

FloralNEWS

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A Selecta Cut Flowers Publication



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On The Cover:

Seaboard Marine, an ocean transportation company, provides direct, regular service between the United States and the Caribbean Basin, Central and South America. Read more on p. 4.



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Building Powerful Partnerships

Our world seems to get smaller, faster and more and more unpredictable by the day. In looking for the solution as it relates to leading and managing our businesses in this rapidly changing world, there isn't one answer. However, it is increasingly clear that working together and performing with an eye on today and tomorrow is a success driver.

The more complex and the more global it gets, the more important it is for each other to understand how and where to provide leverage – and more than ever for small and medium-sized companies that make up the core of our industry. Having a cooperative attitude and making out the right partners provides the opportunity to build powerful partnerships – inside and outside our businesses. As people inside a business in various functions and departments need to become part of the DNA of the total company, we strive to become part of the DNA of your company. Can we do this all by ourselves? Of course not!

In light of that it is a pleasure to introduce to you in our present issue of Floral News a number of our partners that provide competences and values that offer a remarkable platform to grow with you long-lasting and powerful partnerships. Together we are looking forward to serve you, our valued customer.

Sincerely yours,

Nils Klemm
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Carnation for Mother's Day

The traditional Mother's Day flower is a carnation, either pink or red carnations given to mothers to represent love for them, or white carnations worn in respect for those mothers who are no longer living. This custom originated in the U.S. where in 1906 Anna Jarvis promoted the wearing of her mother's favorite flower, a white carnation.

Carnations have been getting more and more popular over the last few years, but Nobbio® varieties are bound to take that to the next level! These varieties are so stunning and unusual, most people are not even aware that they are carnations.

To learn more on Nobbio® [click here](#).



Nobbio® carnations are a perfect choice for Mother's Day.

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Q & A



with Jorge A. Garavito, from Seaboard Marine

An interview with Jorge A. Garavito from Seaboard Marine, the leader in Latin trade transport.

Q: Please tell me more about Seaboard.

A: Seaboard Marine is an ocean transportation company that has provided direct, regular services between the United States, the Caribbean Basin, and Central and South America for nearly 30 years. Our current highlights:

- Operate 38 ships (nine owned).
- Have twelve offices (five ports) in U.S./Canada.
- Have three main regions: Central America, South America, Caribbean.
- Regularly serve 28 countries (45 ports) in Caribbean and Latin America.
- Have 2,264 employees (997 in U.S.; 1,267 overseas).
- Have been a member since 2002 of U.S. Custom's C-TPAT program. Initial validation was received in 2008. Validation renewal granted in April 2012.

Q: Which "fresh cut flowers" routes do you operate?

A: The main route we operate is from Cartagena, Colombia to Miami, Florida, U.S.A.

Q: With which crops do you have experiences and how they can be transported by container?

A: We've have experiences with carnations and ba-

by's breath (gypsophila) from Cartagena to Miami. We send them in a 40-ft., refrigerated container where we have a constant control over the temperature, creating a perfect atmosphere for the flowers.

Q: Are there varieties that are more resistant to transport stress and less sensitive to botrytis?

A: Yes, carnations are more resistant than roses, and since we use refrigerated containers where we have a controlled atmosphere, it's nearly impossible for the flowers to come in contact with moist or humid climates. That means these containers help prevent botrytis and also transport stress; it's not like air freight where they are more exposed.



Refrigerated containers with a controlled atmosphere help prevent botrytis and also transport stress.

Q: Which pilot projects have you performed so far?

A: We had a project where we send carnations and baby's breath, but one of the main problems we face was the ground transportation in Colombia, since most farms are located in the interior of Colombia. This becomes a problem for our clients since this issue increases their cost and time, but in spite of that, it was huge success, and everything went accordingly as planned.

Q: What are the advantages of sea freight for the cut flowers growers and for the buyers as well?

A: The clear advantage is the money they save on sea transportation; you can save 50 percent or more, which means they are able to lower the prices, making buyers happy. Although as I mentioned before, there are some cases where the inland transportation in Colombia can be costly and have time issues, but even with this problem, sea transportation still has lower rates.

Q: Can a closed cool chain be organized from farm to point of sale?

A: Yes, refrigerated containers are easily movable. They can be placed anywhere on the farm, and once it's full of flowers, it's ready to be sent to port. Also shippers can send flowers on refrigerated trucks directly to the port of loading. There flowers are transloaded to reefer containers, using a "Sortie Reefer Container" in order not to affect the cool chain when transferring the flowers from the truck to the container.

Q: Which technical conditions do you offer?

A: Seaboard Marine offers refrigerated containers with controlled atmosphere for the flowers. These containers help prevent humidity. Also there is a new technology called "O3" that gives a better environment for the flowers while in the container. Seaboard Marine also offers a refrigerated storage area for cargo inside Miami's port terminals that is exclusively designed for perishable that guarantees our customer's cargo to be in a cool and control at-

" (...) sea freight will play an important role in the flower industry in the future as this mode of transportation reduces costs.

mosphere at all times. Our company has built a robust level of time-sensitivity into process and finish. We created special import departments at all offices that expedite the clearance of reefer freight and take great pride in being prepared to handle any variety of issues posted by Customs, the Department of Agriculture, and other agencies. We also work closely with importers and customs brokers prior to a vessel's arrival, so that advanced efforts can take place.

Q: How do you see the future of the sea transport for fresh cut flowers? Do you think that sea transport route will become an increasingly preferred option in the future?

A: Yes, Seaboard Marine believes that sea freight will play an important role in the flower industry in the future as this mode of transportation reduces costs. Flower industry in Colombia has been facing big challenges, mainly caused by Colombian Peso revaluation and high personnel expenses, and they need to reduce costs all over. **SCF**

Jorge A. Garavito is Cooperative Communications Coordinator at SEABOARD MARINE. You can reach him at Jorge.Garavito@seaboardcolombia.com.co

FOR MORE: www.seaboardmarine.com



WELCOME ABOARD

Selecta new partners.

As a company we try to align ourselves with the best partners possible to ensure that all involved in the value chain of the floriculture world have an easy access to the best quality of our genetics. We choose partners carefully because we have a quality of standards and we expect the same in return. We've recently teamed up with Ball Australia and Ball Straathof and are proud to introduce you our new partners.

Ball Australia, a young plant company supplying a wide range of cut flowers, annuals, and perennial varieties to the Australian market, earned the well-deserved reputation of always putting their customers first. Their primary goal is to help clients maintain their business success with the best products and programs to suit their needs.

Our new agent in South Africa, Ball Straathof, is the leading horticultural distributor and producer of flowering plants and seeds to all sectors of the industry as gardening public. Ball Straathof is known for offering the best genetics, quality, and service to the floriculture industry.

Welcome aboard!



New representative in Australia: Ball Australia

By Kate Grant

Ball Australia is a young plant company supplying a wide offering of annual, perennial, and cut flower varieties to the Australian market. Our extensive connections to breeders and new market releases means we are consistently developing, improving and supporting the best genetics to bring innovation to Australian growers.

The Australian market has recently come through a 9-year drought, which had a significant impact on consumer plant purchases, and the varieties that would withstand these dry conditions. Ball Australia was able to diversify and offer enough of a selection to keep our growers and the consumer interested. Now that the drought is over, growers are profitable again and our industry is enjoying strong growth.

One of the challenges in our market is the Australian quarantine law, which imposes very strict regulations on imports, with the aim to minimizing the risk of exotic pests and diseases. Seed imports can regularly be held up to 6 weeks before released and made available to us. Cuttings cannot be imported, so we need to grow our own stock plants. Most of our stock is started from TC, which is allowed. For items that are not available in TC, cuttings need to go through a methyl bromide gas treatment and then grown in a quarantine greenhouse for 3 months. So planning sufficient quantities, timely delivery dates,



Ball Australia production team.

and reliable healthy stock is crucial to keep our market fresh with plant material.

We are very excited to partner with Selecta and see a bright future for our business relationship. With the abundance of genetics in today's market, a strong supply chain partnership will set us apart from the competition. This partnership has also presented us with a 'Pandora's box' of new genetics and lines that will suit our Australian growing conditions.

Kate Grant is Marketing Manager at Ball Australia. You can reach her at kateg@ballaustralia.com



New representative in South Africa: Ball Straathof

By Kathy Varney



Ball Straathof team.

Straathof's Seeds was founded in 1952 by Cornelius Augustinus Straathof, better known as Kees. It is a family business in its second generation, headed by Kees' daughter, Marlaen Straathof. Straathof's Seeds is one of the largest speciality seed and plant companies in southern Africa, specializing in flower and vegetable seed as well as plugs and cuttings. This means using only the highest quality and offering the best range and service. To be the best requires us always to have the leading edge and to be one step ahead of the competition.

In 2001 Ball Horticultural Company of the U.S.A. and Straathof's joined forces to ensure even better genetics, quality, and service to the South African industry. This gives Ball Straathof the opportunity to draw knowledge and experience from a large pool of expertise from some of the best in the industry.

Our retail brand, Kirchhoffs, has been the gardener's partner in South Africa for more than 100 years. Established in 1896, the eye-catching seed packets are still a favourite, available in garden centres and stores nationwide. There is a large range of flower, vegetable, herb, lawn, and Kirstenbosch indigenous seeds available to the home gardener.

Ball Straathof also supplies larger quantities of seed to professional bedding and cutflower growers as well as landscapers. The growing operation of Ball Straathof supplies annual and perennial plugs to bedding plant growers, cut-flower producers, landscapers and parks and recreational departments, both locally and internationally. This is a service specially geared for wholesale growers, landscapers, and members of the public requiring a bulk supply.



MD Marlaen Straathof receiving an award from the South African Nursery Association for: "loyal support of Sana & valuable contribution to the Green Industry over Numerous Years".

Ball Straathof is passionate about the environment and dedicated to enhancing and encouraging gardening pleasure for health and well being. All products have been trialed and tested under all South African conditions for ease of growing and quality, and new varieties are updated regularly.

Ball Straathof is very excited to be working with Selecta. We already have an established relationship with Selecta on our bedding and ornamental plants, and so we are thrilled to add their excellent cut flower genetics to our range.

Selecta is a very well-respected breeding company in the cut flower industry worldwide, and we're proud to represent them in South Africa. We believe Selecta has a very good range of cut flowers that suits the southern African climate. What we love about Selecta? They remain active with the selection of new products, eg., Solidago "Estelle"; produce high quality plants and plant material that satisfies our customers; and supports us by providing very good technical information on all their products.

Kathy Varney is Marketing Manager at Ball Straathof. You can reach her at kathy@ballstraathof.co.za

Estelle

World Novelty
High Volume Solidago
Endless Possibilities

selecta
Creating the future™



By David Abuchar

Carnation OPEN HOUSE

Between February 11 and 25 we held our annual Carnation Open House at Flores Aurora in the northern part of the Sabana the Bogotá. We had a total of 99 visitors representing 35 Colombian companies, and we also had one guest from Ecuador who is a recognized advisor for carnation cultivators in that country.

Our visitors were able to see two stages of growth of the varieties in exhibition in order to better appreciate the characteristics of each. The most outstanding varieties this year were Ormea, Randal, Mandalay, Grace, Tequila, Jade, and the codes 09M789 and DCM080234.

Ormea is a very complete standard red variety; it has strong stems, a good cycle, excellent color, and very good resistance to fusarium, the main concern for growers in the Colombian market. **Randal** is a very good choice of white standard, with a pure white color, strong stems, good speed, and high fusarium resistance. **Mandalay** is a Hot Pink standard, with a very beautiful and stable color that doesn't fade easily and excellent thickness and length of stems. **Grace** is a standard burgundy with very big flower size, good cycle, and excellent stem length and stem strength. **Tequila** is a unique yellow-purple bicolor with a very quick cycle, very good



During our Open House in Colombia we presented a whole Selecta carnation program.

stem length, and excellent resistance to fusarium.

In the miniatures, the most outstanding were **Jade**, a very good green with excellent stem quality and number of flowers per stem and also high fusarium resistance; **09M789** is a very promising hot pink, with an excellent stem length and number of flowers per stem, a very stable color and a very balanced spray, not too close, not too separate. **DCM080234** was also highly regarded for its speed, pure white color, and number of flowers per stem.

Overall we had two excellent weeks of show, with a huge attendance, where growers could enjoy not only the exhibition of our varieties but also some delicious snacks. The Selecta Colombia's team is very thankful with our hosts, Flores Aurora, for the special dedication and effort placed, that was evident in the neatness of the planting, the quality of the crop, and the readiness of their staff to help, all of which was definitive to make this a very successful show.

David Abuchar is Area Manager North, Central and South America at Selecta Colombia. You can reach him at d.abuchar@selectacolombia.com



David Abuchar (on right) presenting to the visitors **Ormea**, the star of the show.



Spray carnations program includes varieties with a high tolerance to fusarium and excellent performance in low production-cost systems.



Several visitors confirmed that with **Randal** they do not have any problems with Fusarium.



Pure white color, strong stems with big buds, good speed, and high fusarium resistance - these are the typical characteristics of **Randal**.



By Dr. Andrea Dohm

Breeding for the global market

Selecta has been breeding cut flowers for more than 50 years. Our cut flowers breeding history started in the 1960s in Stuttgart/Untertürkheim with the development of our first carnation varieties.

Every year more than 100.000 seeds are germinated, and promising seedlings are selected. The seedlings are mainly selected for their flower color and shape, but also a first evaluation of production and the general plant quality is already made in this early stage. Over a following period of a minimum of three years, all selected seedlings run through an intensive trialing process at different locations. During this period, reliable data on the productivity and flower quality are collected, and an intensive evaluation of the plant health takes place. At the end of this trialing procedure, the breeding team, product management, and the sales team decide together which candidates fulfill the requirements of our customers and the market needs in the best way and therefore shall become assortment varieties. It is always our goal to create varieties that perform well for all involved in the value chain: from cut flower producer to wholesale and from wholesale to retail down to the final consumer.

At Selecta we want to be sure to provide to our worldwide customers varieties that are perfectly adapted to their respective growing conditions. Therefore Selecta operates trial

facilities in many different countries and further places promising candidates at customers locations at a very early stage. In order to further improve the selection process, Selecta has set up two new greenhouses for trialing. In our facility in Selecta Kenya the breeding team performs year-round trials on 5.000 m² trial area in a plastic greenhouse. This trial house is also intensively used by the Selecta sales team to promote our varieties to customers. The biggest cut flower producers of Kenya, the companies Oserian, Homegrown, and Finlay, visit our trial house regularly.

At our breeding station at Klemm + Sohn in Stuttgart, Germany, the carnation trial has been moved to a new greenhouse, which offers ideal conditions for the selection of heat-tolerant varieties as well as for the selection for cold tolerance. This new investment costs over a half million euros. Some of our Dutch clients are planning to visit our new trial house in August, when the carnation trial will flower. We invite all our customers worldwide to visit our trial houses and to see our varieties growing and flowering.

Selecta has always had a strong focus on the quality of its varieties. This concerns the flower quality as well as the robustness and the healthiness of the plant. In order to ensure that we provide healthy plant material to our clients, we always "start clean," meaning that we grow all our seedlings in elite greenhouses and that we start to build up clean mother stock as soon as a seedling has been selected. By doing so we avoid any kind of virus or bacterial infection, and we are ready to supply healthy propagation material as soon as a variety goes commercial.

Besides the general plant healthiness, Selecta has always performed intensive breeding work with carnations to develop varieties with resistance to *Fusarium oxysporum*. For several years we have a partnership with a research institute in Albenga, Italy. The Centro Regionale Di Sperimentazione Ed Assistenza Agricola tests annually more than 500 genotypes for their susceptibility to five different races of *Fusarium oxysporum*. From this research work, Selecta is expecting to develop by midterm a fully resistant carnation assortment.

Although the focus differs slightly, in all cut flower crops, flower quality is mainly determined by the long-lasting quality during storage, transport and trading as well as by the following vase life. Therefore, we are trialing these characteristics of all selected seedlings from the first trial year on so that reliable data can be provided for all new varieties when they are selected for the assortment. Furthermore,

the breeding department is doing research to understand the genetics behind flower quality and vase life.

As in ornamental plant breeding in general, in cut flower breeding one major goal is still the creation of new colors, flower shapes, and plant features. In Solidago the breeding team of Selecta has been able to develop the first Solidago variety with white flowers and growing characteristics of the well-established yellow varieties. The white flower color is originating from a cross with a wild species. Whereas the first hybrid seedlings had very poor growing characteristics, through several generations of back crossing the commercial variety "Estelle" could be generated.

Selecta is of the opinion that breeding and research are the main drivers to stay competitive for the future. Therefore, every year we are investing several million euros in breeding and research. Breeding dedicated to combining quality with beauty while taking care of environmental aspects will create the best value for all our customers, the flower producers as well as the wholesalers, retailers, and the final consumer. This is how we aim to create a successful common future being an initiator of a partnership dedicated to creating value and beauty.

Dr. Andrea Dohm is Director of Breeding and Research for the Selecta Group.
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At our breeding station in Stuttgart, Germany, the carnation trial has been moved to a new greenhouse. This new investment costs over a half million euros.

In Selecta Kenya the breeding team performs year-round trials on 5.000 m² trial area in a plastic greenhouse.



Nobbio®

— carnations
in three dimensions!

By Dr. Flavio Sapia

Nobbio® varieties are not just other carnations. Due to their unique color range, they are not perceived as traditional carnations and are getting more and more florists' and consumers' attention. Floral designers are using Nobbio® carnations to add an upscale look into their arrangements; they are very popular for wedding arrangements, Mother's Day, and for Valentine's Day as well. Today the Nostalgic Look is in, and Nobbio® varieties fit perfectly into this trend. It took decades to breed these in Italy, and they are now available around the world.

The history



Dr. Nobbio Giacomo

Let's think of a particular moment of Italian history, the economic recovery after the Second World War: everywhere a ferment of reconstruction, new industries, rising welfare for a larger part of people, and a deep desire for beauty and good things. Imagine a good climate to grow plants all the year round, an inexhaustible demand for cut flowers, and a young man with a family tradition in floriculture and research. This was the world of the just-graduated Dr.

Nobbio Giacomo in 1947. He began to learn the art of obtaining new varieties in the farm of his uncle, Quinto Mansuino, a famous breeder of that time. Trained by Mansuino and being in touch with all the breeders of the Riviera and several foreign ones, Dr. Nobbio developed professionalism in breeding by mixing up a strict scientific approach and an almost magic instinct in understanding what is deeply hidden in plant genetics. Working with his uncle until 1956, he was mainly dedicated to obtaining new carnation varieties. From his work came many of the most successful varieties worldwide of the last 50 years.

The idea behind a new carnation type.

In that time most of the breeders were focusing in obtaining new Mediterranean varieties, a task pret-



Nobbio® patterns - seedlings.

ty easy in that moment, because of the lack of new types and low requirements to be competitive with the existing ones. The young Nobbio instead got from his uncle the impulse to experiment with new possibilities of plant breeding and not simply make crosses to pull out yet another variety.

Amazed by the beautiful colors and patterns of *Dianthus chinensis* and *Dianthus heddeewigii* and optimistic and self-confident, Nobbio started in 1949 a very hard process: "re-inventing carnation", using wild species, garden plants, and existing cut flower varieties, with the aim to put new colors and patterns in commercial carnations.

The difficulty and overcoming problems.

A cross between different species is not always possible. When achieved, it very often brings sterile hybrids during first or further generations. The first years of the project have been, consequently, passed to understand what was possible to cross and with what specie or lines. Once Nobbio obtained several hybrids, he had to re-introduce and stabilize the main commercial features. He worked hard to push the biennial to yearly flowering and introduce the winter-blooming not present in most of the wild species, but



Mei Ling Obtained in 1976 Nobbio® Burgundy Obtained in 2002 Nobbio® new generation Obtained in 2012

colors, colors, and colors was the main worry. For years most of the obtained flowers were fully violet, purple, and lilac.

During the work, Nobbio came several times to an impasse, with no possibility to continue the cross of one hybrid line with another because of sterility barriers. He solved the problem by introducing a new specie fertile with both.

Among the years Nobbio adjusted plant growth, productivity, stem thickness, number of petals, flower size, flower pattern until he obtained a new type, which he named "chinese" because of the *Dianthus chinensis* widely involved in the breeding.

In 1976 he introduced the first variety "Mei Ling" with small flower, deep violet with white edge, high productivity, and stems about 60 cm long. In same type later came "Mei Fu", "Mei Cheng" and other varieties. Unfortunately, the new type, commercialized mainly in Italy, didn't encounter the expected interest.

Strongly convinced of the value of the line he decided to continue the breeding, targeting a carnation similar to a standard type but with a wider color range and better productivity. The first variety, still a bit small but almost completely changed from the "Chineses", came out in his seedlings in 2002 after 53 years from the beginning.

A normal process of variety testing and introduction takes about 4 years, and he was just getting the first positive appreciations for his work when suddenly in January 2005, Nobbio passed away at the age of 81 years.

What's next.

All his work was not lost. His handwritten notes, methods, carnation lines, jokes, stories, and good mood continue to live in our breeding programs, and according to his teaching, we continue to try getting out new colors for consumers and innovative varieties for growers. To remember him and sure that he still can appreciate the beauty of his flowers, we entitled the new carnation line with his name.

Dr. Flavio Sapia is Breeder at Hybrida S.r.l.
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By Dr. Yoseph Shoub

High Quality Stems Pay Back

The importance of the gerbera stem quality should concern us - breeders, growers, flower shops, and clients - as producing, selling, and enjoying high quality gerberas is our mutual interest. In our flower industry the stem qualities (length, strength, geotropic reactions, longevity, color of leaves, etc.) are equivalent to or have a commercial importance to the flower itself. If these factors are generally important, with gerbera it is even more critical. The flower-stem of the gerbera has no structural support, therefore it needs distinct care.

The common name for the products that we produce and sell is Flowers. But in fact, we sell cut stems - a sequence of nodes and internodes - carrying leaves and flowers. The stem nodes are very important locations; they are the sites on the stem where primary hormonal processes, as flowering-induction and cell-differentiation occur. They are the sites where leaves, buds, side-branches, flowers, and fruits are initiated. The stem nodes, like crossroads, act also as a structural support for the plant itself (Figure 1).

In the case of the gerbera, and few other cut flowers (some bulbous and corm plants), we harvest and sell only one internode (the scape).

A Gerbera branch is built of five nodes and five internodes (Figure 2). The lower four rigid internodes developed at the soil level are carrying 4 leaves (rosette), and they are very short (3 to 5 mm long in total). The uppermost internode is the "flower stem" that we cut and sell; it is very long (400

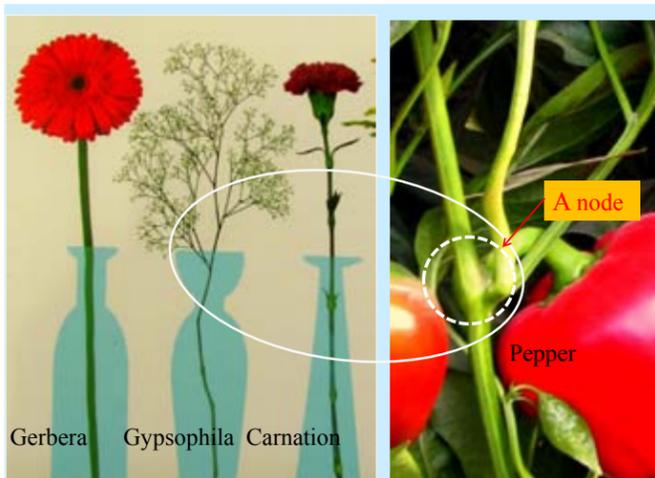


Figure 1. In most of the plants the stem-nodes serve as structural support. The flower-stem of the gerbera does not have such support.

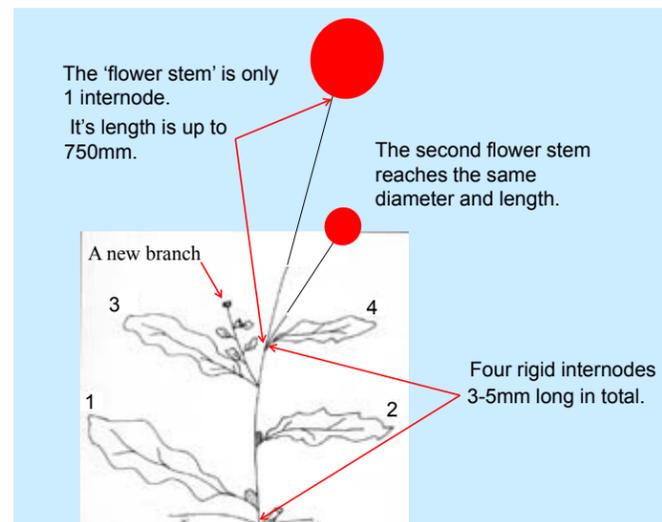


Figure 2. Sketch of a gerbera branch.

- 750 mm), it develops upwards among the leaves, and it carries on its top the composed flower-head (the inflorescence). It has no leaves on it and does not have any kind of structural support (beside the lignified vascular system that conducts water and minerals), so therefore it needs distinct care. During all the time of the stem growth, it is always the upper flexible section of the stem that continues to elongate. In the case of the gerbera, the length of the flexible section is about 10 -15 cm long, below the flower-head (Figure 3).

This upper section remains flexible and soft, while the lower parts of the stem are gradually lignified and become rigid (Figure 4). If the upper flexible soft section of the gerbera stem is not strong enough to carry the heavy inflorescence, it might cause the bent-stems-performance. Note, that depending on the variety, the weight of the inflorescence at harvest time is 15 to 35 grams, while the inflorescence of the original species - *Gerbera jamesonii* - is only 2.5 to 7 grams. Furthermore, under greenhouse conditions the elongation rhythm is very fast, a fact that makes some difficulties for the grower to identify the exact maturation stage of the stem regarding its proper harvesting time. Thus, it is our goal to select gerbera varieties that produce flower stems that grow in upright position under summer conditions, as well as under winter conditions, flower stems which at harvest time will have already reached their final length and strength that make them able to carry the heavy inflorescence without risk of bending. These kinds of stems also have the qualities that ensure their longevity throughout the long journey from the greenhouse to the vase of the customer.

How the stem quality affects our business - some points for our attention:

- It is important to realize that the energy reservoir in the gerbera stem (the sugars that are needed for the growth) is very limited, as it has no leaves and its structure is built of vascular vessels. These facts mean that young premature stems and premature inflorescences are not able, after they have been cut, to

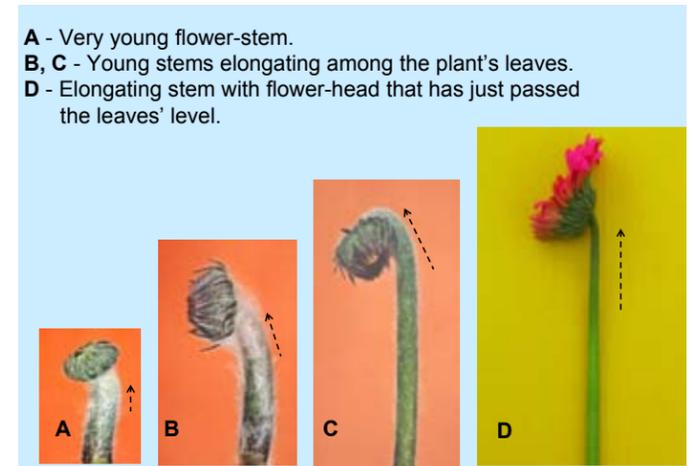


Figure 3. Elongation phases of the gerbera stem (flexible zone ----->)

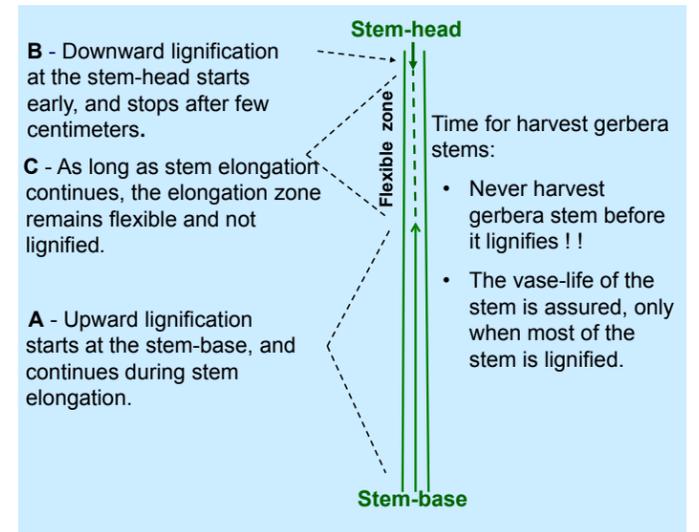


Figure 4. Lignification phases of the gerbera stem.

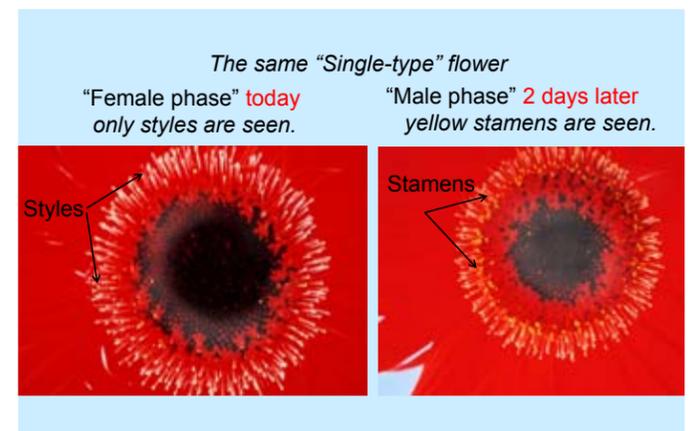


Figure 5. Practical indications for harvesting gerbera flower stem: when 2 circles of male flowers show their stamens.

continue to grow and to complete their maturation phases. It means also that a premature stem is not able to carry the heavy inflorescence. This is exactly what distinguishes gerbera from many other cut flowers that can be picked in their flower-bud stages. Therefore, we guide our gerbera growers that the right time for harvesting mature stems is: when two rings of male-flowers show their stamens (Figure 5). This practical instruction for harvesting gerbera flowers arises from the fact that there is a correlation of timing between the "Male phase" and the final stem maturity phase.

- The gerbera is a negative geotropic plant. Its stem growth pattern reacts to changes that occur in its upright growing direction: If the stem growth is not interrupted, it will grow continuously in upright position (Figure 6 A). A change in the upright position of the premature stem for a certain time is inducing and causing the negative geotropic growth phenomena. Shifting aside the stem from its upright position, while harvesting and packing, for example, toward horizontal or semi-horizontal positions, causes a growth reaction that turns the stems to upward position. Therefore, premature gerbera flower stems that are packed and shipped generally in horizontal position react later when being unpacked and placed in the vase, as expressed by an active upward growth that looks in the vase like sideward growth (Figure 6 B). A second active S-shape curve-growth reaction happens after a few days in the vase (Figure 6 C). Mature rigid stems that finish their elongation phases are not affected the same way, as the geotropic sensitivity phase of the stem is already over.

- Mature strong stems are able to absorb without difficulties the amount of water needed for renewing the turgor they have lost during the long shipment. On the contrary, stems that have been cut too early, before reaching their final lignification phase, have difficulties absorbing and transporting water after long shipment, and this fact shortens their vase life.

Epilogue

We can honestly declare: We are trying hard to select gerbera varieties characterized by their flower quality, high productivity, long vase life, and stems endowed with strength and length. Our gerberas are long-lasting varieties in our catalogues, because of their positive horticultural qualities, resistance to Botrytis and Mildew, and having a reasonable number of leaves and well-established root system. In addition, our varieties are doing well in Subtropical and Mediterranean climates, and they are not as sensitive to low temperatures at night. All these qualities create the positive commercial feedback from our growers.

For more information visit www.gerberaisrael.com

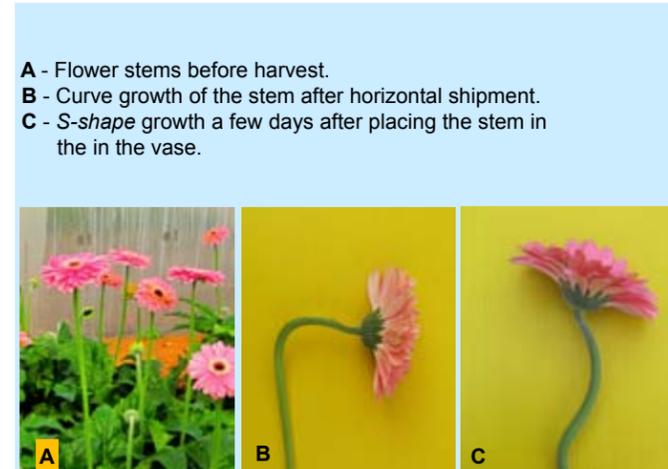


Figure 6: Negative geotropic reaction of Bolivar flower stem.

Dr. Yoseph Shoub is an agronomist and a gerbera breeder. You can reach him at gerbera1@zahav.net.il



**2013:
Year of Gerbera!**

From National Garden Bureau:

Every year, National Garden Bureau names one edible, one annual and one perennial as the featured crops for that year, and 2013 is the Year of the Gerbera. NGB, along with its members, provide these tips about a flower beloved by many: Gerbera is an extensive genus and a member of the sunflower family (Asteraceae). There are approximately 30 species in the wild, extending to South America, Africa, and tropical Asia. The meanings of Gerbera flowers come from those attributed to the general daisy family. These meanings include beauty, innocence and purity. In addition, Gerberas hold an added meaning of cheerfulness, which stems from the assortment of colors available. Many consumers have their first encounter with Gerbera as cut flowers since Gerbera is the fifth most-used cut flower in the world (after rose, carnation, chrysanthemum, and tulip). Gerberas as cut flowers offer a rich color palette and beautiful flower forms from single to semi-double.

To learn more visit www.ngb.org

National Garden Bureau is an U.S. non-profit organization promoting gardening on behalf of the horticulture industry. Their purpose is to educate, to inspire and motivate people to increase their use of plants in homes, gardens and workplaces by being the marketing arm of the gardening industry.

