



FLOWER HANDBOOK

- PLANTING
- HARVESTING
- GRADING
- POST HARVEST CARE
- TRANSPORT
- MARKETING

This booklet has been written and compiled to be part of the training workshops on 'Quality, Post Harvest Treatment and Marketing of Tropical Cut Flowers'.

These workshops are presented by Mrs Jan Hintze, a professional flower grower from Darwin, NT Australia.

GROWING DIFFERENT FLOWER CROPS

Growing tropical flowers is relatively easy since Heliconias and Gingers are quite readily cultivated in normal garden conditions in the tropics and are grown in the ground, with similar attention to that given to vegetables. Heliconias and Gingers can be grown from rhizome divisions or from seed, although seed takes much longer to produce flowers.

Rhizomes should be firm, clean and showing new shoots, and can be planted in containers or directly into the ground, depending on the circumstances. If the weather is dry, it is better to plant into containers so that they can be tended properly until new growth appears, at which time they can be planted into the ground.

With proper care, most are perennial, and do not need to be replanted on a regular schedule, assuming that the plants are cared for properly..

The exceptions to this are some plants which have a dormant phase, and these need to be lifted every two years so as to allow for cleaning up by removal of old exhausted rhizomes, and roots, and replanted when the warmer weather arrives – Curcumas fall into this category.

Orchids require specialised growing conditions

- perfect drainage
- artificial liquid fertiliser
- artificial light shade, depending on type.

Orchids can be grown on upright logs, or planted in pots filled with small rocks and pieces of charcoal. Logs are more suitable for Vanda type orchids, which climb up the log, but since it duplicates the way orchids grow in the jungle, logs are suitable for all orchids, and provide the perfect drainage they need. The logs or pots should be placed in the appropriate level of shade according to type – many will grow in full sun. To achieve maximum flower production, it is necessary to feed them with frequent waterings with a liquid fertiliser, and a weak strength. Some orchids are seasonal, and all have periods of high production and lower, which you need to keep in mind.

Anthuriums require specialised growing conditions, also.

- intermediate soil – mixed with charcoal, bark, woodchips
- occasional supplementary fertiliser
- some protection from midday sun

Other flowers that might be considered are Tuberoses, Gerberas, and Bromeliads, Gladiolus, Liatris, and many annuals. Attention should be paid to vase life and transportation issues when selecting types of flowers for commercial production, since the transportation of flowers to its ultimate users is a primary determining factor.

Foliage is also an interesting addition to your range of products, and can be planted especially, or harvested from the general garden, depending upon the quantities required.

- variegated leaves, such as Crotons and Cordylines, Dracaenas and Dieffenbachia
- green leaves, such as Gardenia, Murraya
- Palm fronds
- leaves with interesting shapes such as Monstera and Philodendron

Choosing the type of flowers and foliage you want to grow should be done, considering the following points –

What plants are suited to your climate, soil, skill, space, etc.

Where are you going to sell them?

Who do you expect to buy them?

How long will it take for the flowers to get there?

What products are already available in that market?

Growing cut flowers is a major commitment in time, effort and land, so the more you can do to make sure your venture is a success the better.

PLANTING, SITE PREPARATION AND LAYOUT

When planting soil grown plants, such as Heliconias and Gingers, the planting area should be cleared of all weeds, and the soil should be loosened so that the newly planted crop can extend its roots easily. Most Heliconias and Gingers are fairly large, spreading plants and should be planted at a spacing of 2 metres in rows 3.5 metres apart, to allow for easy access for harvesting, and plant maintenance. If irrigation is to be used, piping should be installed before the plants are put in, although individual sprinklers can wait until after planting. If the site is sloped, then the rows should be planted across the slope, to prevent erosion and to ensure even drainage through the field.

Planting smaller Heliconias and Gingers, such as *H. psittacorum*, Curcumas, Costus and Lilies, should be done into well cultivated soil, and the plants can be spaced much more closely. *H. psittacorum* and Costus should be planted in a double row, 30-40 cm. apart.

Bulbs such as Curcuma should be planted in rows of four bulbs in the bed, 25 cm. apart in each direction. These bulbs need to be lifted each two or three years, so that they can be divided and cleaned for replanting in a fresh site.

Orchids should be planted on logs or in pots, and if planted on logs, the plant should be tied on with some soft material on the eastern side of the log, which should be fixed in the ground or attached to a framework. The plant will eventually attach itself firmly to the log. If the orchids are to be grown in pots, some sort of shelving will be needed to keep the plants off the ground and to maintain good ventilation. Vanda orchids should be grown in full sun, to encourage flowers but others need protection from the midday sun.

Anthuriums can be grown in pots, on shelves, similar to orchids, or planted in the ground, as long as the soil is opened up with coarse materials, or on beds raised above the ground, lined with weedmat to allow for drainage.

Orchids and Anthuriums need to be fed with a liquid fertiliser to speed growth and therefore increase production.

There are many other flowers which can be grown in the open. Tuberoses will grow in beds in full sun, similar to Curcumas. Gerberas need bright light, but are sensitive to humid conditions, so need to be protected from heavy and continuous rain. Gladiolus and Liatris are both bulbs, and Liatris in particular needs to be lifted and refrigerated at 4°C, or it wont flower again.

Many annuals are suitable cut flowers and can be grown by seed in nursery beds, then planted at the appropriate spacing at the four-leaf size. These are also worth considering for planter boxes and baskets for sale locally.

Attention should be paid to vase life and transportation issues when selecting types of flowers for commercial production, since the transportation of flowers to its ultimate users is a primary determining factor.



General Notes:

Pick all flowers that are ready. Keeping the flower plants clean of old flowers encourages new growth.

Cut Helis and Gingers at base of stem, just above the soil

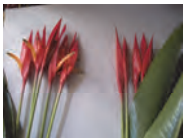
Discard any that are too old, marked or damaged, at the base of the plants, for mulch



Trim unwanted material such as leaves and extra stem and drop at base of plant, to provide mulch.

Trim all flowers to the same length – to fit water bucket or box.

Carefully place cut flowers upright in shade until you are ready to carry back to the treatment area.



HARVESTING

Heliconia flowers should be picked at a certain number of bracts open, dependent on the type.

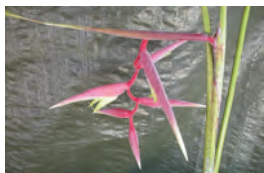
H. psittacorum, small varieties, should be picked as a bud or spear, or just one bract open. One leaf at the top is usually left on. Day flowers can be visible but not hanging.

H. psittacorum, large varieties, should be picked with several bracts open, to form a fan.

Heliconia claws should have a minimum of three bracts open. These should be rinsed in clean water to remove insects and smelly water from the cupped bracts.

HARVESTING

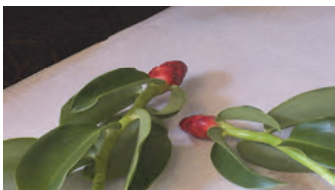
Heliconia pendular flowers should be harvested when they have at least four bracts open.



Ginger flowers, such as *Costus* and *Alpinia* should be harvested when the first dayflowers show. *Costus* foliage is trimmed off, with only two or three leaves retained. All *Alpinia* leaves are removed.



Zingibers can be picked almost any time, but before the last dayflowers appear.



Ettlingeras (Torch Gingers) should be picked before the first dayflowers show, but the central cone is visible - unless they are to be used for eating, when you pick them as a bud.





HARVESTING

Orchids

Dendrobium orchids should be picked when the first two or three flowers on the stem are open. The others will open after cutting.

Vanda and Phalaenopsis orchids should be picked when half the flowers on the stem are open. Single stem orchids, such as Cattleya should be open before picking.

Anthuriums should be fully open with the spathe completely unfurled and the spadix erect, before cutting.

Quality control - grading



As far as possible, all flowers should be unmarked and neatly trimmed.



Flowers should be clean – stem ends should be trimmed, and not muddy.

Generally, second grade flowers should be discarded, or sold in mixed bunches at a cheaper rate.



Heliconia bracts should be clean and old dayflowers removed.

Foliage should be perfect, no spots, no insect damage, and clean.



Quality control - grading

Gingers

Alpinia should be trimmed of all leaves, dayflowers removed and the heads dipped in water to remove the insects that live in them..

Etilingeras - old or damaged bracts at the base should be neatly trimmed off.



Quality Control - grading



Zingibers (Beehives) should be thoroughly washed to clean the cups and old dayflowers should be removed.



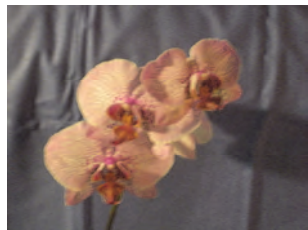
Costus flowers should be clean, any dayflowers removed.



Quality Control - grading

Curcuma

These flowers should be perfect, with no insect damage.



Quality control - grading

Orchids

Dendrobium orchids should have a minimum of two flowers open and a maximum of half, to give a satisfactory vase life. The flowers should be unmarked, and undamaged

Vandas and Phalaenopsis should have about half the flowers open, and be undamaged.

Cattleyas should be fully open.

Spathoglottis should have one flower open as a minimum, old flowers should be picked off.

Post Harvest Care



All flowers need to be kept cool after harvest.

All flowers need to be kept in water, at least 10 cm or 4" deep, at all times.

Heliconias and Gingers need to be watered from above for about ten to twenty minutes after cleaning and trimming, to cool them and completely rehydrate them, since they absorb very little water from the bucket.

Orchids should NOT be washed since the colour may wash out.

Post Harvest Care



Anthuriums should be sprayed lightly but not kept wet.

Foliage should be soaked in water for 15 minutes, to rehydrate after picking.

If you need to hold flowers until the next day, they should be kept as dark as possible, until transport to the market. Holding the buckets of flowers in a dark room, away from drafts, and as cool as possible, is ideal.

Packing for Transport



Packing materials need to be used if the flowers are being transported a long way, by truck or plane. Cardboard boxes, shredded or clean paper, and plastic sleeves are necessary. These sleeves keep the flowers moist, as well as, protect them from mechanical damage.

Heliconias.



Small and medium sized heliconias are usually sold in bunches – 3, 5, 10, 12 or even 15, depending on the preferences of the buyers. The flowers should be bunched, with the heads all even, all the leaves to the back, tied and placed in a sleeve, if these are to be used.

Packing for Transport

Larger claws should be packed in the box in layers with sheets of paper, or shredded paper between them, to prevent rub marks. The leaf stems should be trimmed just a little taller than the flower, to protect them from hitting the end of the box.

Pendular heliconias should be laid flat, by gently twisting the flower so that the spiral is flattened, then covered with paper.



Packing for Transport

Gingers.

Costus are usually bunched and sleeved. 3 or 5 is the usual number

Alpinias, Ettlengers and Zingibers are sold as single flowers, and the heads wrapped to prevent crushing. Polystyrene netting tubes are ideal, cheap and light.

Foliage is sold singly or in bunches of 5 or 10, and packed flat.



Packing for Transport

Anthuriums

These flowers are difficult to pack, but are usually individually sleeved, with the spadix carefully flattened against the spathe, and placed in a small sleeve.

The stem is wet bagged. Care must be taken that the sleeve is wide enough to hold the flattened spathe, since creases show up as black lines.





Packing for Transport

Orchids.

Dendrobium flowers are generally sold in bunches, with each stem the same length. The longer the stem, the fewer in the bunch, which maintains the same price. Plastic sleeves are used, and a tiny plastic bag with wet tissue tied to the stem ends.

Cattleya, Vanda and Phalaenopsis stems are usually sold singly. Wet bags are also used here. The flowers need to be packed very carefully since they are fragile.

Spathoglottis flowers are sold in bunches, sleeved and wet bagged.

Packing for Transport



If the flowers are being transported short distances, from the farm to the local market or shop, then packing is a little less elaborate. The flowers can be packed in damp paper, in a box.



Larger quantities, such as for a market stall can be carried in buckets FULL of water, so they don't tip, in the back of a truck. In an open vehicle they should have a witches hat of paper to protect them from the wind and sun.

Packing for Transport

Air-freighting or by road freight by commercial carriers requires the most careful preparations and packing, since you have no control over what happens to them.

Assemble the box carefully with staples and tape. Box staplers are specially designed to handle the heavy cardboard.

Line the box with a layer of paper.

Always pack the bottom layer with the stems underneath. The tougher stems will protect the flower from rubbing on the bottom of the box. Then pack all the other layers with the face of the flower down and the top layer will have its stems pressing against the top of the closed box.



Packing for Transport

Pack the heavier flowers on the bottom. Lighter more fragile flowers at the top. This applies particularly if you are mixing your orchids and anthuriums with the heliconias and gingers.

Pack the box full, firmly, so the flowers can't move inside the box.

Close the box securely, with staples and tape.

Address the box clearly, giving delivery instructions.

Add your name and contact details as sender, so that contact can be made if it goes awry.

A list of contents and invoice can be included inside the box.

Marketing

Selling your flowers is the main aim.
There are a few rules.

1. Know who you are selling to.
2. Be reliable
3. Quality must be consistent
4. Don't indulge in price wars

Customers:

Customers can be a florists shop, a wholesaler in the market place, private buyer for the home, restaurants hotels.

A florist will want a mixed range of flowers she can use for different purposes. She will want the freshest and most durable flowers since it may take her a day or two to sell them, and they must last in her customers premises. She may want delivery twice a week.

Wholesalers. A wholesaler will only want flowers she knows she can sell. She too will want the freshest and longest lasting. If you are sending your flowers to another town, make sure she knows they are coming.

Private Buyer. A private buyer is the direct retail outlet. This is the most money-making aspect, since your price for a direct sale can be higher, although not as high as a florist. She will want a choice of varieties, but is often a customer for a mixed bunch or a pre-made arrangement.

Restaurants and hotels often want pre-made arrangements, since this is quick, clean, and time-saving for them. This also is very lucrative for you, although takes time and skill.

Reliability

The most critical factor of maintaining your business is to be reliable. Your customers must feel confident that you are always going to be there, will always deliver or supply when you say you will. Nothing but an extreme disaster can excuse you letting the customer down, and it must be a rare event. The customer's business will often depend on you fulfilling your promise. And the backbone of your business is the regular customer. A regular customer pays – because she wants your product next week too.

Quality

This is the other leg on which your business stands. The buyer – particularly if she is in another town – needs to be sure that she will get what she ordered, they are all of a quality she can use.

Clients who order pre-made arrangements need to know they will be of good quality, and sized to fit the space they are needed to fill, whether it be tiny table decorations or a display to lighten the foyer.

Pricing and business manners.

Pricing is a matter of balance – too expensive and no-one will buy; too cheap and you will not make a profit.

To work this out, you need to know how much it costs to run your business – even the smallest purchase must be added up, and the total divided by the number of flowers you sell – not the number you produce. This should include the cost of growing, (fertiliser, etc.), picking (tools, wages for a helper), packing (boxes, tape, paper), and transport. Your time does not count – the profit pays you. The profit you choose to add on top of your costs should be reasonable as well as enough to allow you to keep on in your business. Generally it is about 50% of your costs, but in times of scarcity it can go up to 100% or double.

Conducting price wars is self destructive, and it is better to co-operate with other growers than to compete. Generally speaking, a professional approach, selling a quality product, which your customers can rely on, will win out over a cheap price which cannot last.

Further Information.

Using the correct names for your flowers is fairly important, particularly if you are sending them away to a distant buyer.

There are several websites where the names of flowers are listed, with photos, the official one is www.heliconiasocietypr.org

There is an international society for the cultivation and collection of Heliconias and Gingers and their contact is

www.heliconia.org

My email address is

hintze@ozemail.com.au

and I am happy to help with any queries.

There is a chat group on the Yahoo website, and you can join at

tech.groups.yahoo.com/group/lobsterclaw