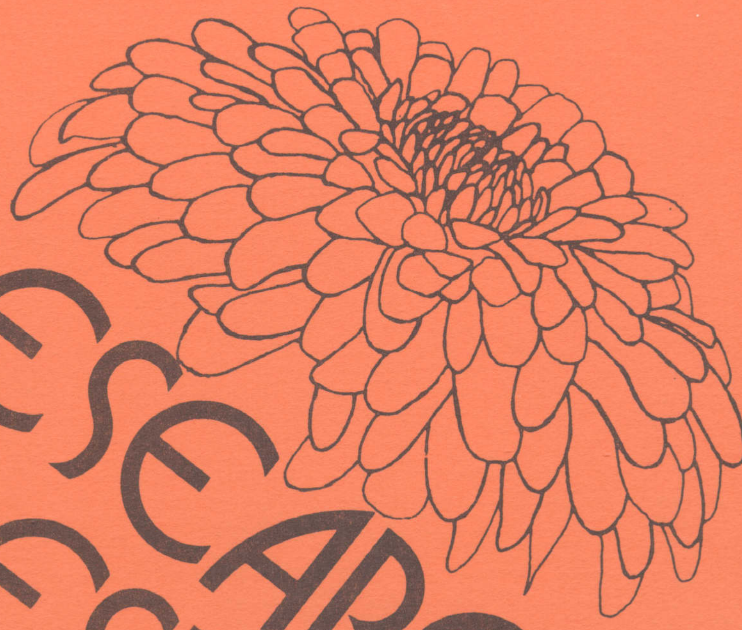
RESEARCH RESULTS FOR ORNAMENTAL HORTICULTURISTS



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Auburn University
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Gale A. Buchanan, Dean and Director
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Fertilization of Roosevelt's Fern (*Nephrolepis exaltata* (L.) Schott Cv. Rooseveltii)

D. James Crockett, Charles H. Gilliam,
Ronald Shumack and Clyde E. Evans

Nature of Work: This research was designed to determine the effects of rate and frequency of fertilizer application on growth, nutrient content, and color of the Roosevelt's fern. Uniform 70 cm tissue culture liners were potted on August 14, 1980 into 15 cm plastic pots containing Metro Mix 300. Three rates of N (50, 150, and 300 ppm) from Peter's 20-20-20 were applied once, twice and three times weekly. Each solution was added until the medium was saturated. Plants were grown under natural photoperiod in a greenhouse which ranged from 25 to 33^{o} C. A randomized block design was used with 5 replications of 4 plants each. The experiment was terminated at 12 weeks.

Results and Discussion: Fern dry weights increased with increasing fertilizer rates. Plants treated with 150 ppm N twice weekly resulted in fern dry weights equal to or greater than the other treatments. Frond number responded similarly.

Tissue N also increased as N rates increased. Increasing the frequency of a N rate did not increase foliar N content. The greatest dry weights occurred when tissue N was greater than 2.0%; however frond color was enhanced when foliar N was 3.4 to 3.6% (300 ppm N applied two and three times weekly, respectively).

Applied P and K increased with increased N levels. Foliar P concentrations did not vary among treatments with the exception of 50 ppm N. Greatest dry weight occurred when tissue P concentration ranged from .73 to .81%. K concentrations did not vary with increased K fertilization.

Effects of Glyphosate on Three Field Grown Woody Ornamentals

Charles H. Gilliam and D. James Crockett

Nature of Work: Glyphosate (Roundup) was applied with a CO_2 sprayer at 27 psi in 20 gallons of water per acre at 3 rates: 1/2, 1 and 2 lb/A ai during June and August of 1980. Directed sprays were applied to the base of *Nandina domestica*, *Photinia fraseri*, and *Gardenia radicans*. Lower foliage of these plants received some glyphosate. One additional treatment, an over the top wick application of Roundup and water (1:1), was applied in August. There were 4 replications of 4 plants each. Data collected included % weed control, growth, and hoeing time. Three primary weeds in this study were Johnsongrass (*Sorghum halepense*), Bermudagrass (*Cynodon dactylon*), and yellow Nutsedge (*Cyperus esculentus*).

Results: Postemergence directed sprays of glyphosate increased percent weed control with increasing rate of application. All plants were of acceptable quality with the exception of the wick application. Glyphosate provided 90 to 95% weed control of both grass species 90 days after the second application. Control of Nutsedge was limited during the first year; however, populations of all 3 of the primary weeds were reduced during the second year of the study.

Plant height and width of Gardenia were not affected by directed sprays of glyphosate at any rate. When glyphosate was applied to Nandina at the 2 pound ai rate, both plant height and width were suppressed. The 1 pound rate reduced Nandina width, but not height. With Photinia, the 1 and 2 pound rates increased plant height when compared to the 1/2 pound rate.

Use of glyphosate alone did not reduce the necessity for hoeing. However, use of the recommended rate of glyphosate resulted in at least a 60% reduction in the hoeing time compared to the hand weeded checks of Photinia and Gardenia.

Tolerance Evaluation of Five Postemerge Herbicides for Container Weed Control

Cecil Pounders and Charles Gilliam

Nature of Work: Most container nurseries have weed problem areas where preemergence herbicides fail to give control. Among the reasons for poor control are improper application techniques, unfavorable environmental factors or incorrect herbicide selection. Effective postemergence herbicides could give nurserymen an alternative to hand-weeding for cleaning up many of these areas where preemergents do not provide satisfactory control.

Roundup has been evaluated for this purpose (1) on a number of plant cultivars. Several other materials have been tested for postemergence control of winter weeds (2), but plant tolerance to herbicides is generally greater during dormancy thus more injury would be expected from spring and summer applications than from late-fall winter treatments.

Five herbicides (Poast, Blazer, Goal, Basagran, Roundup) which have given postemergence control of weeds in field crops were selected to determine plant tolerance of Crimson Pygmy Barberry (*Berberis thunbergi atropureanana*), Rotunda Holly (*Ilex cornuta*), Liriope (*Liriope muscari*), Blue Rug Juniper (*Juniperus horizontalis wiltoni*) and Fraser's Photinia (*Photinia* X *Fraseri*).

All plants were growing in a pine bark and sand mix in one gallon containers under standard nursery practices. One over the top application of the treatments listed in Table 1 was made on July 1, 1980. All treatments were applied with a CO_2 backpack sprayer in 15 gallons of water per acre. Experimental design consisted of four replications of four plants each. Atplus surfactant oil was used in accordance with label instructions with Basagran and Poast treatments.

Results and Discussion: Basagran produced the greatest injury of the five chemicals in the study. It was particularly injurious to Blue Rug Juniper in that all plants were killed. Pygmy Barberry was also very sensitive to Basagran.

Goal and Blazer produced similar results on four of the five plant cultivars. Goal was very injurious to Pygmy Barberry while Blazer gave no apparent injury. Injury produced by both chemicals consisted primarily of leaf spotting and deformation.

Roundup produced some stunting of Fraser *Photinia*. It killed stems and severely stunted Pygmy Barberry.

Applications of Poast resulted in little or no plant injury. No stunting or foliar injury was observed on any of the five species at either the .5 or 1 lb./AI rate. The material enhanced the color of Pygmy Barberry by giving the leaves a deeper red color. Manufacturer research indicates Poast to have herbicide activity on grasses only.

Literature Cited:

1. Cobb, Gary S. and R. Self. 1979. Observations of phytotoxicity of foliar applications of Roundup to nine ornamental species. *Proc. S.N.A. Research Conference* 25:251-252.

2. Pounders, Cecil and T. Whitwell. 1979. Postemergence winter weed control in containers. *Proc. S.N.A. Research Conference* 25:243-245.

Table 1

Treatment	AI/Acre	$\bar{X}$ % Injury Rotunda Holly	Pygmy Barberry	Liriope	Blue Rug Juniper	Fraser Photinia
1. Poast	.5	4	0	0	0	3
2. Blazer	.5	16	0	0	0	19
3. Goal	.5	15	40	0	0	21
4. Basagran	1.0	15	50	10	100	9
5. Roundup	.5	5	50	0	0	15
6. Poast	1.0	1	0	0	0	3
7. Check	---	0	0	0	0	0

Propagation of Clerya japonica (Ternstraemia gymnanthera) by Cuttings

Fred B. Perry, Jr., Charles H. Gilliam,
and D. Joseph Eakes

Nature of Work: Seed propagation of Clerya japonica is normally practiced in nurseries producing much variability among the seedling offspring. These plants vary considerably in form, dwarfness, color, and vigor. Cutting propagation would allow selection of clones with more dependable characteristics.

One study was initiated in 1980 at the Alabama Agricultural Experiment Station to determine the effects of four rates of NAA and four rates of IBA at three different dates on rooting of Clerya japonica. A second study evaluated the effect of the time of year cuttings were taken at one rate of IBA.

Terminal cuttings 4 in. (10 cm) long from Clerya japonica plants were made on June 23, 1980, October 10, 1980, and February 21, 1981. Leaves from the basal 1/3 of each cutting were removed and a light wound 0.5 cm wide was made on the lower 2 cm of the stem. Treatments consisted of dipping the base of the cuttings in talc preparations of NAA or IBA containing 5% Benlate. The talc preparations were: NAA at .25%, .50%, .75%, and 1.00% + 5% Benlate; IBA at 0.5%, 1.0%, 1.5%, and 2.0% + 5% Benlate; and a control of talc + 5% Benlate.

Cuttings were then inserted into 6 x 8 mini pot trays, 2-3/8" deep containing a moist medium of sphagnum peat and perlite (1:1 v/v). Flats containing the mini pots were placed under intermittent mist scheduled to be on 2.5 seconds every 5 min. during the daylight hours. A randomized complete block design was used with the following number of cuttings per treatment and number of replicates according to three dates: 6-23-80, 6 cuttings - 5 replications; 10-15-80, 12 cuttings - 3 replications, and 2-21-81, 12 cuttings - 5 replications. A minimum bottom heat temperature of 70^{o} F was maintained.

In the second study, seasonal effects on rooting, cuttings were prepared every 2 weeks beginning the third week of June for 10 propagation dates. IBA, at 0.3% in talc + 5% Benlate, was the only hormone treatment. Cutting preparation and handling was as described above. A complete randomized block design with 18 cuttings per treatment and 4 replications was used.

Results and Discussion: In the first study, the percent rooting of Clerya rootings without any hormone treatment reduced from 67% in June to 13% in February cuttings. NAA treated cuttings were no better rooted than the control in October and were inhibited by increasing rates in June cuttings. However, February cuttings treated with 0.5% NAA yielded 82% rooting. Although increasing rates of IBA from .5% to 2.0% gave greater rooting percentages at all dates, the best results (93% rooted) were obtained with June cuttings treated with 2.0% IBA. These rooting percentages reduced to 75% in October and 70% in February cuttings.

In the second study, the use of 0.3% IBA + 5% Benlate steadily increased rooting of cuttings from June until September. Cuttings taken every 2 weeks from September 22 to November 11 averaged from almost 90% to 99% rooting with best results being 99% from September cuttings.

From these data, excellent rooting (93%) was observed on late June cuttings of Clerya treated with 2.0% IBA in talc + 5% Benlate. However, cuttings taken from the latter part of September through early November responded with 90-99% rooting when treated with 0.3% IBA + 5% Benlate.

Comparison of Slow Release Fertilizers on the Growth of Schefflera, _Brassaia actinophylla_ Endl.

Kenneth C. Sanderson, Willis C. Martin, Jr., and Lih-Jyu Shu

Nature of Work: Slow-release fertilizers have been used in the nursery industry because of their ability to supply nutrients over an extended period of time. Quality of woody ornamentals grown with slow-release fertilizers has been found to be equal or poorer than from liquid fertilization. Objectives of this study were 1) to compare urea formaldehyde fertilizers developed by the O. M. Scott Co., Osmocote formulations by Sierra Chemical Company and Peters liquid fertilizer by Robert B. Peters Company on Schefflera, _Brassaia actinophylla_ Endl. growth and 2) to compare the rate of nutrient release of the test slow-release fertilizers.

A medium consisting of equal portions of builder's sand, sphagnum peat moss, and pine bark amended with 7.1 lb. (3 kg) dolomitic limestone, 1.4 lb. (0.6 kg) Perk minor element additive, and 2.2 oz. (65 ml) Aqua-Gro wetting agent per cu. yd. ($0.8m^3$), was used in growth and medium analyses. Schefflera seedlings, 4-6 inches (10-15 cm) tall were transplanted into 6-inch (15 cm) pots and grown under standard greenhouse conditions for foliage plants. Prior to transplanting, the slow-release fertilizers in Table 1 were incorporated into the media. A high and low rate, based on the nitrogen applied, was used for each slow-release fertilizer. A liquid fertilizer treatment, Peters' 20-20-20, applied at the rate of 2 lb. per 100 gal. (2.4 g/liter) every 2 weeks, was also included. A randomized block design with 4 replications of 4 plants per treatment was used. Data on plant height, dry weight, and foliage color (1 = light green, 2 = medium light green, 3 = medium dark green, and 4 = dark green) were taken 5 months after treatment.

Media containing the low rates of Osmocote 14-14-14, Scott 25-10-10, Scott 23-9-9, and Scott 27-3-13 were placed into 6-inch (15 cm) pots and irrigated until water drained through the pot. Media were than irrigated as needed (soil kept moist) by adding 6 oz. (180 ml) of water to each pot. At the 5th, 10th, and 25th irrigations, the media were collected and analyzed for nitrogen (N), phosphorous (P), potassium (K), pH, and soluble salts. There were three replications of one pot each in a randomized plot design.

Results and Discussion: Most of the fertilizer treatments resulted in plants with similar heights. Scott 27-3-13 (8.1 lb./yd^3) plants had greater dry weights than plants of five of the fertilizer treatments. Plants fertilized with Peters' liquid 20-20-20, Osmocote 18-6-12 (12.2 lb./yd^3), and Scott 25-10-10 (4.4 lb./yd^3) were similar in dry weight. Osmocote 14-14-14 (15.6 lb./yd^3) produced plants with the least dry weight but three other treatments had similar weights. Plants grown with Scott 25-10-10 (8.8 lb./yd^3) were shorter than plants fertilized with Peters' liquid 20-20-20 and Scott 23-9-9 (5.4 lb./yd^3) had the best foliage color, medium light green, of any fertilizer treatment. A darker green foliage color would have been desirable.

Ranging from 346 ppm (5th irrigation) to 124 ppm (25th irrigation), medium of Osmocote 14-14-14 had the highest N concentration. Scott 27-3-13 medium had the lowest N concentration. Osmocote 14-14-14, Scott 27-9-9, and Scott 27-3-13 media had high P concentrations at the 5th irrigation, however, only Osmocote 14-14-14 and Scott 23-9-9 media had P concentrations in excess of 50 ppm at the 25th irrigation. All fertilized media had K concentration in excess of 150 ppm at the 5th irrigation. High K concentration continued through the 10th irrigation, however, readings of Scott 25-10-10 medium (80 ppm) were almost half of the media concentrations from the other fertilizers (140 to 197 ppm) at the 25th irrigation. Unfertilized medium had a pH of 6.3-6.4. Osmocote 14-14-14 medium had a pH of 5.5-5.6. Scott 23-9-9 (5.9 at the 25th watering) was the only other fertilizer to cause a sizeable reduction in medium pH. Soluble salts readings for the fertilized media were relatively low. Osmocote 14-14-14 medium had a reading of 160 millemhos at the 10th irrigation and this was the highest reading of the experiment. Higher rates of Osmocote 14-14-14 need to be studied for their effect on soluble salts.

Table 1. Height, Dry Weight and Foliage Color of Schefflera, Brassaia actinophylla Endl. Growth With Various Fertilizers

Fertilizer	Rate lb./yd^3	kg/m^3	Height (cm)^z	Dry Wt. (g)^z	Foliage Color^y
Peter's liquid 20-20-20	-- x		31.9a^w	26.2abc	1.2b
Osmocote 14-14-14	15.6	9.2	24.8bc	17.5d	1.3b
Osmocote 14-14-14	7.8	4.6	25.4bc	25.0bc	2.1a
Osmocote 18-6-12	12.2	7.2	26.1abc	26.7abc	1.3b
Osmocote 18-6-12	6.1	3.6	25.4bc	24.8bcd	1.4b
Scott 23-9-9	10.7	6.3	26.3abc	31.4ab	1.1b
Scott 23-9-9	5.4	3.2	30.3ab	26.3abc	1.3b
Scott 27-3-13	8.1	4.7	29.4abc	33.2a	1.3b
Scott 27-3-13	4.1	2.4	29.4abc	23.3cd	1.4b
Scott 25-10-10	8.8	5.3	23.3c	21.7cd	1.1b
Scott 25-10-10	4.4	2.6	29.1abc	26.8abc	1.2b

^{z}Conversions: metric to U.S. 2.5 cm = 1 inch. 28 g = 1 ounce.

^{y}Foliage color ranked: 1 = light green, 2 = medium light green, 3 = medium dark green, and 4 = dark green.

^{x}Liquid fertilizer applied at the rate of 6-8 oz. of solution (2 lb. 20-20-20 per 100 gal. (2.4g/liter) per 6-inch (15 cm) pot.

^{w}Means in columns followed by the same letter(s) are not significantly different at 5% level by Duncan's multiple range test.

Table 2. Nutrient Concentration, pH and Soluble Salts of Leachates from Various Slow-Release Fertilized Media After 5, 10 and 25 Waterings

Fertilizer	Rate lb./yd^3	kg/m^3	Nutrient concentration (ppm) Nitrogen			Phosphorous			Potassium			pH			Soluble salts (millemhos)		
			Irrigations														
			5	10	25	5	10	25	5	10	25	5	10	25	5	10	25
None	---	---	4	3	10	19	15	9	32	35	26	6.4	6.3	6.3	39	29	26
Osmocote 14-14-14	7.8	4.6	346	192	124	242	149	64	402	432	197	5.6	5.6	5.5	87	160	95
Scott 25-10-10	4.4	2.6	28	38	83	141	91	35	152	193	80	6.4	6.2	6.1	52	50	38
Scott 23-9-9	5.4	3.2	7	52	84	155	71	54	199	210	140	6.4	4.1	5.9	67	60	55
Scott 27-3-13	4.1	2.1	14	56	68	34	24	21	250	148	170	6.3	6.2	6.2	63	46	47

Effect of Supplementary Light and Gibberellic Acid on Atrinal-Treated Azalea Cv. Kingfisher Shoots

Kenneth C. Sanderson, Willis C. Martin, Jr., and Lih-Jyu Shu

Nature of Work: Dikegulac sodium (Atrinal™) has been found to be an effective chemical pinching agent on azaleas, Rhododendron cv. (1,3). While increasing shoot numbers, dikegulac sodium delays shoot growth for 5 to 6 weeks after application (4). This delay and growth retardation are of considerable concern to azalea growers who must schedule the production of a shoot prior to applying procedures for flower bud initiation and development. Quite often this scheduling is critical because natural environmental conditions are used in flower initiation and development.

Preliminary work by the authors (2) indicated that supplementary lighting and gibberellic acid might stimulate shoot growth of dikegulac sodium-treated azalea plants. The present investigation considers the effects of a lower concentration of gibberellic acid and supplementary light on shoot number and shoot length at 3 node positions.

Plants of the azalea cv. Kingfisher were sheared to a uniform height of 7 inches (17.5 cm) on July 10. Plants were grown in a greenhouse. A short-day treatment (8 hr) was provided at shearing by covering the plants 4:30 PM to 8:30 AM each day. A long-day treatment was also established by lighting covered plants from 10 PM to 2 AM (8 + 4 hr) with approximately 10-20-ft-c (at the top of the plant) of incandescent light. On July 17, a 5,000 ppm dikegulac sodium spray was applied to half of the plants in each light treatment at the rate of 0.7 oz. (20 ml) per plant. The remaining plants (check) received no spray. Gibberellic acid (KGA_3) treatments of 0, 20, 100, and 500 ppm applied on July 31 at the rate of 0.5 oz. (15 ml) per plant. The experiment was designed as a split plot, with light treatments as main plots and dikegulac sodium and gibberellic acid treatments as sub-plots and sub-sub plots, respectively. Nodes were numbered from 1 to 3 starting at the apex of the plant or shearing point. Shoot lengths were measured on shoots developing from nodes 1 to 3 on September 15. Total shoot number per plant was also determined at this time.

Results and Discussion: There were no differences in the number of shoots as a result of photoperiod treatments. Under both photoperiods, dikegulac sodium-treated plants had more shoots than check plants (Table 1). Gibberellic acid did not influence the shoot number of plants grown on the 8 hr. photoperiod; however when plants were grown on the 8 + 4 hr photoperiod and when photoperiod data were combined, a 500 ppm KGA_3 spray reduced shoot number (Table 2).

Photoperiod treatments produced significant differences in the length of shoots developing at node 2 (8 hr = 60.0b v.s. 8 + 4 hr = 65.5a) and node 3 (8 hr = 59.3b v.s. 8 + 4 hr = 64.9a) but not at node 1 (8 hr = 57.1a v.s. 8 hr + 4 = 55.1a). Dikegulac sodium caused a significant reduction in shoot length at all node positions and photoperiods with the exception of shoots developing at node 3 under the 8 + 4 hr photoperiod (Table 3). When the photoperiod data were combined, dikegulac sodium reduced shoot length at all node positions. Sprays of KGA_3 did not significantly influence the length of the shoots at any node positions when plants were grown on the 8 + 4 hr photoperiod and at node 3 on the 8 hr photoperiod (Table 4). At nodes 1 and 2 under the 8 hr photoperiod, plants sprayed with 500 ppm KGA_3 had longer shoots than check plants. When the photoperiod data were combined, KGA_3 sprays did not significantly influence shoot length at node 3, however plants receiving 100 or 500 ppm KGA_3 sprays produced longer shoots at nodes 1 and 2 than untreated plants.

This study shows that dikegulac sodium increases shoot number and decreases shoot length of sheared azaleas. Supplementary lighting during short photoperiods (8 hr) increases the length of shoots produced at nodes below the first node on the plant stem. Sprays of KGA_3 increased the length of shoots produced at nodes near the top of the stem on plants grown on a 8 hr photoperiod.

Publications:

1. Sanderson, K. C. and W. C. Martin, Jr. 1977. Effect of dikegulac as a post-shearing shoot-inducing agent on azaleas, Rhododendron spp. HortScience. 12:337-338.

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3. Shu, L. J. and K. C. Sanderson. 1979. Comparisons of several chemical pinching agents on azaleas. Proc. SNA Res. Confr. 24:201-202.

4. Sanderson, K. C. and W. C. Martin, Jr. 1980. Dikegulac sodium influences shoot growth of greenhouse azaleas. HortScience 15: 813-814.

Table 1. Effect of Dikegulac Sodium (Atrinal™) on Total Number of Shoots on Azalea Cv. Kingfisher Plants Grown Under Two Photoperiods.

Dikegulac Sodium (ppm)	Photoperiod 8 hr	Photoperiod 8 + 4 hr	Mean
0	78.7b[z]	80.4b	79.5b
5,000	102.5a	116.9a	109.9a
Mean	90.6a	98.8a	

[z]Means within a box having the same letter or letters are not significantly different by Duncan's multiple range test, 5% level.

Table 2. Effect of Gibberellic Acid (KGA_3) on Total Shoot Number of Azalea Cv. Kingfisher Plants Grown Under Two Photoperiods.

Gibberellic Acid (ppm)	Photoperiod 8 hr	Photoperiod 8 + 4 hr	Mean
0	76.4a[z]	106.0a	92.2ab
20	95.6a	106.0a	101.4a
100	95.5a	101.8a	98.6a
500	90.8a	75.0b	83.4b
Mean	89.8a	98.0a	

[z]Means within a box having the same letter or letters are not significantly different by Duncan's multiple range test, 5% level.

Table 3. Effect of Dikegulac Sodium (Atrinal) on Shoot Length at Three Node Positions of Azalea Cv. Kingfisher Plants Grown Under Two Photoperiods.

Dikegulac Sodium (ppm)	Photoperiod		
	8 hr	8 + 4 hr	Mean
Shoot length at node 1 (mm)[z]			
0 (check)	70.7a[y]	65.6a	68.2a
5,000	41.6b	43.8b	42.8b
Shoot length at node 2 (mm)			
0 (check)	70.2a	73.9a	72.1a
5,000	48.3b	56.8b	52.6b
Shoot length at node 3 (mm)			
0 (check)	66.4a	73.1a	69.7a
5,000	50.8b	56.5a	53.8b

[z]Node position counted from the plant apex or shearing point.

[y]Means within columns for node position having the same letter or letters are not significantly different by Duncan's multiple range test, 5% level.

Table 4. Effect of Gibberellic Acid (KGA_3) on Shoot Length at Three Node Positions of Azalea Cv. Kingfisher Plants Grown Under Two Photoperiods.

Gibberellic Acid (ppm)	Photoperiod		
	8 hr	8 + 4 hr	Mean
Shoot length at node 1 (mm)[z]			
0	48.0b[y]	50.0a	49.1c
20	52.5ab	53.0a	52.8bc
100	62.8a	57.3a	60.0ab
500	63.6a	60.6a	62.2a
Shoot length at node 2 (mm)			
0	51.3b	55.0a	53.3b
20	60.3ab	73.2a	67.2a
100	61.7ab	63.9a	62.8a
500	65.5a	71.0a	68.1a
Shoot length at node 3 (mm)			
0	49.8a	61.2a	55.8a
20	55.0a	61.5a	58.4a
100	66.9a	67.0a	66.9a
500	64.4a	70.7a	67.3a

[z]Node position counted from the plant apex or shearing point.

[y] Means within columns for node position having the same letter or letters are not significantly different by Duncan's multiple range test, 5% level.

Growth of Schefflera, Brassaia actinophylla Endl. in Carib Peat-Amended Media

Kenneth C. Sanderson and Willis C. Martin, Jr.

Nature of Work: Sphagnum peat moss, the most widely used amendment in container media, has become increasingly unavailable, expensive, and variable in quality. Carib peat, a product manufactured in Honduras by shredding the shell and fiberous husk of the coconut, may be a suitable sphagnum peat moss substitute. Carib peat has a pH of 6.5 and the element concentrations shown in Table 1. Alabama Agricultural Experiment Station research (unpublished) has shown it to be a satisfactory media amendment for various floricultural crops. The present study considers its use as a media amendment in the production of Schefflera, *Brassaia actinophylla* Endl.

Schefflera seedlings from 1-1/4 inch (3.1 cm) cell packs were planted in 6-inch (15.2 cm) azalea pots containing 4 media treatments: 1:1:1 (v/v/v) sand, sphagnum peat moss, and pine bark, 1:1 sand and sphagnum peat moss; 1:1:1 sand, Carib peat, and pine bark; and 1:1 sand and Carib peat. Each medium received 7.1 lb. (3.0 kg) dolomitic limestone, 1.5 lb (0.7 kg) Perk minor element additive and 2.2 oz. (65.1 ml) Aqua Gro wetting agent per cu. yd. ($0.8m^3$). Media treatments were arranged in a completely randomized design with 4 treatments, 5 replications and 5 plants per treatment. Plants were grown in a lightly shaded greenhouse with a minimum night temperature of 62^o F.

Peter's soluble 20-20-20 fertilizer, 2 lb. per 100 gal. (2.4g/liter), was applied to the plants weekly. About 6 months after initiation of treatments (January 27 - August 2), the height and dry weight of the plants were recorded.

Results and Discussion: Plants growing in Carib peat-amended media were taller than plants growing in sphagnum peat moss-amended media (Table 2). Plants growing in the 2 Carib peat-amended media had similar heights. There were no statistical differences in the dry weights of the plants grown in the 4 media. This study shows that Carib peat is an acceptable substitute for sphagnum peat moss used for growing Schefflera.

Table 1. Element Concentration of Shredded Coconut Husks (Carib Peat).

Element	% Dry Weight
Nitrogen	0.07
Phosphorous	0.02
Potassium	1.34
Calcium	0.13
Magnesium	0.16
	ppm
Manganese	11.8
Iron	83.8
Aluminum	9.3
Boron	56.4
Copper	5.4
Zinc	20.9
Strontium	16.4
Barium	3.2
Sodium	221.7

Table 2. Height and Dry Weight of *Brassaia actinophylla* Endl. Plants Grown in Carib Peat-and Sphagnum Peat Moss-Amended Media.

Media (by volume)	Plant height (cm)	Dry weight (g)
1:1:1 Carib peat, sand and pine bark	46.4a^{z}	107.2a
1:1 Carib peat and sand	40.4a	98.0a
1:1:1 Sphagnum peat moss, sand and pine bark	38.9b	95.6a
1:1 Sphagnum peat moss and sand	38.9b	98.6a

^{z} Means in columns followed by the same letter(s) are not significantly different at the 5% level by Ducan's multiple range test.

Author and Subject Index

Series Numbers 22 to 28

Prepared by Kenneth C. Sanderson and Grace Ho

Note on Back Issues of Research Results for Ornamental Horticulturists

Kenneth C. Sanderson

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