

The Perils of Commodity Cacti



The following piece is part of a collection of writings published on the [Practical Small Cacti Malaysia site](#).

Disclaimer: I took pictures of plants for sale (above) at a plant nursery I frequent, for illustration purposes only. Such pictures are not an endorsement of any specific company. Also, I will always endeavour to provide clear and reasonable arguments for any criticisms I make.

Perfection at the Point of Sale

You know what your brain is telling you: buy, Buy, BUY!

Many folks in Klang Valley, Malaysia get their first cactus exposure like this. You come across this in hypermarkets or in plant nurseries. The burst of bright neon colours immediately catches your eye. Trays of almost perfect specimens in 2 inch pots, plus they are cheap too. Newly-arrived pots of cacti and succulents¹ on sale often really are amazing specimens in perfect condition. All you need to do is to open your wallet, and they are yours.

It's perfection at the point of sale. Everything is geared towards pushing your mental buttons and persuading you to part with your money. It's not a trick – the quality is genuine.

¹ My primary focus is cacti. Check Wikipedia if you don't know the difference. "Cacti and succulents" is often shortened to C&S. Most of the time, I will be discussing cacti, but succulents will pop up here and there.

Perfection in the Supply Chain, and...

It's also the culmination of many decades of improvements in the mass production of cacti and its distribution all over the world. It's a finely-tuned supply chain whose volume is probably in the tens of millions of plants these days. It's like ordering a fast food meal – you can almost be assured that they will be of a certain size, type and quality.

Did you notice the specimens in 2 inch pots are always of a certain size? Do you recognize the types of plants sold after a while? This is the result of mass production: I think purchasers choose to order a regular mix of species from wholesalers all the time, a safe decision. This is why one can call these *commodity cacti*, after all, you can buy them like you buy detergent or anything else in a supermarket or hypermarket.

Now, what have we left out? Ah, the **consumer** who bought one or more plants.

Let's see: The horticultural people who grew the millions of plants are experts who have untold person-years of hands-on experience. The logistics people are experts who have optimized the supply chain so that goods can be shipped all over the world at low cost. The retailers who sell the plants are experts in marketing and consumer behaviour. And what about the consumer who had just bought a plant? Well, living in a tropical country like Malaysia, most of us didn't know a thing about these plants when we first bought one. Everyone in the chain can be fairly called experts at what they do, and what they do is highly optimized to the point of near-perfection – *except for the consumer at the end of the chain*.

So it's some kind of perfection up to, and including, the point of sale. Beyond that, the experts are no longer in charge. Actually, the horticultural experts are definitely in charge only during the growing phase of the plants, that's why a stock of newly-arrived cacti look so perfect and older stock, less so.

Perhaps this is a kind of endgame in consumerism. A large number of highly intelligent people have made continuous improvements to the point where you and I can buy great products at a low price. It's like the smartphone everyone has now, except that cactus plants are living things and plenty of us consumers in tropical countries lack the expertise to grow exotic plants well and so most commodity cacti will grow weak and die in the hands of inexperienced owners.

One can think of it as a gross mismatch. It's like getting a supercar with a manual transmission and promptly crashing it because you tapped the accelerator pedal a little too hard. The problem is not with the supercar or its manufacturer. We just need to be better prepared in order to get the most out of the supercar or the cactus plant. With supercars, we can sign up for expert driving courses that are safely conducted on race tracks. But if you ask nursery staff about the cactus plant that you are buying, at most you will get very generic suggestions. The hypermarket staff would prefer not to say anything. Generally, you are on your own².

Let's take a closer look at commodity cacti.

2 Of course, in many countries one can go to a specialist nursery or some kind of botanical garden where one can see many small and large specimens and talk to experts. That's kinda in short supply here in Malaysia.



Spotted in 2018. Not even out of the box yet! The upper box still has newspapers for padding. Note the mixture of plant types and the *Parodia* specimen with a flower.

A Closer Look at Commodity Cacti

Now, it's not my style to interrogate plant sellers like they owe me a discussion about how their business is run, so the following was pieced together from bits and pieces of information and by assuming that most people follow the rules that are supposed to be followed. I don't have any first-hand or inside information on the inner workings of the supply chain. I'm also not going to accept any volunteered information on this topic now or in the future – let them keep their trade secrets.

Look at the above picture of incoming stock. Since international phytosanitary laws generally require plants to be exported or imported with their roots bare, I suspect the boxes are really from a local distributor who imported the stock and prepared the plants to be ready for sale. Phytosanitary laws are needed to protect native plants and economically-important plants from threats like pests and viruses (an over-simplification, but I'm sure you get the idea³.)

You've probably seen the same plants in supermarkets or at plant nurseries, so these are commodity cacti and they are in new soil. The soil is usually okay too, airy and well-drained with some added perlite and perhaps a sprinkle of Osmocote-like slow release fertilizer. The supply chain has moved the plants from the grower to the point-of-sale and has prepared the plants for the consumer.

³ In Malaysia, I think Bahagian Biosekuriti Tumbuhan at Wisma Tani is in charge of this (as of early 2019). I went there ages ago and I think they are used to people in the agriculture sector, not individual urban gardeners.

The commodity cacti supply chain up to the wholesaler is so finely-tuned that there is nothing much to complain about. The one **really bad thing** they⁴ are guilty of is the supply of cacti with glued-on straw flowers or plastic flowers. Do not buy specimens with fake flowers glued (or perhaps, *stabbed*) on the plants! Let the suppliers and the retailers lose money on those abominations! If you bought one either you were cheated because you didn't look closely enough or they avoided telling you what it really was, or you were just cheating yourself, you took a short cut and paid money for a fake of something you wish you had. You'll probably be bored with it after a few weeks. If you want cacti with flowers the easy way, buy plastic plants instead. There are also plenty of pictures on the Internet of cacti with beautiful flowers that you can enjoy all the time.

It is at the retailing side that this well-oiled machinery runs into problems. A common joke among cacti enthusiasts worldwide and on the Internet is that cactus plants for sale sometimes⁵ come with scale insects for free. Remember, the plants are at their best when they have just arrived. It usually goes downhill from there. This is prevalent among hypermarkets or general plant nurseries. *Observe old or unsold stock carefully.*

Also, if you have perused commodity cacti where they are sold, you might have noticed that most outfits keep the soil bone-dry. That is, the trays of plants look as if they have never been watered. If they selling at a good pace, some might argue that this is acceptable. But after a while, the plants are going to be stressed. Why? For example, that *Parodia* with the flower, *it's not a desert plant*⁶.

For many general nurseries, their skill set is really in *plant retail*, and not keeping plants alive for a long time or caring for them in the long term. Fresh plants that are not quickly sold can be exposed to pests and diseases that are sometimes endemic in plant nurseries that are poorly maintained. In this business it's not possible to operate like boutique outfits; the prices of garden plants cannot be too expensive, thus there is a minimum of hired manpower and plants do not get the best care. Scale insects is just one of many nasty things that you might get for free if you are not careful. Therefore, always inspect any plant you wish to buy carefully. Inspect regular houseplants as well, for they may harbour these insects too. We'll talk more about pests later.

Outlets that specialize in cacti (and succulents) usually do a better job. Outlets that have large and small specimens and can care for the plants and maintain their quality would be the best place to buy plants. Unfortunately such outlets are uncommon or possibly non-existent in Malaysia. Well, you can try Cameron Highlands but I haven't been there in years⁷.

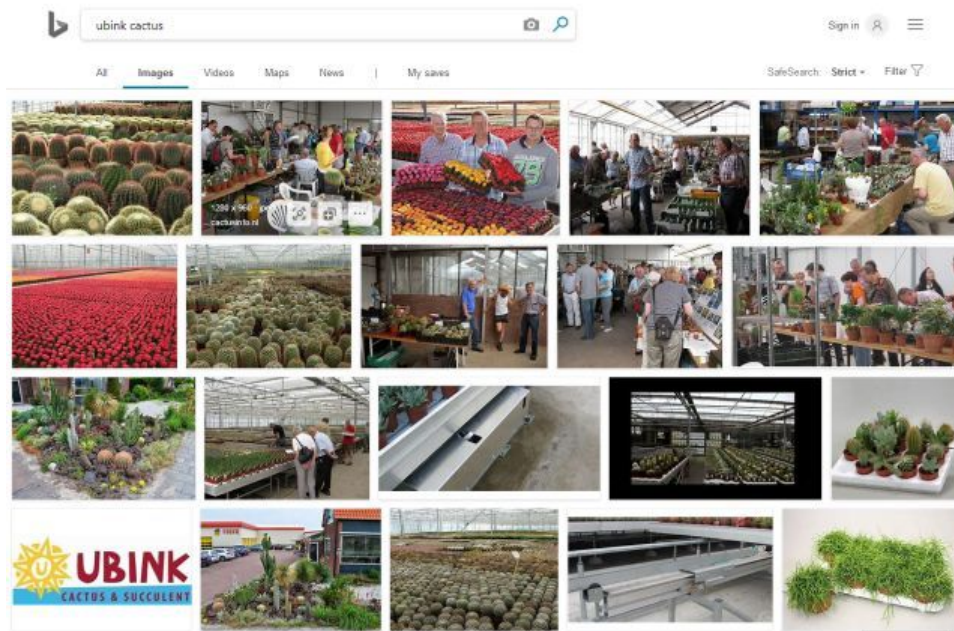
Commodity cacti is a low cost, high quality and highly uniform mass-produced product. It's always going to be better than an equivalent that is in limited production. That is why everyone is selling these imported plants.

4 It's unclear who started this ugly trend. A lot of cacti enthusiasts cringe at this kind of stuff. Plants with fake flowers is not about good gardening, it's about retailers pushing SKUs (stock keeping units). They are just very hungry for what is in your wallet, and they will try every trick (and more) to make you buy (sometimes unnecessary) things. A ravenous horde of marketing and retailing people is the furthest thing from gardening. Thankfully, this kind of product is seldom found on display these days. If you searched Alibaba in mid-2019, the new gimmick is plastic cactus and succulent plants. So you see, this was never about gardening.

5 If you have ever been a victim of this, you'll want to use "always" instead. But new stock is usually okay.

6 If this *surprises* you, then you'd better read the rest of the stuff on this site.

7 Traffic during the holiday season is murder. Some folks think they can open up and develop the area in perpetuity without destroying the local climate. Gee guys, at what point will you set limits?



Searching for stuff can take a lot of time, so in the following we will guide you quickly through a few items of interest. This image search result is a great summary of Ubink's very modern production facility. (Low quality screenshot, 2019-07-27.)

Modern Mass Production is Amazing

Ubink Cactus & Succulent or Handelskwekerij Ubink BV or simply Ubink⁸ is one of the top producers of cacti worldwide. It is a Dutch wholesale nursery with an international footprint. There are some must-see videos on their website, look under 'Bedrijfsfilm' or search Youtube. Where labour costs are high, technology and automation is how you grow millions of specimens for sale every year. The bulk of its production seems to be at Tenerife in the Canary Islands, probably in partnership with Canary Cactus⁹. An image or video search of 'Ubink cactus' or 'Canary cactus' is highly recommended.

Unfortunately Ubink's website is in Dutch, but there is a Zantingh gas burner system customer reference¹⁰ that says Ubink's production area at Tenerife is 250,000 m². Also, you can search 'Logiqs Ubink cactus' to see links to pictures and videos of their automation system¹¹. The Netherlands is a horticultural powerhouse, and deservedly so.

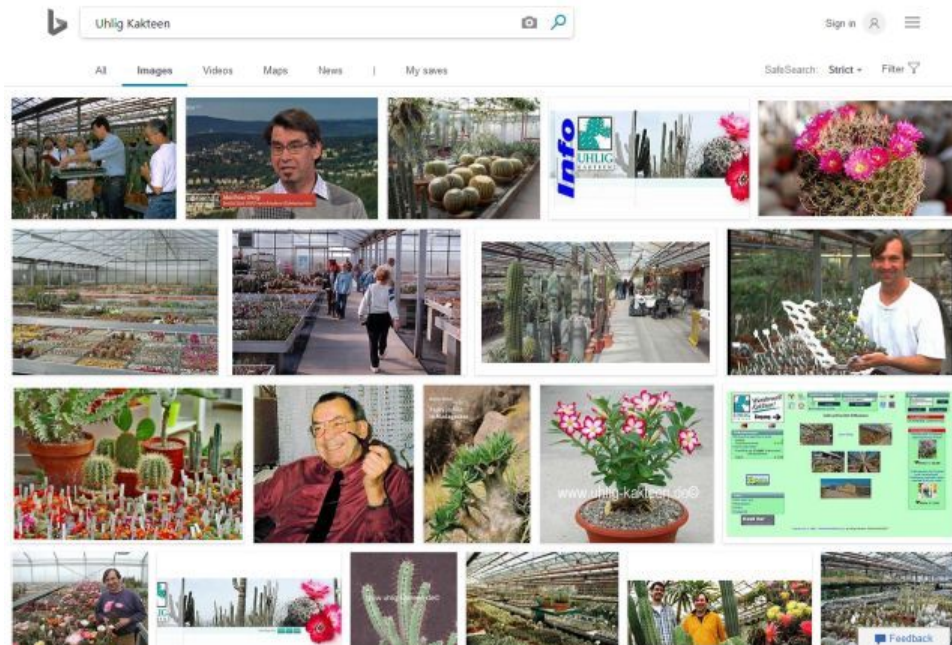
There is no question modern mass production is amazing. The retailer is assured of a reliable and high quality supplier. The customer has the assurance that plants are nursery-grown and not wild-collected and everything is probably done in an eco-friendly fashion. A local competitor in Malaysia is unlikely to beat such an advanced mass producer of cacti in a straight fight.

8 <http://ubink.nl/nl>

9 <http://englisch.canary-cactus.com/>

10 [http://www.zantingh.com/en/references/cacti-and-succulent-grower-ubink-in-kudelstaart-is-growing-\(netherlands\)/](http://www.zantingh.com/en/references/cacti-and-succulent-grower-ubink-in-kudelstaart-is-growing-(netherlands)/)

11 <https://www.logiqs.nl/en/pf/ubink-cactus-succulent-nursery/>



An image search for Uhlig Kakteen, a specialist grower of cacti and other succulents in Germany. Check the videos too. (Low quality screenshot, 2019-07-27.)

Experienced cactus growers can also source their plants from a specialist nursery such as Uhlig Kakteen¹². Note that Ubink probably offers hundreds of species of plants on a wholesale basis, that's nothing to scoff at. By comparison, Uhlig Kakteen has over 5,000 different species in their care. Ubink and Uhlig Kakteen, plus many other equally impressive operations, are options available to growers in Europe. This is due to a large and affluent market in Europe and in the US that can sustain very large scale operations that can offer quality plants for sale at a low price. In the US, Altman Plants calls itself "the largest producer of cacti and succulents in the United States¹³." There are many specialist nurseries in the US as well.

South Korea is reputedly the largest global producer of grafted Moon Cactus, or *Gymnocalycium mihanovichii* 'Hibotan' (see screenshot on the next page.) A 2004 paper by Jeong *et al.*, "Production and Breeding of Cacti for Grafting in Korea" puts the global trade in grafted cacti at 15 million, of which South Korea accounts for 10 million¹⁴. Most are brilliantly coloured 'Hibotan' cultivars.

It is easy to find Chinese mass producers of cacti on Alibaba. Chinese nurseries generally focus on the most popular types. Kinofarm¹⁵ is one such wholesale nursery that I found that has its own website (see screenshot on the next page.) Note that they are actually selling 'auspicious plants', and attractive cacti are merely a type of auspicious plant. Some produce Moon Cactus too. For the urban gardener in Malaysia, if you browse for wholesale cacti on Alibaba¹⁶ for a while, you will recognize a lot of the plants you saw on sale at local plant nurseries.

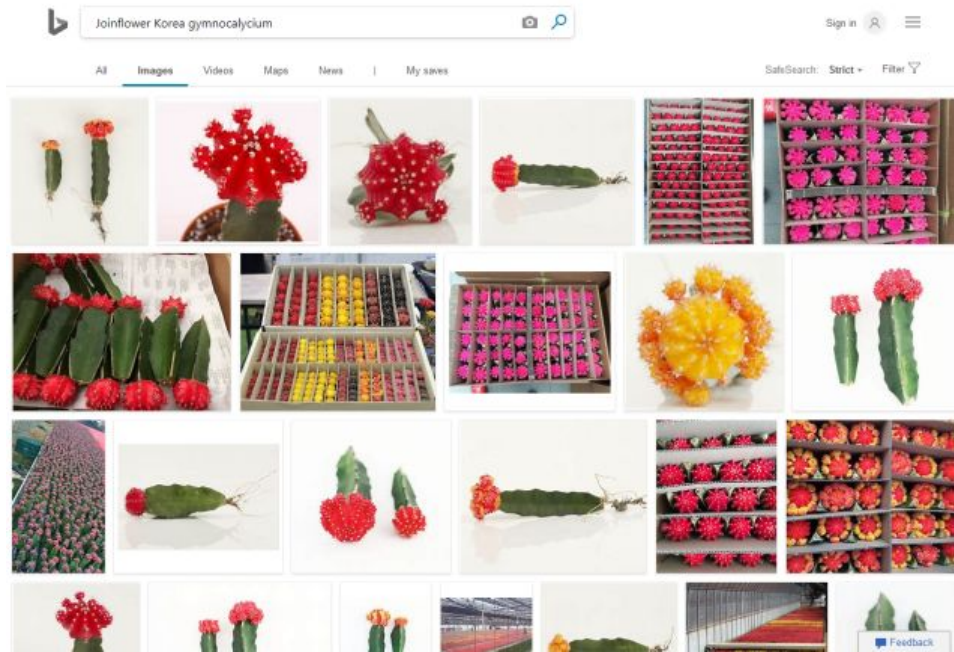
12 <https://www.uhlig-kakteen.de/en/>

13 <https://altmanplants.com/brands/cactus-collection/>

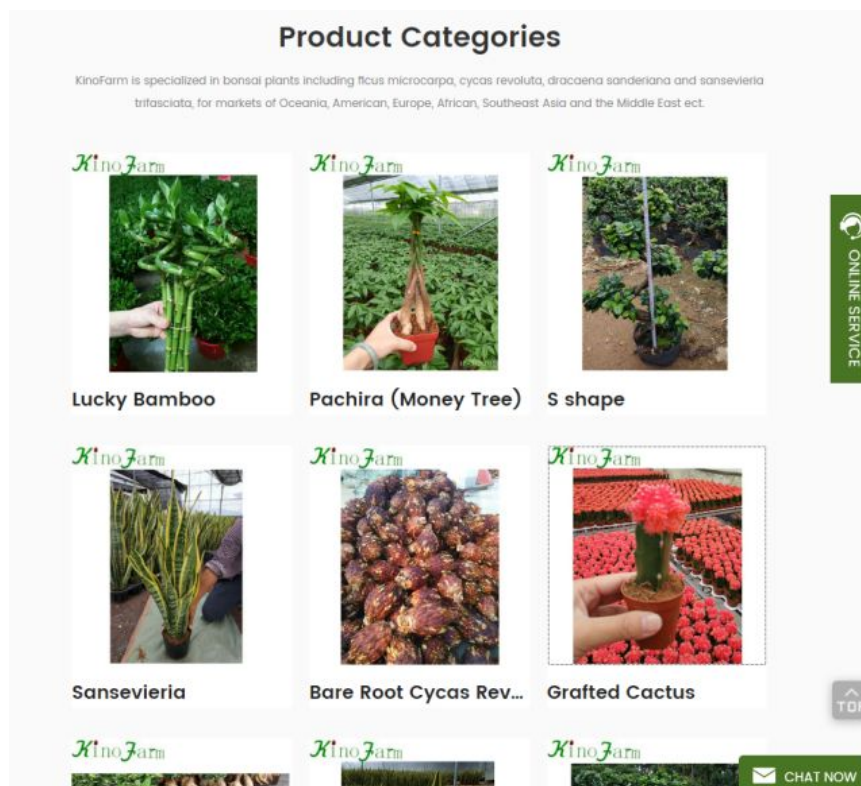
14 It's a freely-accessible PDF, search for the title plus 'PDF'.

15 <http://www.kinofarm.com/>

16 A reminder: Any plant will need paperwork (cert plus permit) to be legally imported into Malaysia.



Joinflower Co. is a South Korean company and a Moon Cactus specialist. There are also large Moon Cactus producers in China. (Low quality screenshot, 2019-07-27.)



Kinofarm is located in Fujian Province, China. Their products are also listed on Alibaba. (Low quality screenshot of Kinofarm's website, 2019-07-27.)



Plants for sale at a hypermarket in Klang Valley, July 2019. The sign is a technically correct sentence designed to bamboozle or mislead consumers. Plant cannot absorb EM radiation in the same way an air filter filters dust. Use a Faraday cage instead.

Everything is Amazing, So What is the Problem?

Sorry, I'm going to have to be a wet blanket and say that there is a problem, especially for cactus growers in tropical countries. Remember the point-of-sale? It's the pivot where money and plant are exchanged. On one side is the horticultural industry, who has perfected this big system to the tune of billions of dollars – the cut flower industry is in the many *billions* of stems annually. On the other side, you the buyer. In the middle is the retailer, who just wants to sell, sell, sell! And as you can see in the picture above, sometimes retailers will say just about anything to drive sales¹⁷. It's a grossly unbalanced scenario that favours the side of big businesses.

A tropical country such as Malaysia is not a big market for cacti. So we are a small market with a humid tropical climate and traders import these plants and sell them because commodity cacti are the cheapest and best product. Look at what the sellers are doing and ask yourselves this: Does the importer know what works best in a tropical climate? Nope, they just import the usual mix of species. Are these species appropriate for cultivation in a tropical climate by gardeners who have little information to go by? Well, I'll bet the traders are very much focused on shipments and revenue rather than the fate of their plants – if you waste time in a trading business you may miss the boat. Anyway, who wants to spend years testing products that already look so good¹⁸?

¹⁷ I believe this is the fault of the supplier – some of the supplied science-related feel-good gobbledygook, like the one in the picture, are *utter rubbish*. In August, these were still unsold – and deteriorating. Supplier *fail*. Buck up fellas!

¹⁸ As in: It's a perfect cactus plant and it's cheaper than a can of beer. *Slam-dunk value*, just trust us on this!



The *Haworthia limifolia* on the right was either a seedling or an offset of the specimen on the left, June 2018. When growing well, the plant on the left sent out flower stalks one after another. By mid-2019, harvested seeds produced an additional 8 seedlings (germination rate was poor.) Successful cultivation is much more satisfying than treating these plants as disposable items.

Point-of-Sale Perfection is a Consumer's Paradise

While it's fun to criticize the horticultural industry, there are no real bad guys in this drama. In driving towards higher volumes and revenue, the industry has developed into an apex from which it cannot climb down. They need as many people to buy horticultural products as possible. Hence, *consumers* are the target audience. There are not enough *gardeners* to sustain a huge horticultural industry. This is why a modern economy is a consumer's paradise. Buy stuff, *yeah*.

What about gardening? It becomes a hazy thing that happens after buying stuff. So much has been invested into the 'buy stuff' bit that actual gardening has been lost in the cacophony. The tens of millions of cactus plants sold each year globally, ever wondered where they all went? Answer: most must be dead. But let's hope consumers buy more, ha ha. Put it another way, the industry and the consumers are locked in a co-dependent embrace while the gardeners are sidelined.

If consumerism has overwhelmed traditional gardening, what can be done to save the latter? Since one cannot easily come across good private cactus collections in Malaysia, it means that cactus cultivation is not trivially easy in the tropics. The wholesalers are in temperate zones, too far away to help. The importers are more intent on making money. Nurseries and retailers generally have no experience in cultivating these plants for years. Some care more about sales volume. The sales staff think these are all desert plants and tell you the usual stereotypical cultivation tips. And if we search the Internet, most material is about collections in temperate countries. The path of the tropical urban gardener is thus littered with barriers and obstacles.



Succulents for sale at a plant nursery in Klang Valley, Malaysia (2017). Arrangements of succulents for decorative purposes is something of a fad in the last few years. It's more art-fashion-decor-landscaping than traditional gardening.

Consumer or Gardener, or Somewhere in Between

There is no true or 'proper' way of cactus gardening. We should experiment widely, observe what happens, then adopt stuff that works. The starting point is this:

What do you want from your cactus plants?

Different people have different gardening styles and preferences. Gardener P may really like creating succulent arrangements to decorate a condo where space is at a premium, focusing on artistry and aesthetics rather than worrying about trying to save each and every plant. The modern retailing scene caters quite well to gardeners like P.

Gardener Q may not be interested in beautiful arrangements of plants at all, preferring to focus on the practical challenges of growing fine healthy specimens over a long period of time. Q may have been inspired by the many pictures of flowering cacti in books or on the Internet. And when cheap and beautiful specimens go on sale, they can be hard to resist. If you have failed to keep them alive for a good period of time, now you know why – a hot and humid tropical climate, ever-present pests and diseases, indifferent sellers, and inexperienced buyers all combine to spoil your cactus dreams.

P and Q are really not all that different. After gaining experience handling plants, P will want to propagate succulent plants at home. With a little effort it's easy to multiply them. Q still has to rely on the local horticultural industry to supply new specimens¹⁹.

So we are all a kind of consumer-gardeners. Our biggest problem is the lack of long-term success in cactus cultivation. To rectify this problem, we need a body of knowledge that is well-matched to cultivation in a tropical climate – specifically the hot and humid tropical lowland climate.

19 For the average grower in Malaysia, it's not cost effective to file the legal plant import paperwork by yourself.



Succulents on sale at a hypermarket in Klang Valley, Malaysia, August 2019. The plants appear to be *Echeverias*. This is the typical look of old, half-sold stock at hypermarkets. The best specimens have presumably been sold, so some of these are less than perfect-looking. A few are brown in colour and are totally dead.

A hypermarket would prefer to sell stock quickly; they have no capability to care for these plants under indoor fluorescent lamps. So, the economics of successful mass production and a consumer-driven marketplace dictates that plants are being sold like so many cut flowers – a disposable, mass-produced product.

Needed: A Body of Knowledge on Tropical Cultivation

In Klang Valley, Malaysia, the cactus market has been stagnating for many years. The sellers have been pushing the usual trays of commodity cacti like half-asleep zombies. What about progress or improvement, or advancement of cactus cultivation? The different pots or trays, the carrying bags, the plant arrangements, all those ‘improvements’ are just ideas to improve sales.

To the seller, it’s all about sales and money. But to the buyer, it’s less about money and more about the *emotional investment* in a potentially rewarding long-lived plant. This emotional investment should not be taken lightly. A cactus plant is not a disposable cut flower. The sellers have mostly tried to treat buyers as malleable consumers – see shiny new thing, open your wallet, buy the product, never mind about imparting *knowledge*. So it’s no surprise if buyers feel their emotional investment in the cactus plant have been betrayed by the sellers.

If we assume the sale of cacti in Malaysia started in the early 1980s, it means nearly 40 years of stagnation. As far as helping you to cultivate cacti is concerned, the sellers have failed. Probably they have not tried very hard to help. They had 40 years to make things happen.

If we continue to rely on them, *nothing will improve, ever.*

So let's not rely on them. It is up to us gardeners to help each other by sharing knowledge.

This website will show you some of the things that can be done in a tropical climate with limited resources. I've killed plenty of specimens over the years, but among the many failures, some plants did well and a few species even realized their full potential. A few specimens (one is shown below) are probably in the over 20 year old age range. Originally, they were likely plants in 2 inch pots. I have never bought any large mature specimens.

Instead of gardening by guesswork, we need to understand what we are doing. With knowledge comes power. We can then take charge and push in the direction that we want. If we have a large body of knowledge of what works in the tropics, each individual gardener will be able to choose and apply knowledge as needed in order to turn their personal gardening vision into reality.



A bee in a half-open cactus flower. The two tufts are flower buds. Sometimes, one can detect a slight floral aroma if you put your nose very close to the flower; perhaps that is why bees often visit the yellow flowers. March 2019.

For inexperienced urban gardeners in the tropics, a potential problem would be this: *It is not possible to get instant results.* Cacti do take time to grow, and well-grown plants usually do not get that way without some effort on the part of the gardener. But it is possible to keep great-looking plants without too much effort. We just need to work smart – make your effort count. A shortcut would be buying large mature specimens, but even so, if they are cared for poorly, the plants may be reluctant to flower. Remember, think “practical solutions”, not “magical solutions”.

A Note of Caution for the \$\$\$-minded Folks

In case some of you folks think that the above is a sure-fire money-making horticultural scheme that will surely²⁰ rake in loads of cash, let me just say a few words of caution here.

In order for fellow urban gardeners in the tropics to grow these plants well and see them flower, they need the knowledge to cultivate the plants successfully over a period of some years. So, maximum benefit for all means that knowledge cannot be withheld. Making such useful knowledge a trade secret will only enable the horticultural industry to further exploit consumers. I choose to empower fellow gardeners rather than keep them in the dark. So in this scenario, it will never be an exclusive thing that any single company or group can monopolize, control and exploit.

If you want to grow these plants for profit in the tropics, it will never be something exclusive to any one company. The horticultural industry is very good at turning widely varied species of cacti into commodity products. Any mass producer can order seeds and start supplying commodity plants in a few years. Remember what we have discussed – commodity cacti. As such, anyone who think that they can make a good business out of this must know what they are leaping into. I am only interested in spreading knowledge to fellow gardeners. Your business is *your business*.



Transplanting *Haworthia limifolia* seedlings, October 2019. These were grown from the seeds of the large plant on page 9. The seedlings are about 7 months old, grown indoors at a leisurely pace in a mix of jiffy pellet and coco peat.

20 “Shirley this is a million-dollar idea, what can go wrong?”

Post-2020 Update: Online Sellers in Malaysia

These days there are a lot of online sellers of C&S (cacti and succulents) in Malaysia. Often, they have a Facebook page. Those that are run as businesses can usually be found on online shopping malls. Many sell commodity cacti, but there are a few who sell very nice specimens, including some with flowers. Premium specimens are not cheap. There are also boutique outfits that sell beautiful or artistic arrangements of cacti and succulents. As always, *consumers* are well catered for.

I have never bought any C&S from online stores. If you are buying plants online, do apply your online shopping skills to minimize risk. For plant material, there may be shipping restrictions or complications. Now in theory, plants and seeds need phytosanitary permits to enter Malaysia or to cross between West Malaysia and East Malaysia, so anything without the requisite paperwork may run afoul of Kastam²¹. The need for phytosanitary protection probably means that seized plant material will be destroyed. If a seller helpfully mentions that shipping is *at your own risk*, it may mean that a transaction has ended in tears before. As such, for Malaysians I think it is prudent to “buy local” whenever possible – for example, if you are in West Malaysia, stick to sellers from West Malaysia. And if you really must buy expensive specimens that need to go past Kastam, personally I think it’s a good idea to ensure that shipping is done correctly.

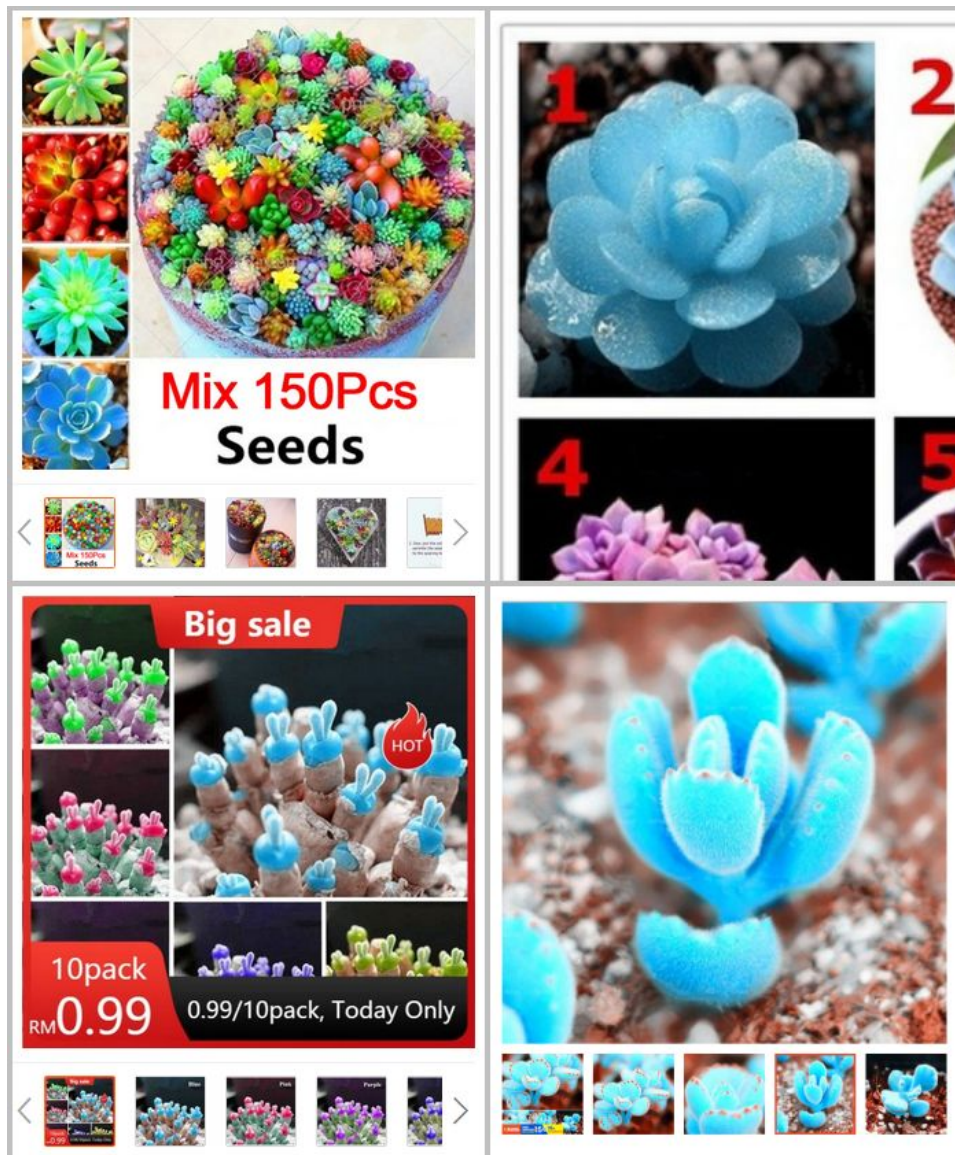
Finally, if you come across sellers of C&S seed that originate from China, be very wary, for I have seen too many of such products sporting hilariously doctored pictures of C&S to ever trust them. See the next page for several examples that I picked out in April 2021 from two popular online shopping malls in Malaysia. Don’t fall for such traps! For most C&S enthusiasts, it’s a good idea to stick to buying plants from reputable local sellers with a good track record. Growing C&S from seed in a hot tropical climate is not a simple thing – you can read all about this in the chapters on growing cacti from seed.

As of early 2021 in Malaysia, there are sellers who appear to be doing a pretty good job in caring for their plants. Everyone still appear to be selling imported plants, but some have specimens that flower and one or two appear to be trying their hand at pollination and growing the resulting seeds. If some sellers are successful in keeping their specimens healthy and are able to help their customers to do the same, I think that is a good thing in general.

I hesitate to call it a perfectly good thing, though. One online seller who sells beautiful C&S specimens also lists a neonicotinoid insecticide for sale, so growing C&S successfully their way may require you to regularly spray a systemic insecticide to keep the bugs away. That’s not the kind of gardening that I want to do, but it may be a valid solution or strategy for other C&S enthusiasts.

Still, it’s good to see that some sellers are serious about maintaining their stock. Those who sell premium specimens for example cannot treat their plants like disposable items – expensive specimens must look healthy to command high prices. Thus imported specimens that have been in Malaysia for a long time may be better acclimatized to local conditions.

21 Jabatan Kastam Diraja Malaysia – Royal Malaysian Customs Department.



Upper left: A suspiciously perfect arrangement. The colours are too saturated. Alibaba has a great selection of plastic succulent plants... **Upper right:** A plastic plant in translucent blue. **Lower left:** Scammers often like to tweak the noses of their victims with something outrageous. **Lower right:** Fluorescent blue, ahahahahaha! (Cropped and/or resized screenshots, 2021-04-15.)

Acclimatization is something that I am looking into, because specimens grown in different climates may behave differently²². We need to gather much more knowledge on how various species of cacti behave in a hot tropical climate. My personal policy is to avoid searching online for the knowledge that mass producers possess, because I have found that growing C&S in the tropics is often a somewhat different cup of tea. Instead, I focus on building up my own library of knowledge. Almost everything is documented, so you can see the pictures for yourself and form your own conclusions. ♦

²² This will be discussed in the next chapter. I bought two commodity cacti in 2021 that may have grown up in a milder climate and they look plump compared to the ragged specimens of the same species in my collection.

Version Information

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