Hawaii Cooperative Extension Service

HORTICULTURE DIGEST

HITAHR · College of Tropical Agriculture and Human Resources
U. S. Department of Agriculture Cooperating

Department of Horticulture
University of Hawaii at Manoa

In This Issue: FLOWER AND NURSERY INFORMATION
No. 71, January 1984

TABLE OF CONTENTS

PRUNING OF ANTHURIUM LEAF BLADES

Commercial anthurium growers in Hawaii face a high investment cost and presently a relatively low flower price in starting an anthurium nursery. To increase flower production per unit area and hopefully, gain a faster return on their investment, many anthurium growers plant as many as 35,000 to 40,000 plants per acre under their saranhouses as compared to normal plant populations of 20,000 to 25,000 plants per acre. However, this increased plant density can directly affect production by reduction in light, water penetration to roots and efficiency of pest control. Flower quality, especially straightness of stems, was also thought to be effected by plant crowding. Higaki and Imamura (*1*) reported a pruning method involving the pruning of the anthurium leaves in half, perpendicular to the longitudinal axis of the leaf blade (Figure 1). It was felt that a 50% reduciton in leaf surface area would reduce the incidence of the problems associated with plant crowding. Nakasone and Kamemoto (*2*) reported that pruning plants to less than five leaves reduced flower stem length and spathe size in *Anthurium andraenum* cultivars 'Nitta' and 'Kaumana Red'. Pruning to less than three leaves reduced flower yield in 'Kaumana Red' but not in 'Nitta'. An experiment was conducted at the Waiakea Agricultural Experiment Station in Hilo, Hawaii to determine the effects of leaf blade pruning on anthurium flower yield and quality.

Thirty matured 'Kaumana Red' anthurium plants were grown in wood shaving medium in 12" concrete pots, with no space between pots, under 80% shade. There were three treatments each with 10 replicates. The treatments were: 1) Pruning of all emerging young leaf blades in half; 2) Pruning of only the fourth leaf blade in half (e.g. all except three youngest leaves were kept pruned); and 3) No pruning of leaves (control). Data on flower production, flower stem length, flower size and number of crooked flower stems were taken weekly for two years. Flower stem length was measured from the base of the stem to the point of attachment to the spathe. A flower size was calculated as the product of length and width of the spathe. A flower stem was considered crooked if it curved more than 20 degrees from a straight line or if it was twisted (Figure 2). Fertilizer and pesticides were applied regularly as a maintenance practice.

The results of the experiment are shown in Tables 1 to 4. The effects of pruning of anthurium leaf baldes appear to be dependent upon the extent of the pruning. Table 1 shows that pruning all leaves resulted in lower yields than pruning from just the fourth leaf and there was no difference between control and either of the two pruning treatments. Table 2 shows that pruning of all leaves resulted in production of shorter flower stems than pruning of the fourth leaf. However, there was no difference in stem length between either pruning method and control. Flower size was not affected by pruning (Table 3).

There was no difference in number of crooked flower stems between pruning of the fourth leaf and control (Table 4). However, pruning each emerging leaf resulted in a significantly higher percentage of straight flower stems. This pruning method apparently reduced production of crooked flower stems by either reducing the

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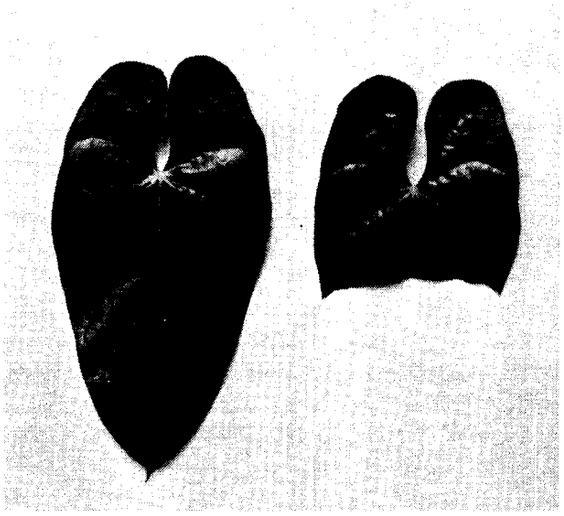


Figure 1. Horizontally pruned and unpruned anthurium leaves. Pruning method developed by Mr. Seigi Yogi of Anthuriums of Hawaii, Hilo, Hawaii.

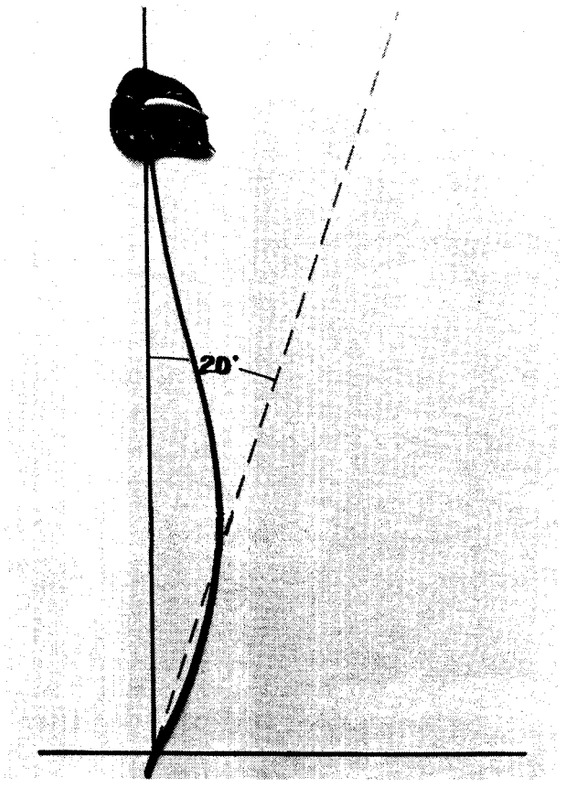


Figure 2. Crooked stem with 20 degrees curvature from a straight line.

Table 1. Influence of Horizontal Pruning on Flower Production of cv. 'Kaumana Red' Anthurium

Treatment	No. Flower/Plant/Yr
Prune 4th Leaf	6.0 a[z]
No Pruning	5.8 ab
Prune All Leaves	5.3 b

[z] Means separation by Duncan's Multiple Range Test, 5% level. Means are averages of 10 units.

Table 2. Influence of Horizontal Pruning on Flower Stem Length of cv. 'Kaumana Red' Anthurium

Treatment	Flower Stem Length (cm)
Prune 4th Leaf	68.40 a[z]
No Pruning	66.46 ab
Prune All Leaves	64.20 b

[z] Means separation by Duncan's Multiple Range Test, 5% level. Means are averages of 10 units.

Table 3. Influence of Horizontal Pruning on Flower Size of cv. 'Kaumana Red' Anthurium

Treatment	Flower Size (cm^2)
No Pruning	164.03 a[z]
Prune 4th Leaf	161.24 a
Prune All Leaves	153.14 a

[z] Mean separation by Duncan's Multiple Range Test, 5% level. Means are averages of 10 units.

Table 4. Influence of Horizontal Pruning on Producing Straight Flower Stems on cv. 'Kaumana Red' Anthurium

Treatment	No. of Straight Flower Stems (%)
Prune All Leaves	4.20 a[z]
Prune 4th Leaf	26.0 b
No Pruning	21.0 b

[z] Mean separation by Duncan's Multiple Range Test, 5% level. Means are averages of 10 units.

direct physical barrier of the numerous large leaves and or by increasing availability of light. The criteria to determine crookedness of stems in this experiment was much stricter than commercial grading standards. Commercially acceptable flowers will have stems that curve gradually up to 30–40 degrees off a straight line. Commercial growers would have a lower percentage of flowers unsaleable because of crooked stems than indicated by this experiment.

Of the three treatments tested, cutting all leaf blades in half appears to be the best method of pruning anthuriums to decrease the effects of plant overcrowding. Although pruning just the fourth leaf resulted in higher yields and longer flower stem lengths than pruning all leaves, there was no advantage in pruning the fourth leaf over not pruning at all. Pruning all leaf blades horizontally in half, however, significantly reduced the percentage of flowers with crooked stems as compared to other treatments, with no decrease in yield or flower stem length as compared to control. This method of anthurium leaf pruning, then, improved the quality of flowers.

NURSERY NOTES

Several papers related to foliage plants were presented at the recent meeting of the American Society for Horticultural Science (ASHS) held in McAllen, Texas. Abstracts are presented for those interested in this area.

EFFECT OF GROWTH REGULATORS ON ROOTING OF *FICUS BENJAMINA* L. AIR LAYERS

Leland Lee and David Wm. Reed, Department of Horticultural Sciences, Texas A&M University, College Station, TX 77843.

Ficus benjamina L. air layers were wounded by ringing the bark approximately 25 cm from the tip of 0.7 cm diameter stems. The exposed wounded area was either not treated, treated with 50% ethanol alone, 10, 100 or 1,000 ppm IBA in 50% ethanol, or 1, 10 or 100 ppm 2,4-D in 50% ethanol. The wounded area was wrapped successively with moist unshreaded sphagnum peat moss, clear polyethylene film then aluminum foil. Root number and length was determined at 15 and 30 days after treatment and root weight and quality was determined at 42 days after treatment. IBA at 1,000 ppm showed the greatest % rooting, root number, length and quality. Increasing concentrations of IBA increased the rate of rooting. The 1 ppm 2,4-D treatment was the next most effective treatment. In summary, 1,000 ppm IBA in 50% ethanol increased the rate of rooting and increased the number, length and weight of roots of *Ficus benjamina* air layers.

LIGHT QUALITY AND FERTILIZER EFFECTS ON LONG-TERM MAINTENANCE OF FOUR FOLIAGE PLANTS IN SIMULATED INTERIOR ENVIRONMENTS

Melanie Turner, David Wm. Reed, and David L. Morgan, Department of Horticultural Sciences, Texas A&M University, College Station, TX 77843.

Acclimatized *Ficus benjamina, Ficus* sp. 'Gulf Stream Weeping Fig', *Brassaia arboricola**, and *Dieffenbachia amoena* were maintained for 1 yr. in a simulated interior environment. Light quality was studied using the following sources height adjusted for a total PAR of 14 $uEm^{-2}s^{-1}$: 1) 100% PAR of cool white fluorescent, 2) 70% PAR of cool white fluorescent + 30% PAR of incandescent, and 3) 50% PAR of Gro-Lux + 50% PAR of Gro-Lux Wide Spectrum. After 1 yr. no significant differences occurred between treatments, indicating no effect of light quality from these sources given equal PAR. Fertilizer source was studied using: 1) weekly liquid fertilization of 200 N:88 P:166 K ppm from Peters 20-20-20, 2) slow release fertilizer every 3 months at 0.57 gm/6" pot from Osmocote 14-14-14 and 3) no fertilizer. PAR was 13 $uEm^{-2}s^{-1}$ with cool white fluorescent lights, and pots were leached monthly. *F. benjamina* were of slightly higher quality with weekly liquid fertilization, *F.* sp. and *B. arboricola* showed no response and *D. amoena* deteriorated in all treatments. These data indicate that under low light the effects of fertilization on acclimatized plants were minimal, probably due to reduced growth.

*Ed. note: *Brassaia arboricola* is more correctly identified as *Scheffera arboricola* Hayata ex. Kanehira.

UTILIZATION OF SCREENED COMPOSTED SEWAGE SLUDGE AS A COMPONENT OF FOLIAGE PLANT POTTED MEDIA

R. T. Poole and C. A. Conover, University of

Florida, IFAS, Agricultural Research Center, Apopka, FL 32703.

Screened compost (SC) (ComPro™) produced from limed dewatered sewage sludge and woodchips with particle sizes no greater than 1.3 cm diameter were combined with sedge peat (SP) and washed sand (WS) in 15 different ratios and used to grow *Brassaia actinophylla, Chrysalidocarpus lutescens, Dieffenbachia maculata* 'Camille' and *Peperomia obtusifolia*. Bulk density ranged from 0.29 g/cm^3 in 45 SP:50 SC:5 WS to 0.54 in 75 SP:0 SC:25 WS. Capillary pore space was greater in all media using SC (ranging from 5.0 to 9.75%) than the control composed of 75 SP:0 SC:25 WS with 4.5%. Screened compost had little effect on percent water holding and cation exchange capacities by volume, but soluble salts increased with increased levels of SC. Plant growth in all potting media utilized was excellent, but some reduction in root system grade was observed with higher levels of SC on *Dieffenbachia*.

POTASSIUM TOXICITY OR A POTASSIUM-INDUCED CALCIUM DEFICIENCY IN *DRACAENA DEREMENSIS*?

R. A. Criley and C. B. Frear, Department of Horticulture, University of Hawaii, Honolulu, HI 96822.

In a previous study with *Dracaena deremensis* 'warneckii Compacta', a pH gradient was established by adjusting the fertilizer solution with KOH. The resulting pH gradient was confounded with a potassium gradient. At the high pH (8.0) and K levels, leaf damage was severe. Leaf tissue analysis showed high K levels and extremely high K/Ca ratios. It was suggested that the leaf sysmptoms represented a potassium-induced calcium deficiency. In a second study, opposing gradients of K and Ca (30 to 300 ppm for each) were superimposed in quartz sand cultures of *D. deremensis* 'Compacta'. At high K-low Ca, the plants were chlorotic and grew poorly: root DWT, leaf number and DWT, and stem length and DWT were reduced in comparison to high Ca-low K treatments. High K-low Ca plants also flowered (100%) while plants were intermediate K/Ca ratios had intermediate (40–60%) flowering responses, and high Ca-low K plants remained vegetative. Leaf tissue analyses reflected substrate K and Ca gradients, but the foliar K/Ca ratio was more strongly influenced by tissue K than Ca.

INFLUENCE OF LIGHT AND FERTILIZER DURING PRODUCTION ON SIMULATED SHIPPING OF *FICUS BENJAMINA*

C. A. Conover and R. T. Poole, University of Florida, IFAS, Agricultural Research Center, Apopka, FL 32703.

Height and grade of *Ficus benjamina* L. were similar when grown under 47 or 63% shade on 16.7, 33.4 or 50.1 g/m^2-month from 19-6-12 Osmocote (19N-2.6P10K) slow release fertilizer. Plants grown under 80% shade were shorter and of lower quality. Leafdrop that occurred during four weeks simulated shipping at 10, 13, 16 and 19°C simulated shipping temperature followed by 16°. Severe leafdrop occurred at 10° due to chilling injury and high leafdrop at 19° because of increased respiration. Postshipment leafdrop was increased by production fertilizer level and decreased as shade increased. Except for chill-damaged plants (10° simulated shipping), postshipment leafdrop was not affected by shipping temperature.

NIGHT TEMPERATURES AND *DIEFFENBACHIA* GROWTH RATE

D. B. McConnell, Ornamental Horticulture Department, University of Florida, Gainesville, FL 32611.

Dieffenbachia 'Exotica Perfection' was grown with night temperatures of 1.5, 10 and 18°C. Day temperature was maintained at 26.5°C. Stem height, leaf area, fresh and dry weight of roots, stems and leaves were determined weekly for 6 weeks. Leaf area, stem height, leaf and shoot dry weight increased most at 18°C. Plants subjected to night temperatures at 1.5°C did not grow and died prior to experiment termination.

ETHYLENE AND WATER STRESS IN *FICUS BENJAMINA* LEAF ABSCISSION

William Richard Graves and Richard J. Gladon, Department of Horticulture, Iowa State University, Ames, IA 50011.

The role of ethylene (C_2H_4) in *Ficus benjamina* leaf abscission was examined. Plants were exposed to several C_2H_4 concentrations in closed systems and leaf abscission was monitored. In addition, endogenous C_2H_4 concentrations and C_2H_4 production rates were measured in leaves and petioles of plants which had been stressed by withholding water. C_2H_4 applied in the gas pahse at rates as low as 2 ul/liter promoted leaf abscission. The internal C_2H_4 concentration in leaves and petioles of water stressed plants did not increase until after abscission occurred. Newly abscised leaves contained approximately 2.3 ul/liter C_2H_4 and internal C_2H_4 concentrations increased with time following abscission. The atmosphere surrounding plants held in a closed system contained between 0.04 and 0.28 ul/liter of emanated C_2H_4 but these concentrations did not result in abscission. Because of variability in the above results, plants have been subjected to osmotically-induced water stress and data from similar experimentation using this system will be presented.

INTERACTION OF ETHYLENE AND LEAF ABSCISSION IN TWO *FICUS* SPP.

Melanie Turner, David Wm. Reed, and David L. Morgan, Department of Horticultural Sciences, Texas A&M University, College Station, Tx 77843.

The possible interaction of ethylene and leaf abscission was studied in *Ficus benjamina* L. (exhibits extensive leaf drop indoors) and *Ficus* sp. Gulf Stream Weeping fig (exhibits less leaf drop indoors). Ethephon at 3200 ppm caused 41.2% leaf drop with *F.* sp. and 20.1% leaf drop with *F. bejamina*; these differences may be due to differing permeabilities of the leaves. Plants were exposed to ethylene gas to lessen permeability problems. At 0.5 ppm ethylene, no leaf drop occurred. At 17 ppm, ethylene caused 24.7% leaf drop with *F.* sp. and 63.9% leaf drop with *F. bejamina*. Ethylene concentration decreased over time, which was not due to chamber leakage. To determine the cause of depletion separated plant parts and medium were isolated in glass jars and exposed to ethylene gas. Ethylene depletion occurred only in the presence of the medium (peat-perlite or rice hulls), with a 91.4% depletion over 96 hours. With sterilized media no significant depletion occurred, indicating that the microbial population may have depleted the ethylene. Separated plant tops evolved no detectable ethylene during leaf abscission. Thus, further studies are needed to determine if ethylene is the causal agent in low light induced leaf abscission in these *Ficus*.

LOW TEMPERATURE INFJURY OF *AGLAONEMA*

Growers in Hawaii have observed an irregular, brownish discoloration on the upper surface of *Aglaonema* 'Silver Queen' during the winter months. There does not appear to be any disease organism associated with this disorder, which has been observed for several years. A recent publication (*1*) from Florida indicates that this plant is a very cold-sensitive foliage plant. Symptoms similar to those observed in Hawaii are illustrated as being caused by temperatures in the 50 to 55°F range, well below those expected here.

Since several growth chambers were available, it was decided to attempt to duplicate this disorder on Silver Queen. Rooted liners in rose pots were supplied by Evergreen Nursery which were placed in the growth chambers at 3 temperature regimes (Table 1) and then removed after 1, 2, 3, and 4 days exposure.

All plants placed under the three temperature regimes exhibited sysmptoms (Fig. 1) after one day of exposure (Table 1). The lowest temperature range (40°–70°F) had a greater degree of injury than the other ranges (58°–68° and 64°–72°F), however the number of injured leaves did not increase after 2 days exposure, but total leaf area damage increased over time (Table 2). The leaf area damage did not increase at the 58°–68° or 64°–72°F temperature ranges.

Table 1. The percentage of *Aglaonema* 'Silver Queen' leaves injured by temperature.

Duration (Days)	TEMPERATURE[z] (°F minimum–maximum)		
	40°–70°	58°–68°	64°–72°
1	26[y]	27	13
2	55	33	25
3	55	29	28
4	56	22	30

[z] average temperature range recorded for each chamber.
[y] based on the number of leaves injured per 2 plant samples.

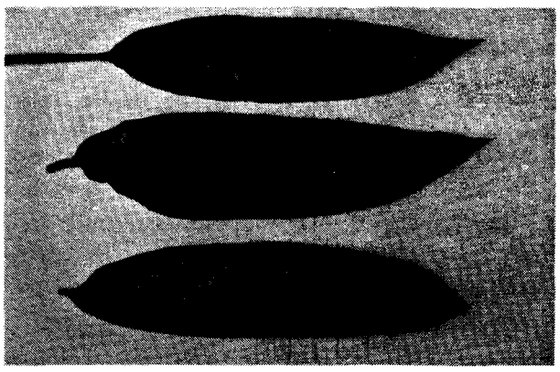


Figure 1. Chilling injury on lower leaves of a *Aglaonema* 'Silver Queen' (above) with normal leaf on the bottom.

Table 2. The percentage of *Aglaonema* 'Silver Queen' leaf area injured by temperature.

Duration (Days)	TEMPERATURE[z] (°F minimum–maximum)		
	40°–70°	58°–68°	64°–72°
1	30[z]	20	20
2	50	25	25
3	60	20	10
4	70	30	15

[z] average temperature range recorded for each growth chamber.

[y] based on the leaf area damaged per 2 plant samples.

At the 58°–68° and 64°–72°F ranges, the symptom exhibited by the *Aglaonema* was a gronzing of the underside of the leaves which was not visible from the top-side of the leaves, beginning at the tip and margins of the leaf. Eventually the areas spread out over the whole leaf and appeared as bronze water soaked areas. The 40°–70° temperature range exhibited this pattern immediately on both upper and lower leaf surfaces and increased dramatically with time. At all temperature ranges, the older matured *Aglaonema* leaves were affected by temperature as was indicated also in the Florida article (*1*). One plant that was maintained in the shade house did not develop injury symptoms.

References

1. Henley, R. W., Editor. 1983. A pictorial atlas of Foliage Plant Problems. Central Chapter, Florida Foliage Association, P. O. Box Y, Apopka, FL 32703.

Fred D. Rauch, Horticulture Specialist
Paul Murakami, Research Associate

COMING EVENT

Workshops for Ornamental Nursery Personnel in Disease Detection and Control

At this writing one session has been completed for the Maui group and the second is scheduled for Kauai Dec. 13 and 14.

The meeting with Oahu ONGA members will be scheduled in late January or early February.

We continue to explore new ideas to accomplish training goals so your recommendations about on-site workshops would be most appreciated.

If you are interested in participating, please contact Melvin Wong, 456-5981 and if you are willing to have the session scheduled for your nursery, contact Al Martinez, 948-8053.

Marketing and Transportation Seminar

An agriculture marketing and transportation seminar with the theme "Exploring New Marketing Opportunities in Agriculture" will be held on February 16–17, 1984 at the Naniloa Hotel in Hilo. Six mainland speakers, experts in their fields, will be brought in to share their ideas with us. Featured speakers include Mike McKiernan, Director of Operations at Wilsey Bennent Co. on consolidated air transportation, Herb Mitchell of Herb Mitchell Associates on foreign markets and marketing Hawaii's agriculture products, Rick Garland of the USDA Agricultural Cooperative Services on marketing and transportation cooperatives and Seward Besemer of the University of California on the auction system of marketing agriculture products. Other speakers of note will round the program which emphasizes ideas which might be explored in dealing with marketing and transportation obstacles to the growth of diversified agriculture. We anticipate that there will be an interchange of ideas across commodity groups, including producers, marketers, government and interested parties. The conference should produce recommendations for action by special interest groups in dealing with some of the obstacles.

The seminar is sponsored by University of Hawaii HITAHR with the support of the Department of Agriculture, Department of Transportation, Hawaii County Research and Development, and commodity representatives on the steering committee. It is part of a four year project directed at facilitating industry/community efforts

in dealing with some of the bottlenecks in transportation and marketing.

Ruth Iwata
Horticulture Specialist

Ornamental Short Course

Make plans now to attend the Seventh Annual Ornamentals Short Course, March 29–31, 1984. This year's short course will be held in Honolulu, again in conjunction with the Fertilizer Workshop. While the program is still incomplete, plans are to have special sections on pest management and propagation in addition to the section on plant nutrition. Mainland speakers will include Mr. Karl A. Kolb, Technical Service Director with Sierra Chemical Co.

Turf Conference

The first Pan-Pacific Turfgrass Conference has been scheduled for June, 1984 in Honolulu. The conference is sponsored by the Hawaii Turfgrass Association and the University of Hawaii.

Seminars, workshops, an equipment exhibition and trade show are planned.

Following the conference, a tour of turfgrass sites and golf courses on Maui and Honolulu can be arranged for those interested.

For registration information, contact Karen Bento, P. O. Box 31003, Honolulu, HI 96820.

AVAILABLE PUBLICATION

Ornamentals & Flowers

Three new information sheets are available in the Ornamental and Flowers series of Instant Information sheets. These sheets prepared by Fred D. Rauch, Horticulture Specialist, provide information on commonly grown members of the Acanthus family that can be used for ground cover plantings and include:

No. 6, Coromandel
No. 7, Hemigraphis
No. 8, Ruellia

REGISTRATION OF ANTHURIUM CULTIVARS

Anthuriums are the most important cut flower crop in Hawaii. 'Ozaki', 'Kozohara', 'Kaumana' and 'Nitta' have become well-established commercial cultivars. Several other cultivars have become generally recognized, and novel and improved cultivars are continually being developed.

The Hawaiian Anthurium Society (formerly known as the American Anthurium Society) has been interested in establishing a vehicle to register anthurium cultivars. Registration of cultivars would 1) establish priority of a name given to a clone, 2) eliminate synonyms (more than one name for a given clone), 3) eliminate duplication (same name given to more than one clone), and 4) promote interest in developing new cultivars by breeders and growers through the opportunity of naming and registering new cultivars. In 1982 the Society approved the registration of cultivars and appointed the following to the Registration Committee:

H. Kamemoto, Registrar
John Shimamoto
Betty Kamisugi (also liaison with the Wahiawa Anthurium Society)
Dwight Sato (also liaison with the anthurium growers on the island of Hawaii)
Chew Wong, Treasurer

Based on several registration forms including those of the National Chrysanthemum Society, American Rose Society and the Royal Horticultural Society (for orchid registration), the attached form for *Application for Registration of Anthurium Cultivars* was developed. The completed form must be submitted in duplicate with the registration fee of $5.00 to the registrar. Checks should be made out to the Hawaiian Anthurium Society. The Registrar will return the original copy and file the duplicate for reference.

The cultivars should be described as accurately as possible and distinguishing features noted. Color is difficult to describe, and therefore color designations such as those of the Royal Horticultural Society (RHS) Colour Chart should be used whenever possible. Registrants who do not have access to the Colour Chart may send a fresh flower to the Registrar for color confirmation. Also, inclusion of a color photograph or slide with each registration application is desirable.

To initiate the registration process the committee agreed that the six present day commercail cultivars, 'Ozaki', 'Kozohara', 'Kaumana', 'Kansako', 'Nitta' and 'DeWeese' along with the cultivars developed and released by the University of Hawaii be automatically registered. It was

Table 1. Registration of Anthurium Cultivars

No.	Cultivar Name	Other Names (Synonyms)	Spathe Color RHSCC No.	Originator	Remarks, Distinguishing Characteristics
1.	Ozaki	Ozaki Red	Red 45B	O. Ozaki	Most important commercial cultivar
2.	Kozohara	Kozohara Red	Dark red 46A	G. Kozohara	Important commercial cultivar
3.	Kaumana	Kaumana Red	Dark red 46A		Small, open lobe, important commercial cultivar
4.	Kansako	Kansako Red No. 1	Dark red 46A	A. Kansako	Long peduncle, lobes sometimes distorted
5.	Nitta	Nitta Orange	Orange 33A	A. Nitta	Most important commercial orange cultivar
6.	DeWeese	DeWeese White	White	R. DeWeese	Small, open lobes
7.	Uniwai		Creamish white	Univ. Hawaii	Open lobes
8.	Marian Seefurth		Pink 52B	Univ. Hawaii	Lobes fused, spadix upright when mature
9.	Anuenue		Coral 38A, Green	Univ. Hawaii	Large, roundish obake, fused lobes
10.	Chameleon		White, Green	Univ. Hawaii	Changes from selfed white to white obake
11.	Manoa Mist		White	Univ. Hawaii	Large, overlapping lobes sometimes fused at base
12.	Calypso		Light red 46C	J. D. Rapsey	Tulip type
13.	Trinidad		Light coral 70C	J. D. Rapsey	Tulip type
14.	Mauna Kea		White, green	Univ. Hawaii	Large obake
15.	Hidden Treasure		Coral 41C, green	Univ. Hawaii	Spadix often hidden in leaf axil
16.	Paradise Pink		Dark pink 50A–52A	Univ. Hawaii	Lobes touching or slightly overlapping
17.	Diamond Jubilee		Light orange 41C, green	Univ. Hawaii	Small to medium obake
18.	Sunburst	Miyake Orange	Orange 40B, green	N. Miyake	Small, sometimes obake
19.	Suehiro	Suehiro White	White w/pink blush 158B	Ikishima	Old commercial cultivar
20.	Abe	Abe Pink	Dark pink 50A		Heart shape, commercial cultivar, sometimes distorted lobes
21.	Kanda	Kanda Pink	Pink 52B	Jiro Kanda	Commercial cultivar, slightly overlapping lobes
22.	Madame Butterfly	Mickey Mouse	Red 45A, green	M. Kobayashi	Small, triangular, open lobes
23.	Hawaiian Butterfly		Light coral 36A, green	Warren Yee	Broad small, open lobes
24.	Candy Stripe	Maui Pink	Pink splash 52C	John Shimamoto	Heavy substance, overlapping lobes, fragrant
25.	Splish Splash		Red, white marbled	Torao Yanagisako	Red marbled with white

also agreed that the descriptive colors be omitted to the cultivar name; for example, 'Ozaki' instead of 'Ozaki Red'. Additional "old" cultivars (Nos. 18 to 24) were also considered worthy of automatic registration.

The first "new" cultivar accepted for registration is 'Splish Splash' submitted by T. Yanagisako. The spathe is red marbled with white. The committee encourages others to begin registering cultivars "distinguished by a character or characters significant in horticulture".

H. Kamemoto
Professor of Horticulture

No. _____

HAWAIIAN ANTHURIUM SOCIETY

APPLICATION FOR REGISTRATION OF ANTHURIUM CULTIVARS

Proposed Cultivar Name _____

What are other names (synonyms) attached to this anthurium? _____

Parentage if known ♀ _____ ♂ _____

Name and Address of Applicant _____

_____

Name and Address of Originator _____

_____

If the Applicant is not the Originator, the following declaration must be completed:

DECLARATION: I certify that the Originator has given permission for this application.
Signature of Applicant _____

Spathe

Color _____ or RHS Colour Chart No. _____

Length _____ Width _____

Shape _____

Substance and Texture _____

Angle with Peduncle _____

Spadix

Color _____

Length _____ Width _____

Position in relation to spathe _____

Peduncle _____

Leaf Blade

Length _____ Width _____

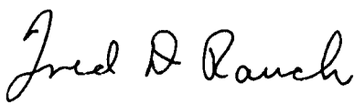
Shape _____

Other Distinguishing Characteristics _____

Signature of Applicant _____ Date _____

This completed form to be sent in duplicate to the Registrar:
Dr. H. Kamemoto, Department of Horticulture, University of Hawaii
3190 Maile Way - Room 102, Honolulu, Hawaii 96822

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.



Fred D. Rauch
Extension Specialist in Horticulture