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HORTICULTURE

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University of Hawaii at Manoa

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INFLUENCE OF MIST ON ROOTING OF GRAPE IVY CUTTINGS

Grape Ivy (*Rhoicissus* 'Ellen Danica') is a popular indoor foliage plant often used in hanging baskets. However, its production may be limited at times by difficulty in propagation. This study was designed to investigate the influence of misting and misting frequency on rooting of terminal and leaf and eye cuttings.

The grape ivy cuttings used in this study were 3-leaf terminal cuttings and single node cuttings from the 5th node down containing a leaf, section of stem and an axillary bud or leaf and eye (L/E) cutting. The cuttings were rooted 12 per 4-inch cell pack in #2 vermiculite, replicated 5 times. Misting treatments consisted of 12, 18 and 24 seconds of intermittent mist each 6 minutes. The control group (0 mist) consisted of the current grower practice of hand misting several times per day. Cuttings were evaluated for rooting percentage and rooting index values.

Misting was found to have a significantly beneficial influence on rooting of grape ivy cuttings

compared to the non-misted control group when the cuttings were evaluated after 5 weeks (Table 1). However, the misting frequency used in this study had no effect on rooting percentage or rooting index ratings. Fifty-six and 42 percent of the terminal and L/E cuttings, respectively, were dead under the non-misted treatment compared to no losses for those cuttings receiving mist.

There was no significant difference in the number that had rooted between terminal and L/E cuttings but there were differences found in the rooting index value between these two types of cuttings. The rooting index is a measure of the amount of roots present (5 = all cuttings with heavy rooting). Since there was no difference between the misting frequency treatments, they were averaged together. Assuming an index value of 4 represents commercially acceptable rooting levels, terminal cuttings can be rooted (4.3 index value) in about 4 weeks under mist with better than 95% take, while L/E cuttings required an additional week for satisfactory rooting (4.0 index value).

Since grape ivy cuttings are normally marketed when they have at least 3 leaves, the L/E cuttings would require additional production time while terminal cuttings (with 3 leaves) would be ready for market or moving up to larger containers when sufficient roots had formed (4 weeks). However, under normal production of stock plants the number of terminal cuttings is often limited compared to available L/E cuttings.

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Table 1. The influence of cutting type and misting frequency on rooting of grape ivy, *Rhoicissus* 'Ellen Danica', after 5 weeks.

Misting Frequency	Rooting Percentage			Rooting Index ^x		
	Terminal	Leaf/eye	Mean	Terminal	Leaf/eye	Mean
sec/6 min						
0	30.0	36.4	33.2 b ^y	1.3	1.7	1.5 b
12	98.4	85.2	91.8 a	4.6	3.5	4.1 a
18	93.2	92.0	92.6 a	4.2	3.6	3.9 a
24	87.8	98.3	93.1 a	4.0	4.1	4.1 a
Mean	77.4 a	78.0 a		3.5 a	3.2 b	

^x 5 = heavy rooting; 3 = light rooting; 0 = dead

^y Mean separation within mist and cutting type by Duncan's Multiple Range Test, 5% level.

ALL AMERICA ROSE SELECTIONS

This year, the three 1984 All-America Rose Selection award winners continue to carry on that stream of new, different and always, each in its own way, a little better hybrid, destined for a place in the gardens of the world. This year's selections present a number of interesting firsts—a striking deep plum floribunda, the first of its color in that class; a rich crimson hybrid tea, the first red hybrid tea to win an AARS award in 19 years and, to add to its prestige, it will be the official rose of the 1984 Olympics (another first); a flashy orange/red large-flowered floribunda, resulting from a most unusual cross between a climber, America, and an unnamed seedling. Despite its parentage, it shows no tendency to climb.

Intrigue

The 1984 award winning floribunda has a unique color, opening from blackish-purple globular buds into 3-inch, deep plum-colored flowers, having a very attractive and distinctive old rose fragrance. *Intrigue* is a free bloomer in rather small clusters, but the flowers are so large that the size of the clusters make little difference.

The plant habit is ideal for a floribunda in that, though the canes are upright, the height of the plant is medium. Glossy, clean foliage, distinctly mildew resistant, provides an excellent background for the striking flowers.

Impatient

This shapely floribunda is an eyecatcher with its vibrant masses of orange-red blooms, thickly set on a perfect, mound-shaped bush. The clusters of flat 3-inch flowers of 20–25 petals, which age pleasantly, have a mild fragrance and are borne prolifically all season on an upright, vigorous 3–4 foot plant.

Olympiad

The color of this hybrid tea is a brilliant, clear crimson, long lasting, both in the garden and as a cut flower. The bloom does not age to an unattractive bluish-purple, as do most crimson varieties. The flowers average 4 to 5 inches in diameter, and are borne singly or in small clusters, on long, strong stems, making them ideal for cutting and have a slight tea fragrance.

The plant is of medium height, averaging 3 to 5 feet in most localities, with large and abundant medium-green foliage, good disease resistance and hardiness. Its repeat blooming cycles are improved if the old flowering stems are cut off by at least two-thirds of their length.

A useful leaflet "Roses Are For You" is available on request. This publication covers just about everything you need to know regarding rose bed location and preparation, planting, care, culture, cut flower handling, and special rose do's and don'ts in brief, concise terms.

A copy will be sent at no charge upon receipt of a self addressed, stamped, business size envelope. Address request to: All-America Rose Selections, P.O. Box 218, Shenandoah, Iowa 51601.

An old Christian legend tells of Eve in the garden of Eden kissing a white rose which blushed so with pleasure that it has been pink ever since. This same legend also tells us that the rose was first thornless, but when Adam and Eve were expelled from the garden, the rose grew thorns.



Impatient



Intrigue



Olympiad

DORSTENIA

Dorstenia, the inside-out plant, is a herbaceous member of the fig family, which has been of interest chiefly among hobbyists growing cactus and succulents. It is not, however, cactus-like or succulent-like in its growth. The stem tends to be a thick rhizome from which leaves and axillary inflorescence structures arise. It is the inflorescence, which looks like a fig turned inside out, which gives the plant its common name. Foliage characteristics differ among the species, ranging from shiny dark green to coarse light green and simple to deeply lobed blades.

A popular species is *Dorstenia contrajerva* from the tropical Americas. The plants have a thick rhizome bearing 8 to 10 leaves 5 or more inches in diameter, deeply incised into 5 lobes, the surfaces of which are splotted with silver. The flat, squarish flowers are borne year-'round on long stalks above the leaves. Each inflorescence produces 20-50 seeds which are forcibly ejected and which germinate rapidly. Salable plants develop in 3 to 4 months, even under relatively low (@ 400 ft-c) light conditions although they will also do well at 5000 ft-c. These are understory plants in the wild or epiphytes, growing where the light level is low,

humidity is high, and nutritional conditions may be marginal.

At the University of Hawaii, we have an unknown species which populated a portion of our saran house with seedling plants. We decided to see if they would respond to a higher nutrient regime than luck or happenstance of a seed landing on a fertile spot would provide.

Seedlings with 3-4 true leaves were transplanted into 4" pots containing a mixture of black cinder, peat, and wood shavings (1:1:1 by volume) amended with dolomite and treble superphosphate at 4 oz. and 2 oz. per cubic foot of medium, respectively. The pots received slow release fertilizers at the rates of 0.25, 0.50, and 1.0 grams nitrogen/pot from Osmocote 14-14-14, Scotts 24-4-16, Scotts 21-3-13 plus minor elements, and Agriform 14-4-6 tablets. A control receiving no fertilizer amendment was included. At two week intervals plants were watered lightly with a minor element solution (Greenzall, a Gaspro product containing chelates of Mn, Fe, Cu, and Zn) at 1 oz./gallon. The pots were placed on a capillary mat for irrigation. There were 6 replicates of each treatment in a completely randomized design.

Data were collected at 16 weeks: numbers of

Table 1. Growth of *Dorstenia* sp. as influenced by fertilizer source and nitrogen level.

Fertilizer	N rate	No.FI	No.Lv	No.Gr Pt	Ht	Diam	Fwt
	gm/pot				cm	cm	gm
Control		5.2	11.2	1.8	9.2	24.2	18.2
Osmocote	0.25	10.4	19.0	3.2	16.6	45.2	60.1
14-14-14	0.50	7.4	11.8	2.2	18.4	40.8	49.1
	1.00	9.8	15.6	2.8	19.2	43.4	73.5
Scotts	0.25	5.8	12.0	2.4	9.8	27.4	20.7
24-4-16	0.50	5.6	11.4	1.6	11.8	29.8	24.2
	1.00	6.6	11.8	2.0	14.2	34.2	31.8
Scotts	0.25	6.2	11.8	1.8	15.8	31.4	29.0
21-3-13 +	0.50	7.0	12.0	1.8	15.2	39.4	32.5
minors	1.00	8.4	14.0	2.6	12.6	39.4	35.7
Agriform	0.25	4.0	8.6	1.4	10.6	28.0	18.1
14-4-6	0.50	7.6	13.0	1.6	12.2	32.2	31.8
	1.00	5.8	12.6	2.6	12.4	32.0	30.4
Nitrogen Level	0.25	6.6	12.8	2.2	13.2	33.0	31.9
	0.50	6.9	12.0	1.8	14.4	35.6	34.4
	1.00	7.6	13.5	2.5	14.6	37.2	42.8

flowers, leaves, and growing points, height to top of leafy canopy, diameter, and fresh weight. Results appear in Table 1.

Of the variables examined, fresh weight, number of growing points, and size (as height or width) are considered to represent best the effects of treatment. All fertilizer treatments ranked higher than no fertilizer. Considering the relative importance of these variables, Osmocote was superior to the other fertilizers, followed by Scotts 21-3-13, Scotts 24-9-16, and the Agri-form 14-4-6 tablet.

The fertilization rate was based on nitrogen level and the highest N rate, 1 gram/pot, was generally superior although this varied somewhat among the 4 fertilizer sources. The potassium contents of the 3 top fertilizers were similar, but the amounts supplied differed, as did phosphorus, depending on the amount of N in the fertilizer. Thus, the Osmocote supplied more P and K than did the other fertilizers. Whether the superiority of Osmocote was due to its higher analysis or to the elemental balance is difficult to say, but *Dorstenia* clearly responded to fertilization with the best growth and most flowers in the Osmocote treatments.

Richard A. Criley
Horticulturist

NEWS FROM AAN

New Journal for Publication

The *Journal of Environmental Horticulture* was introduced by the Horticultural Research Institute early in 1983 to provide a new vehicle for rapid communication of relevant research findings to a broad readership in the nursery and scientific communities.

The editor of the *Journal* is Dr. Thomas Fretz, head of the Department of Horticulture at Virginia Polytechnic Institute and State University. According to Fretz, the papers to be considered for publication in the *Journal* will be reports of original research, either basic or applied, and review articles related to environmental horticulture.

The *Journal* is a quarterly publication and is intended to bridge the gap between growers and the scientific community. For further information, contact the Horticultural Research Institute, Dept. WLN, 230 Southern Building, Washington, D. C. 20005.

Address Change

The American Association of Nurserymen have moved their office to:

Suite 500
1250 Eye Street, N.W.
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(202) 789-2900

NURSERY NOTES

Several research reports have appeared recently in scientific journals which have application to ornamental production in Hawaii. Abstracts of some of these are presented for your information. If further information and details of the research is desired, reprints are usually available by contacting the author.

HortScience 18(1):82-83. 1983.

Influence of Production Light Levels on Long-term Effects of Dark Storage on the Postharvest Keeping Quality of *Schefflera arboricola*

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Additional index words. acclimatization, dwarf schefflera, foliage plant

Abstract. *Schefflera arboricola* Hayata ex. Kanehira was grown under light levels of 240, 480, and 720 $\mu\text{E m}^{-2}\text{s}^{-1}$. Plant grade and width were greatest when plants were produced under low light level but plant height and stem caliper were least. Leaf chlorophyll content was significantly lower under the high production light level than at medium or low levels. After subjecting plants to 0, 3, 6, 9, or 12 days of dark storage and a subsequent 12-week period indoors, growth index, fresh weight, and chlorophyll content generally were less as dark-storage duration increased. Leaf drop was greater and plant grade was lower as the duration of dark storage increased regardless of production light levels. After 12 weeks indoors, plants produced under 240 $\mu\text{E m}^{-2}\text{s}^{-1}$ and held for a period up to 6 days of dark maintained better plant quality than plants produced under the higher light levels.

HortScience 18(1):85-86. 1983
Reaction of *Hibiscus rosa-sinensis* Cultivars to
Two Species of Root Knot Nematodes

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search and Education Center, 18905 SW 280 St.,
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Additional index words. *Meloidogyne incognita*,
Meloidogyne javanica

Abstract. The responses of 13 cultivars of *Hibiscus rosa-sinensis* L. to *Meloidogyne javanica* (Treub) Chitwood and of 12 cultivars of *H. rosa-sinensis* to *M. incognita* (Kofoid & White) Chitwood were determined in 2 greenhouse inoculation experiments. 'Pride of Hankins' was highly susceptible to *M. javanica*, 'Philipino' was highly susceptible to *M. incognita*, and several other cultivars showed moderate levels of galling from the latter species. The cultivars which were least susceptible to both nematode species were 'President', 'Florida Sunset', 'Old Gold', 'Go-Go Girls', 'Anderson Crepe', and 'Delight'.

HortScience 18(2):191-193. 1983.
Influence of Simulated Shipping Environments
on Foliage Plant Quality

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Additional index words. *Ficus benjamina*, *Schefflera arboricola*, *Chrysalidocarpus lutescens*, *Dracaena marginata*, chlorosis, chlorophyll

Abstract. Simulated shipping of *Chrysalidocarpus lutescens* H. Wendl., *Dracaena marginata* Lam., *Ficus benjamina* L., and *Schefflera arboricola* Endl. for 7, 14, 21, or 28 days at 10°, 13°, 16°, or 19°C indicated that long-term shipping is possible while maintaining plant quality. *Schefflera* shipped best at 10°, *Ficus* at 10° or 13°, and *Chrysalidocarpus* and *Dracaena* at 13°, 16°, or 19°. Simulated shipping durations of up to 21 days were obtained on all species without significant loss of quality, and 28-day durations were possible at selected temperatures without severe quality reductions.

HortScience 18(2):185-187. 1983
Establishment and Growth of In Vitro-cultured
Dieffenbachia

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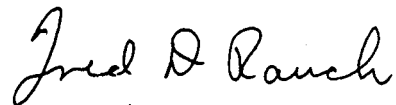
Additional index words. growing mixture, ferti-
lization, acclimatization, temperature, microcut-
tings

Abstract. Size of plant, maximum greenhouse temperature, and fertilizer level were major factors in the growth of tissue-cultured plants of *Dieffenbachia maculata* (Lodd.) G. Don (dumb-cane), but mist, growing mixtures, and rooting hormones had minimal influence. Larger plants performed better than smaller ones. Maximum greenhouse temperatures of 38° and 44°C were detrimental to growth. Addition of fertilizer was beneficial, but excess fertilizer slowed subsequent growth.

FOOD FOR THOUGHT

The longer we live the more we realize that the people who want to help themselves can only do so by helping others. It's a basic law of success. The person who begins by asking how he or she can find success solely within himself is doomed from the start. The rewards go to people who have searched diligently for a way to help others.

NOTE: The use of trade names is for the convenience of readers only and does not constitute an endorsement of these products by the University of Hawaii, the College of Tropical Agriculture and Human Resources, the Hawaii Cooperative Extension Service, and their employees.



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