariscifolia	H8B												
Jun. scopulorum	'Moonglow'	G4												
Jun. squamata	'Blue Star'	H8B												
	'Prostrata'	G5 H8B												
<b>NOVEMBER</b>														
Abies balsamea	'nana'	H8B												
<b>DECEMBER</b>														
Picea abies	'Little Gem'	H8B												
Picea pungens	'Montgomery'	H8B												
Tsuga canadensis	pendula and most other cultivars	G5 H8B												

Legend:

H45 = Indole-3-Butyric Acid 4.5

G5 H8 = Double dip: 1 part Dip' n Grow, 5 parts water; followed by H8, 0.8 Indole-3-Butyric

H8B = 8 oz. 0.8 Indole-3-Butyric Acid, 1 oz. Benlate.

PG4 = 1 part Dip' n Grow, 4 parts water. (Pre dipped; allowed to dry for 30 minutes).

G10 = 1 part Dip' n Grow, 10 parts water.

G4 = 1 part Dip' n Grow, 4 parts water.

PROPAGATION CARD

DATE: 1-20-75

VARIETY: Picea abies 'Little Gem'

Stock plant location if needed: A 30

Color of label W  
ACTUAL TOTAL 4275

# needed \_\_\_\_\_ OR: All possible All cut off

CUTTING SIZE: tip 1-2" 2-3" 3-4" 4-6" 6-9" See sample

TREATMENT:	H <sub>8</sub>	<u>H<sub>8</sub>B</u>	H <sub>16</sub> B	H <sub>30</sub> B	H <sub>45</sub> B		Submerge:
None	G <sub>5</sub>	G <sub>10</sub>	G <sub>15</sub>	G <sub>20</sub>	G _____		B D <u>B+D</u>
Same as last time	G <sub>5</sub> +H <sub>8</sub> B	G <sub>10</sub> +H <sub>8</sub> B					
	PG _____	PG _____	PG _____	PG _____	PG _____		

PLANT IN:

MIX:			Totals
Flats: # rows per flat	<u>10</u>	# plants per row	<u>25</u> ( <u>1750</u> )
Pots: size of pot	_____		( _____ )
Bed location:	<u>C-3</u>	# in row	<u>100</u> ( <u>2525</u> )

WATER ROOTING MEDIA BEFORE PLANTING; WATER AFTER PLANTING.

MITSCH NURSERY, Aurora, Oregon

For some cuttings, which in the propagation stages look very much alike, we are trying something new this year. On the Propagation Card, above the "Actual Total" we now have a place to indicate the color of the small identification label (name of cutting, treatment, date) to be placed in the flat or bed. Since there are only five colors of these labels available, we consequently have to use the same color over and over again. Thus we might use a green label for *Chamaecyparis obtusa* "Nana" and a yellow label for *Chamaecyparis obtusa* "Gracilis", etc. Since *Juniperus* does not look like *Chamaecyparis*, we can again use green for, say, *Juniperus horizontalis* "Plumosa Compacta" and yellow for *Juniperus horizontalis* "Aunt Jemima" etc. We are anticipating that this color coding will also help speed the locating of rooted cuttings during the shipping seasons. The color for the label is noted on the Master File. If the system works, we will use the same color of labels next year.

In making the sample Propagation Schedule, we selected those items which we hope will be of particular interest. Basic propagation information is given there for each one. The "G" in the treatment is "Dip'n Grow", whose chemical components are: 3-indolebutyric, 1.0%; a-naphthaleneacetic acid, 0.5%; Phygon (Dicholne), 0.1%; Rutin, 0.2%; Boron, 0.0175%; Dimethyl sulfoxide, 20.0%; Alcohol + deionized water, 78.18%.

Nearly all of our conifers are also treated with a fungicide such as Benlate and an insecticide, usually Diazinone (indicated on the Propagation Card by "B & D"). Most of our conifers are rooted in 1 part washed concrete sand, 1 part fresh fir sawdust, 1

part perlite, and 1 part peat moss. We find the greenhouse grind seems to give the porosity essential for good aeration. The "B & D" treatment referred to is made up of 1½ tbsp. Benlate and 1 tbsp. Diazinone 50W in 3 gallons of water.

*Cedrus brevifolia* is a little known tree which has patio and bonsai potential with its short, Alpine-looking needles. I think it should be better known. We have rooted this from January 15 to February 15 with H<sub>45</sub>. Most of the dwarf forms of *Picea abies* root quite readily during January to about February 15, using H<sub>8</sub>, including *Picea abies* 'Pendula' although it is slower and the percentage of "take" is not as high. We have put in very soft green cuttings of *Picea glauca* 'Conica' in May, using the same treatment under mist with good results. We have had varying degrees of success when we propagated this during late summer or in the fall; however, we have the best success during January to about February 15. For the most part, winter cuttings are propagated without mist over 72°F heat.

The majority of *Tsuga canadensis* cultivars are propagated January 1 to February 15 over bottom heat of about 75°F. We have also had good results with soft cuttings in July under mist.

*Picea orientalis* 'Aurea compacta' is another cultivar which is beginning to respond slowly to treatment of H<sub>8</sub>B after soaking overnight in B & D for rooted cuttings.

Our all-season sport is watching for negative and positive signs of sports on our dwarf conifers. Any variation or especially loose or long growth is carefully watched. Dwarf conifers are sometimes difficult to keep true to form because of sporting or as a result of propagating mainly from vigorous tips. They tend to lose their dwarf habits. However, occasionally a worthwhile variant appears to be sufficiently interesting to start propagating it.

Within the next year we hope to find some method of using solar energy with PVC pipe. Electric coils would supplement this as needed.