Hawaii Cooperative Extension Service

HORTICULTURE DIGEST

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

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In This Issue: FLOWER AND NURSERY INFORMATION
No. 61, August 1981

TABLE OF CONTENTS

A BETTER BORROWER BE

The good manager not only knows how to make money. He knows how to borrow it.

Herewith, six areas to keep in mind if you want to impress a loan officer of your credit worthiness:

Character. Will the references you provide be able to comprehensively and positively describe your personal and managerial capabilities? How about your own ability to project a sound, solid image?

Use. What is the money for? Clear up any grey areas before you sit down with the banker. The better he can picture the actual job that his money is to perform in your business, the better (and faster) he can determine the type of loan necessary.

Repayment. This lender wants to know when and how he will get his money back. If you want a particular repayment schedule, be prepared to substantiate the need for it.

Amount. An overlooked consideration here is cushioning. Make sure you're asking for enough. The banker may actually suggest you borrow more than you request. Consider his counsel.

Business outlook. Are you abreast of economic trends, both for business in general and for your own firm's market, that will affect your stability as a borrower?

Financial statements. Lenders are looking for solvency, profitability, and growth. Prove all three with adequate balance sheets and income statements. You'll need more than one year's worth to show him trends. Anticipate questions about receivables turnover, adequacy of reserve for losses, credit policies, condition of inventory and fixed assets.

As for any restrictions on loans,two thoughts:

1. They may be negotiable. The banker will "give" at some points, so drive for what you want.
2. Some so-called restrictions, like periodic reporting, may, in fact, be opportunities to improve your own managerial discipline. Take advantage of them.

New York State Flower Industries
Bulletin No. 117
June, 1980

TRANSFER OF TISSUE-CULTURED ANTHURIUM PLANTLETS FROM FLASK TO NATURAL CONDITIONS

Clonal increase through the use of tissue culture techniques has provided a rapid method of propagation of anthurium plants. Its usefulness to the industry has, however, been hampered by difficulties encountered in transferring plantlets from culture flasks to natural greenhouse conditions (Fig. 1). Local growers have reported plantlet mortality rates of up to 100% upon transfer.

Studies involving various media, shade levels, plastic saran wrap covers, and fungicide treatment were undertaken to develop a more efficient method of transferring plantlets from aseptic to natural conditions. In each experiment 3 pots each with 20 plantlets represented a treatment.

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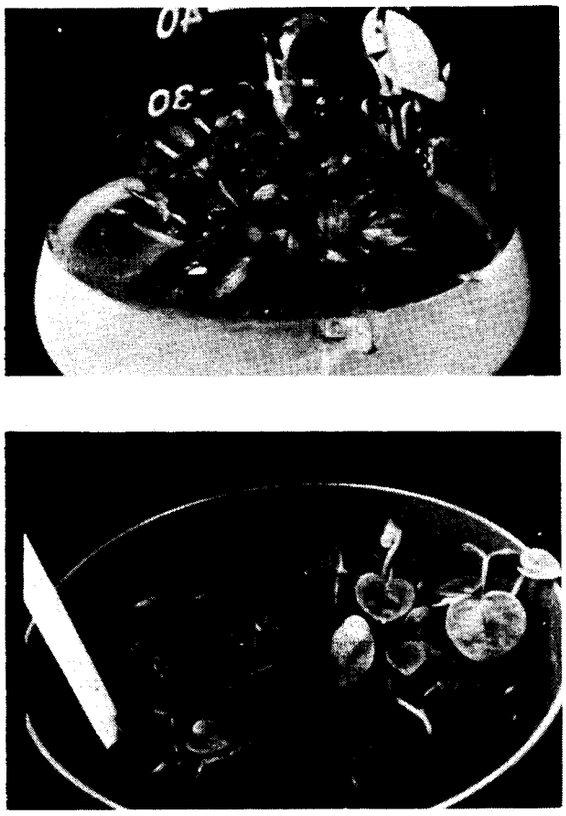


Figure 1. Upper photo: tissue cultured anthurium plantlets growing in a flask; lower photo: plantlets growing in a pot under natural greenhouse conditions.

Fungicide. Plantlets were transplanted from culture flasks to pots with or without a pre-transplanting soak in Banrot solution (2 tsp./gal.). No significant difference was detected between treatments with fungicide (96.5% survival) and without (95.5% survival). However, because roots have often been observed to decay and fungi observed on some of these roots, it is recommended that plantlets be treated with a fungicide as a precautionary measure.

Media. Three different media: 1) chopped hapuu fibers, 2) garden compost (fine decorative redwood bark) and 3) 1 perlite:1 vermiculite mixture were tested to select a suitable transplant medium. After plantlcts were transplanted from the flasks into 6-inch plastic pots the plants and media were drenched with Banrot solution (1 tsp/gal with few drops of Triton B 1956 sticker). The pots were then placed under 70% shade. The pots were covered with clear saran wrap plastic for maintaining high humidity for 2 weeks, after which they were watered daily. After 1 month, survival in garden compost (95.0%) was significantly greater than either chopped hapuu fibers (81.3%) or vermiculite-perlite mixture (81.0%).

Shade Levels. Potted plantlets were placed under 55%, 70%, or 80% shade to determine the shade level necessary for high survival. One month after transfer to pots, survival of 20 percent under 55% shade was significantly lower than that under 70% or 80% shade. There was no difference between 70% shade (95 percent survival) and 80% shade(96 percent survival).

Plastic Covers. Plantlets in flasks are grown under relatively high humidity; therefore, practices which minimize moisture loss from plantlets after their transfer to natural conditions may improve survival rates. In this study plastic saran wrap was used to maintain high humidity for newly transplanted plantlets. The pots with transplanted plantlets were either covered with clear plastic saran wrap or left uncovered and then placed under 55%, 70% or 80% shade. The uncovered pots were watered twice daily. The plastic cover was removed after 2 weeks and the plantlets watered twice daily thereafter. There was no significant difference in survival between those covered (90.0% survival) or uncovered (91.5% survival). Watering twice daily may have eliminated moisture as a limiting factor, thus the similar survival rates under both conditions. Covering with plastic is not necessary if the plantlets are watered at least twice a day and grown under 70% or 80% shade. Survival rates under the various shade levels were: 96% survival under 80% shade, 95% survival under 70% shade, and 20% survival under 55% shade.

Based on the results of these studies the recommended procedure for transferring anthurium plantlets from culture flasks to pots is as follows: 1) remove the plantlets carefully from flask and wash the agar from the roots; 2) transplant plantlets with roots intact in garden compost (fine decorative bark) medium; 3) treat plantlets with a fungicide either as a preplant soak or an after-planting drench; 4) keep transplanted plants under 70–80% shade; and 5)maintain conditions of high humidity at all times.

Joanne Imamura, Research Associate
Tadashi Higaki, Horticulturist
John Kunisaki, Assistant Horticulturist

NURSERY NOTES

Plant Shines

There are lots of commercial plant shine materials on the market. All of these materials will give a high glossy shine or luster to the foliage. In addition to these materials, there are

several "home remedies" to shine plants. They include: milk, olive oil, or even liquid wax. All of these materials help the plant look better–but, they do create some problems.

Two Penn State researchers have tested some of the commercial plant shines. Their results: Reduced growth (number of leaves, total shoot length, and fresh weight): more leaves that turned yellow and/or brown; spindly shoots; and some materials left a greasy-looking film on the leaves.

These materials often leave an oily film or deposit on the leaves. Dust collects on these treated areas. If a cloth is used to apply the plant shine and the underside of the plant is treated–you are causing problems to the plant. The stomates (breathing pores) can be clogged if the entire leaf is given the shine treatment.

Westchester Agricultural News

Interesting Facts

"One acre of grass gives off 2,400 gallons of water every hot summer day. This has a cooling effect of a 140,000 lb air conditioner–a 70 ton machine. A mature tree can produce a cooling effect equal to a 10 room-size air conditioner running 20 hours a day."

It sure would be nice if we could plant "mature trees" and take advantage of this cooling effect instantly. We can't. We can, though, plant young trees and let them grow and we can take care of the trees we have.

Plants and the Landscape
Vol. 3, (3)
July 1980

Industry Happenings

Effective the first of the year, Amfac Nurseries, Inc. was renamed Amfac Garden Products, Inc. Additionally, certain nursery operating units were renamed, "to further strengthen the marketing direction of the company and to position the company in three clearly defined segments of the North American horticultural industry," said Harry Y. Soo, president of the nursery division of Amfac, Inc.'s Agricultural Group.

The Amfac Nurseries name will be used by those units involved in producing and marketing woody ornamentals. This operating segment of the new Amfac Garden Products, Inc. will be comprised of Amfac Nurseries, Walters; Amfac Nurseries, Cole, Amfac Nurseries, Select; and Amfac Nurseries, Jenco, previously known as Glenn Walters Nursery, American Garden Cole, Select Nurseries and Jenco Wholesale Nursery, respectively.

The Amfac Garden name will be used to identify both the division and its activities in the bedding plants, foliage, and turf segment of the industry. The operations in this segment of Amfac Garden Products, Inc. will be named Amfac Garden, Perry's; Amfac Garden, Cal-Turf and Amfac Garden Hawaii, formerly known as American Garden Perry's, American Garden Cal-Turf, and Amfac Nurseries, Hawaii.

Amfac, Inc. will retain the identities of Gurney Seed and Nursery Company, Inc. and Henry Field Seed and Nursery Company within the Amfac Garden Products, Inc. configuration, according to Mr. Soo. Both are horticultural mail order companies.

Pacific Coast Nurseryman
and Garden Supply Dealer
February, 1981

U. S. Government Promotes Tree Planting

The government is encouraging home owners to plant trees around their homes to save energy and money.

"The trees can easily pay for themselves in fuel savings in a matter of a few years," says a USDA representative. The agency says that a row of trees can cut down wind and reduce home heating bills by as much as 20 percent.

The government's basic premise contends that trees help cool the home in summer, cut wind and cold air in the winter, increase the value of the home, attract birds, and clean the air.

Weeds, Trees & Turf
March, 1981

Spray Aid

ad-ju-vant: one that helps, facilitates, enhances the effectiveness of.

Agricultural adjuvants, any in a group of compounds added to herbicides, insecticides, fungicides, or other crop protection materials, closely hew to the formal definition. Adjuvants make pesticides more efficient and thus can reduce the amounts needed to treat target organisms.

Specifically, agricultural adjuvants:

improve wetting of the target pest;
modify spray evaporation rates to either prolong or delay drying time;
increase resistance of deposited spray to dew, rain and sprinkle irrigation;
enhance rate of absorption into target;
adjust and control pH;

improve uniformity and spread of deposited material
resolve incompatibilities between pesticides and liquid fertilizers;
act as safeguard by reducing unwanted toxic effects.

The adjuvant concept can be traced back to the 19th century when milk was utilized to increase adherence. A casein-lime mixture was developed around 1920 to improve spray performance.

Infoletter No. 48
April/May 1981

A Comparison of Fiber, Plastic and Rubber Nursery Cans

Used rubber tires can be reprocessed and manufactured into useful items such as nursery cans. Concern by industry and the manufacturer over can strength and plant growth characteristics in rubber cans prompted this study. The results indicated that there was no significant difference in either situation among the three types of cans (mentioned in the title), except that the rubber containers exhibited less deterioration.

E. R. Emino and J. K. Calabrese
HortScience
Vol. 14(2), 1979

THE FERTILIZER INJECTOR RATIO

Fertilizing through the water system is the standard method that growers use to apply most fertilizers to a large number of pots.

Basically, there are three types of fertilizer injectors in use today: 1. the venturi principle, 2. positive displacement pumps, and 3. the eductor type.

The most basic system is the venturi proportioner which draws fertilizer concentrate into the water system through a small hole. The hozon is a good example of this type. The rate of concentrate mixed with the water varies with the water pressure and flow rate.

The second type that works by means of positive displacement pumps are water driven or have electric motors which power the fertilizer concentrate pump (eg. Smith or Commander). This type of injector maintains constant proportions regardless of water pressure or flow rate but is not usually adjustable in regard to injection ratio.

The third or eductor type, for example the Gewa, has a variable injection ratio and is constructed of a system that has the fertilizer concentrate in a flexible bag with water under pressure surrounding it. As pressure increases outside the fertilizer holding system, it forces the concentrate through the metering system into the water line. The proportion of fertilizer concentrate to water remains constant under normal pressure and rate of flow.

It is probably a good practice to check the injection ratios of any of the above systems yearly or when crop response is questionable. This will determine if the injection ratio has changed since the system was new. Fill the concentrate container. Run the injector long enough to clear all air bubbles out of the line. Refill the concentrate container and run exactly 10 gallons of water out of the hose. Measure the amount of concentrate needed to refill the concentrate container again. The amount of concentrate that should have been used is given in the following table.

Calibration of a Fertilizer Injector

Fertilizer Injector	Injection Ratio	Calibration Factor*
Hozon	1:15	85 oz.
-----	1:24	53
-----	1:60	21
-----	1:75	17
Smith, Gewa, MP	1:100	12.8
Commander	1:128	10
Gewa, Anderson	1:150	8.5
Smith or MP	1:200	6.4
-----	1:300	---

* This shows the ounces of stock depleted when 10 gallons of water are metered through the injector.

Carl A. Salsedo
Connecticut Greenhouse Newsletter
January 1981, No. 103

THE FIVE DOLLAR PLANTING HOLE

In the past, it has been widely believed in the landscape industry that a large hole filled with amended backfill or a backfill of better soil would increase the vigor and survival of landscape material. Some recent studies in Georgia suggest that this practice may be questionable.

It appears that amendments in backfill have a negative effect on water movement and root penetration. Since much of the canned nursery stock today is grown in synthetic mixes, it is more important to amend the parent soil for backfill so both media (the synthetic mix and

BRANDY

FRENCH LACE

MON CHERI

SHREVEPORT

the parent soil) are present for root and water transition from the soil to the root ball.

When planting a container-grown plant, a nurseryman should tear the root ball to encourage outward contact and growth of the roots. The hole for any plant should be dug so the root ball rests on the bottom of the hole, allowing no backfill under the ball. The hole may be dug wider than the ball to allow for backfill.

When digging the hole, it is important to avoid glazing the sides. This is more likely to occur with a hydraulic spade or auger than when the hole is dug with a shovel. Glazing causes a pot effect which prevents water movement and root growth out of the hole.

The best formula for planting is: 1) dig a large hole the depth of the root ball, 2) add amendments to the parent soil only if putting in a plant grown in a synthetic mix, 3) tear apart the root ball if the plant is container grown, and 4) add two to four inches of mulch.

Richard A. Criley
Horticulturist

(Adapted from a report on the South Carolina Nurserymen's Association annual meeting appearing in the American Nurseryman, March 15, 1981.)

ALL AMERICAN ROSE SELECTIONS

To guide the rose gardeners in selection of the best new rose varieties, the All-America Rose Selections present the top 4 new varieties selected for 1982. Each has been subjected to two years of intensive testing in the 25 AARS official test gardens scattered throughout the United States.

Brandy is the progeny of a cross between First Prize and Golden Wave which produced a flower with a rich golden brandy color that ages to an attractive creamy apricot. This hybrid tea has long, slim buds and large (4 to 4½" diameter) flowers with a mild tea fragrance. The many quality flowers are produced from early spring to late fall, yielding an abundance of flowers for cutting.

The plant is a strong, vigorous, bushy grower, medium to moderately tall. The foliage is large, semi-glossy and plentiful, with better than average disease resistance.

French Lace is an award winning floribunda with ivory white blooms, with anywhere from one to eight blossoms on a 6–18" stem. The flowers often have a soft pink hue in the early stages of development and have a light, spicy fragrance. The blooms in clusters are borne continuously in large quantities throughout the growing season.

The plant attains medium height and becomes as wide as it is tall. The new canes break well and frequently from the base, assuring a bushy floribunda growth, well-clothed with dark green, holly-like foliage. Its disease resistance is good.

Mon Cheri is a new hybrid tea which flowers abundantly and is one of the first to flower in the spring. The blooms will vary considerably, depending on the age of the blossoms and the temperature and light conditions. The large, plump, pointed buds start off as a soft, sunrise pink color gradually changing to a deep, velvety red as the flowers unfurl in full sunlight. Even in full bloom, pink highlights persist in shaded areas.

This rose develops to a medium height with a bushy, upright-spreading, well-branched and balanced plant. The deep green, semi-glossy foliage well covers the strong, medium length stems, which usually bear one bloom per cane, excellent for cutting.

Shreveport is a grandiflora with medium size (3–4") blooms in varying shades of orange, salmon and coral. The plant is constantly loaded with blossoms, produced one to many per stem, permitting ample cut flowers and an abundance for garden decoration.

The foliage of this relatively tall but compact plant is large, glossy and deep green. This vigorous, bushy, upright plant shows good resistance to rose diseases.

COMING EVENTS

Hawaii Turfgrass Conference

The Hawaii Turfgrass Association's annual conference has been scheduled for September 10–11, 1981 at the Pacific Beach Hotel in Honolulu. The theme will be "Efficient Turfgrass Management."

Hawaii County Fair

The Hawaii County Fair will be held in Hilo on September 16–20, 1981.

Maui County Fair

The Maui County Fair has been scheduled for October 2–5, 1981.

Orchid Show

The Honolulu Orchid Society will hold its 42nd Annual Orchid, Plant and Flower Show at the Blaisdell Exhibit Hall in Honolulu on October 15–18, 1981.

Garden Writers

The Western Garden Writers Symposium will be held October 9–12, 1981 at the Prince Kuhio Hotel in Honolulu. For further information contact Fortunato Teho at 948–7036, early A.M.

Irrigation Convention

The Irrigation Association will hold its annual convention in Honolulu, HI on November 9–13, 1981. Contact: The Irrigation Association, 13975 Connecticut Avenue, Silver Spring, MD 20906.

Ornamental Short Course

Plans are underway for the 5th Annual Ornamental Short Course for January, 1982.

AAN to Meet in Hawaii

Plans are underway for the American Association of Nurserymen to hold their 107th annual convention in Honolulu at the Sheraton-Waikiki Hotel on July 16–18, 1982. They expect over 2,000 nurserymen from throughout the United States to register for this convention. In addition the Mailorder Nurserymen's Association and the California Association of Nurserymen will be meeting in Hawaii at the same time.

Plant Propagators

The Western Region of the International Plant Propagator's Society is developing plans for their annual meeting to be held in Hawaii, October 5–9, 1982. The program will be held both on Kauai and Oahu and include tours to places of horticultural interest.

GROWING IMPATIENS . . . TIPS FROM A SEED PRODUCER

With impatiens quickly becoming the most popular bedding plant, a few tips on production are timely for a successful bedding plant season:

1. Store seeds before sowing in air-tight containers in the refrigerator.
2. Use no fungicide prior to sowing, especially Captan, which can do damage.
3. Sow in rows, cover lightly with vermiculite and place flats in indirect sunlight.
4. Keep the moisture uniform with a mist system using warm water, or by wrapping the flats in plastic.
5. Use bottom heat to obtain a 72° media temperature.
6. Place 40 Watt red light bulbs 8" above the germination flat (a recommendation from Michigan State University).
7. Expect germination in 14 days.
8. After germination, move the flat from the mist and apply a Lesan/Benlate drench.
9. Grow in light shade at 65–70° nights. Feed lightly (75–100 ppm) and don't water after 2 p.m.
10. Transplant 2–3 weeks after germination. Apply another Lesan/Benlate drench.
11. Grow at 60° nights. Feed lightly and not at every watering or the seedlings will stretch. Do not overwater, allowing the media to dry out between waterings.
12. Impatiens will respond to B-9 or A-Rest.
13. Make successive sowings for continued sales.

Adapted from a presentation by
Nona Wolfram, Pan American Seed Co.,
given at the Bedding Plant Inc.
Conference, October 1979
NYSFIB NO. 112, January, 1980

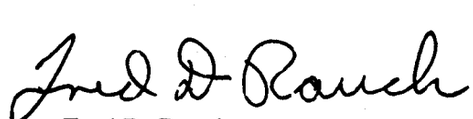
FOOD FOR THOUGHT

You need to be wise to know what to be wise in.

Deacon
(1907–)

If you can't be a pine on the top of the hill, be a scrub in the valley, but be the best little scrub by the side of the hill! Be a bush if you can't be a tree.

W. H. Malloch
(1849–1923)



Fred D. Rauch
Extension Specialist in Horticulture