FOLIAGE NOTES

In the course of conducting foliage plant research we make observations or run mini experiments. Sometimes there is inadequate data for a major report, thus, here is a pot-pourri of notes.

Dwarf Brassaia

Dwarf Brassaia, *Schefflera arboricola*, cuttings were root-pruned to 2 inches and soaked in various "root regenerators" before planting in a UH mix. The concentrations were those recommended by the manufacturers. After a month the plants were removed from the pots and the soil washed off the roots. The root systems were evaluated as heavy, medium, or light and an index value calculated. A commercial rooting compound, Dip 'N Grow gave the highest root regeneration rating:

Treatment	Concentration	Duration of soak (min)	Rooting Index
Control			3.3
Hormex			
liquid	50 drops/gal	15	3.3
Fermalizer	1:40 parts	15	3.4
Superthrive	25 drops/gal	15	3.9
OD-4	2 tsp/quart	30	4.0
Dip 'N Grow	1:20 parts	10	4.5

Rooted cuttings of the Dwarf Brassaia were established in the UH potting mix and treated with soil drenches of growth retardants. The data, mean plant height and mean internode length for the last 10 internodes, were collected 8 weeks later. The most effective treatment was with ancymidol at 10 mg a.i. per plant.

Treatment mg/plant	Mean Plant height (cm)	Mean internode length (cm)
Control	41.7	2.7
Ethephon, 500	32.2	2.1
Chlormequat, 500	44.6	3.1
Ancymidol, 5	29.2	1.2
Ancymidol, 10	22.0	0.8

It was evident that the effects of the retardant drenches were out-grown as internode length was beginning to return to normal on treated plants by the 8th week. Ancymidol retarded growth longer than did ethephon, while growth of chlormequat-treated plants was greater than the controls in 7 out of 12 plants. There was little leaf loss from the ethephon-treated plants.

At the 1977 (Hawaii) prices for these growth regulators the treatments cost per plant was 56.5¢ for chlormequat, 21¢ for ethephon, and 78.4¢ and $1.57 for the two ancymidol treatments.

Dieffenbachia

Uniform, rooted cuttings of Dieffenbachia 'Rudolph Roehrs' were established under light levels of 7600, 4400, and 2400 foot-candles. While there were some differences in height three months later, the most noticeable effect was on the number of basal breaks. The highest light intensity yielded the tallest plants with the most breaks.

Light level (ft-c)	Ave. height (in.)	Ave. No. breaks
7600	22.6	4.6
4400	21.3	2.4
2400	20.2	2.0

Tall, single cane plants of Dieffenbachia 'Rudolph Roehrs' were decapitated to leave a leafless cane 20 inches tall. To the cut surface were applied lanolin pastes containing 0, 0.5, 1, 2 or 4 mg PBA/g lanolin, the number of new breaks was recorded and cuttings taken at varying time intervals. The cytokinin treatment was effective in stimulating additional breaks beyond the control, but the percentage which developed for the first harvest was not superior to the control plants. Over 3 harvests, there was only one cutting per plant advantage for the treated plants, and that was from the first harvest at 15 weeks after treatment. By the time the second and third harvests the cytokinin treatments were no longer effective. Repeat treatments at the time of taking cuttings could have stimulated more breaks. Treatments with 0.5, 1 and 2 mg PBA/g lanolin levels seemed to be most effective if the percent shoots which developed into harvestable cuttings is considered although the controls had the best rate. To carry more shoots to a harvestable stage, it may be necessary to provide fertilizer and higher light intensities (the mid-day light intensity was under 4000 ft-c).

Treatment (mg PBA/g lanolin)	No. breaks/plt 4 wk	Ave. harvested cutting 15 wk*	30 wk*	44 wk*	Total harvest/plt
0	5.0	3.2	4.2	1.6	9
0.5	8.0	4.4	3.8	2.8	11
1	8.2	4.0	3.8	1.2	9
2	7.2	3.8	3.8	2.4	10
4	8.4	4.0	3.8	2.8	10.6

*One leafy shoot allowed to remain when cuttings were harvested.

While tissue culture labs report success in tissue culture of dieffenbachia, the process is still time-consuming. Using the known stimulus to bud break of cytokinins seems to offer a simpler way.

Soft wooden dental toothpicks were soaked in 1% PBA in acetone and forced into dieffenbachia stem pieces about one-half inch above a dormant eye. The whole cane had been surface sterilized in hot water: formaldehyde (40:1, 125° F, 30 minutes) to reduce contamination. Single node cane pieces were cut and placed on sterile capillary mats soaked with White's inorganic medium and enclosed in clear plastic storage boxes. No lights were used, and the room temperature was 72° F. After 2–3 weeks, buds on the PBA-treated cane pieces were swelling and after 6–8 weeks leafy shoots had emerged although there was no rooting. A few buds on non-treated control canes did break, but during the course of

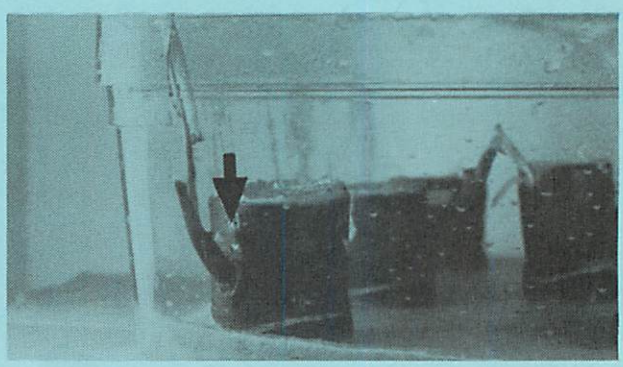

Fig. 1. Arrow points to cytokinin-saturated toothpick on single node cutting of *Dieffenbachia*.

observations it was evident that most of the non-treated cane pieces were undergoing physiological breakdown and would not sprout. At the conclusion of the experiment 3 months later 13 out of 14 (93%) single node cuttings which received the cytokinin toothpicks had sprouted but only 27% of the non-treated had sprouted with 31% still green and 42% dead. All the live, sprouted pieces were transferred to a soilless medium where rooting occurred in 3–4 weeks.

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