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MARCH - APRIL 2019

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**Economic growth,
but not all is rosy**

BUSINESS AND BLOOMS

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KEEN ON GREEN

Sustainability is a complex concept, difficult to define, difficult to quantify. Among the many issues at stake are energy and water supply, air quality, workers' health and social equity and all within the context of a global industry consisting of a vast variety of producers.

The most frequently used definition of sustainability comes from the UN World Commission on Environment and Development: 'Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.'

What we learnt from the Federal Association of Horticulture (ZVG) chairman Jürgen Mertz, speaking at the grand opening of this year's IPM ESSEN (page 46) is that 46% of German consumers define sustainability as 'local'. Whether 'local' is more sustainable than 'global' can be difficult to determine as the environmental benefits of buying local can vary. Turn to page 7 where German tree grower Jan Dieter Bruns gives his opinion on the local controversy.

But is green really so important to the German consumer? Does he or she actively seek more sustainable products and what percentage of sustainable goods are they purchasing in reality? We all know that at the consumer level there's a gap between attitude and actual purchasing behaviour. Equally, a gap exists between leading edge horticultural (supply) companies and the majority of small to medium sized (production) businesses, when it comes to pushing the sustainability envelope. Margins in ornamentals production are extremely tight which causes horticultural entrepreneurs to cling to their 'environment and social are cost' conviction.

However, Jeroen Oudheusden, Chief Executive of the Floriculture Sustainability Initiative (FSI) advocates that spending on sustainability, such as renewable energy sources, can definitely yield cost savings. Using effective sustainability marketing may even allow businesses to sell at a higher price. "Additionally, the profits gleaned from sustainable efforts can translate into economic growth in the world's flower growing regions and improve peoples' livelihoods", he says. Turn to page 32 to read more on this view.

FCI looks at the practices of some of the businesses making an impact in sustainability, from gas-free or geothermal greenhouses to responsibly produced peat and biopesticides. As AIPH's Tim Briercliffe states, in this issue's special sustainability section, "We'll make quicker progress if we share knowledge and work together."

Ron van der Ploeg



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FloraCulture International is an independent trade magazine with the largest circulation for a world publication of its kind. FloraCulture International is published for the ornamental horticulture industry by the International Association of Horticultural Producers (AIPH). It's published six times per year worldwide. **Editorial Team:** Tim Briercliffe, Alicja Cecot, Arturo Croci, Jan Dieter Bruns, Spence Gunn, Hidde Koenraad, Richard Melnick, Ron van der Ploeg, Kim van Rijssen, Fred van Tol, Penelope Tomkins, Louise Wrainwright **Contact:** info@floracultureinternational.com. **Address:** FloraCulture International, Horticulture House, Chilton, Didcot, Oxfordshire OX11 0RN, United Kingdom. **Worldwide Advertising Office:** Angie Duffree, angie@floracultureinternational.com tel. 0031 (0)6 403 277 35 **Printer:** Drukkerij van Deventer **Graphic design:** Aryen Bouwmeester. **Circulation Administration:** FBW Abonneservice, Postbus 612, 3440 AP Woerden, The Netherlands. **Subscribe:** Sign up now for a free digital subscription www.floracultureinternational.com/ / subscribe **Publisher:** Published by AIPH ©2019 FloraCulture International magazine. All rights reserved. Publisher is not liable for the content of the advertisements. Photography by permission of copyright owners.

FRANCE



2018 was a tough year for the French garden industry

FNMJ (Fédération Nationale des Métiers de la Jardinierie), representing the leading garden centres in France, reported that the country's 2018 overall garden centre sales were down 1.5% down, wiping out the 1.6% growth of the previous year.

France's garden centres suffered after the country's adverse weather conditions in early spring. The industry body reported a decline in sales of 23% in March due to torrential rain. Sales figures were up in May (+12%) and June (+1.5%) but not sufficient to restore the losses incurred in spring. French garden retailers were treated to an Indian summer running into September and October which disappointingly enough, didn't provide relief as sales dropped 2% in October.

On top of the challenging weather conditions came the *Gilets Jaunes*, the yellow vest protest that send shockwaves through the French economy as a whole, contributing to a 7.8% drop in turnover in the garden market. Sales margins improved modestly in December (+2.4%), a growth spurred on by improved sales of nursery stock products (+7.3%). However, Christmas sales dropped 3%, dampening the growth achieved earlier.

Despite a challenging 2018 FNMJ is quick to add that it is delighted that 'bringing the outside in', has become fashionable, as shown by the resurgence of houseplant sales - up 6.8%.

FNMJ is the sector's industry body, defending the interests of over 1200 garden centres in France. The French garden market is worth nearly €3 billion, with 23% of sales generated by plant sales. The sector provides work to 21,000 employees.

ISRAEL/UNITED STATES

Danziger and Terra Nova Nurseries ink partnership deal

Danziger have announced a new partnership with Terra Nova Nurseries, making Danziger the dedicated licensee holder and producer of Terra Nova's vegetative cuttings from stock in Europe, Asia and Africa. Danziger will produce unrooted cuttings (URCs) to fulfil orders in Europe, Asia and Africa.

Both Danziger and Terra Nova Nurseries are specialist breeders of annuals and perennials. "We see this strategic collaboration as a growth opportunity for everyone involved," says Ken Brown, Managing Owner of Terra Nova Nurseries.

"We have set creative collaborations as one of our core values, this partnership is a good example and another step in fulfilling our mission of creating extraordinary success for our customers" says Ori Danziger, Deputy CEO at Danziger. He adds, "We

UNITED STATES

Dracaena 'White Aspen' chosen Best New Plant at TPIE

A multitude of new plants are presented every year at the Tropical Plant Industry Exhibition (TPIE) in Fort Lauderdale, Florida. This year *Dracaena* 'White Aspen' from Costa Farms was crowned best new plant.

White Aspen is a fresh new variety of corn plant (*Dracaena*) that sports green leaves boldly edged in creamy white. "Its eye-catching leaves are ideal for brightening boring corners in the home or office," says Mike Rimland, Plant Hunter at Costa Farms. "White Aspen' is a really cool makeover of a tried-and-true favorite houseplant." An easy-care, long-lived indoor plant, 'White Aspen' thrives in medium to bright, indirect light. This makes it ideal for adding texture and a touch of life to a wide variety of indoor settings. Slow-growing, it can eventually reach 5 feet (1.5 meters) tall or more. It grows well in both natural and artificial light. "The striking white

variegation stands out in a room, especially when paired with other plants. This also makes it especially trendy on social media," says Rimland. *Dracaena* 'White Aspen' is expected to begin shipping to retailers across the US and Canada in autumn 2020. Costa Farms is the largest producer of ornamental plants in the world. The company stretches over 4,500 acres and employs 5,000 people. Along with thriving indoor and bedding plant divisions, Costa Farms operates retail merchandising and young-plant production divisions as part of its infrastructure, with operations domestically in Florida and North and South Carolina, and abroad in the Dominican Republic and Far East.



ARGENTINA



Peony Festival unfolds its petals

Argentina's second Peony Festival took place in Trevelin (Chubut) on December 16, 2018 to celebrate and publicise the beauty, variety and quality of Argentinian-grown peonies. The event was organised by peony grower Patagonia Flower in collaboration with the travel agency Meraki Sur and hosted at the luxury spa resort Estancia La Paz.

The Peony Festival provided an entertaining peony experience and a perfect opportunity to gain insight into the majestic cut flower. The core event consisted of a peony flower carpet competition among representatives of art schools, flower shops and event planning companies. Groups of three, from each competing organisation, vied for the highest scores using peonies freshly picked from the surrounding fields the day before. Over 30,000 peony flowers were used in the competition which created sumptuous peony arrangements throughout the resort's buildings and gardens. Argentina's Peony Festival is the brainchild of Martín Sasaki, a floriculture technician and peony crop manager at Patagonia Flower Group, who looks back on the event with satisfaction, "We were well prepared for the festival and it ran very successfully. We will definitely

continue this new tradition." The Patagonia Flower Group was founded in 2002 by florists Roberto Giudici, Susana Taira, Erick Millenaar and Marcelo Sasaki, as a response to the economic crisis which plagued the country at the time. The entrepreneurs were keen to start a peony export business but knew that commercialising the flower would be difficult due to logistical challenges. Martín Sasaki (Marcelo's son) said they decided to enter the peony market because the attractive and romantic flower thrives perfectly in Patagonian fields and can also yield a good price. The Patagonia Flower Group grows peonies in an area of over three hectares and the vast majority are harvested for domestic sale. The company is currently seeking new international market opportunities and, in December 2018, shipped its first batch of flowers to Holambra, Brazil.

NETHERLANDS

Anthura wins highest accolade in Dutch horticulture

Chairman Michiel van Ginkel presented Anthurium and Phalaenopsis breeder and propagator Anthura from Bleiswijk with the 2019 Dutch Horticultural Entrepreneur Award on Wednesday January 9th at a reception for the New Year at Keukenhof in Lisse, the Netherlands.

Now in its 33rd year, the award recognises progressive growers who embrace technology and modern, sustainable production

practices, market innovatively, deliver strong customer service and demonstrate industry leadership.



SUSTAINABILITY HAS BECOME NATURAL TO ME

Fourth generation Jan-Dieter Bruns is CEO of one of Germany's leading plant nurseries Bruns Pflanzen.

Sustainability is now a major concern in society, prompting customers to question nurseries about the sustainability of their products. Yet the products cultivated in nurseries are, by nature, among the most sustainable and long-living products.

Nurseries focus on quality, which means that the plants fulfil all the functions they are supposed to, whether in terms of the environment or aesthetics. These specifications, required by the customer, consequently set certain standards in production such as integrated plant protection. Here we have the help of technology which has a targeted impact on plants or harmful organisms so that the customer receives healthy plant material. These measures are accompanied by mechanical agricultural activities. In addition to this, environmental antagonists are also used in the nursery. Sustainability also means selling the right plant to the customer. Our broad plant knowledge is a guarantee that customers will get the trees they really need.

Of course, we are constantly confronted with the question of the local origin of plants. For us, sustainability means being able to see the overall context of product cycles. The cultivation of plants at the ideal location, within an appropriate period of time, with the most efficient use of resources of a large-scale operation, often outweighs the supposed advantages of production close to the point of use. Also, logistics processes today are so optimised that the ecological footprint of transport over a medium distance can be lower than, for example, through small-scale production. We, as nurserymen, know very well that customers are exposed to a variety of sustainability promises which are often unverified. It is no secret that some supposedly locally produced plants have their origins in other regions of Germany or Europe, and that is when certification is useful.

Nurserymen are intrinsically connected with nature and concerned about its well-being. Nature is both our profession and our passion. Sustainability is one of the basic tools of every nurseryman. And, I must say, I feel this matter has now become natural to me.

'Let's make the change that future generations would want us to make'

Edward Verbakel, winner of the 2013 Westland Inspiration Award, is CEO of VB Group, a forward-thinking engineering company specialising in revolutionary turnkey and geothermal greenhouse projects. Sustainability is embedded in the company ethos.

AUTHOR: RON VAN DER PLOEG PHOTOS: BIANCA FENNE

What are the key elements of VB's sustainability strategy?

"We focus on climate. Our engineering teams determine the ideal circumstances for plants in controlled agricultural environments. If the outside climate is not ideal for growing vegetables or flowering plants, our solutions ensure that people can eat safe, healthy food and enjoy fresh flowers year-round. Drivers are climate change, food safety, local-for-local and a growing world population."

What are the primary goals of your sustainability strategy?

"To contribute to sustainability by helping our clients use less natural resources and to be a long-term partner with them and our suppliers. Long-term is also sustainable! Next to that we aim to be an attractive employer and profitable for the benefit of the company's future." How can VB create sustainable growth solutions? "The Dutch horticultural sector is still a leading industry in the world. Its energy and water footprints are substantially better than that which export markets offer. We believe that climate change will continue to lead to a transformation from open-field crops to covered crops. Not all will, or can, use the high-end solutions we provide but there definitely is a world to win."

What are the barriers to making a difference in sustainability?

"Not too long ago, our industry was in the midst of an economic crisis which led to a reduction in R&D. Despite that, we invested heavily in deep geothermal well connections. Now, we are facing high demand and the resources we are missing are human capital and time.

We need room to grow and our new home should allow us to do so."

What horticultural project you are most proud of?

"I am very grateful for all of those who have selected us as their project partner. Our strategy is to join those who have the vision to become a long-term sustainable player in the horticultural market. We have already realised 14 deep geothermal well connections to greenhouses out of the 18 initiatives that are currently in operation. Together they represent more than 3 Petajoules of energy-saving on an annual basis."

What is the value for VB Group of displaying its sustainable growth solutions at the forthcoming Greentech show?

"The main value is in promoting our company and indirectly our industry. Trade shows like Greentech attract huge crowds to which we can present contemporary solutions in horticulture. Greentech is also an annual reunion during which we catch up with our international friends for whom we have worked before."

In the Netherlands approximately 9,000 ha is dedicated to greenhouse production of fruits, vegetables, potted plants and flowers and starter plants. At the turn of the century the area of greenhouse production was around 10,500 ha. VB is a proud citizen of the Westland region, greenhouse capital of the Netherlands which is home to around 25% of the country's greenhouses. Is there still enough critical mass?

"This is a chicken and egg situation. The critical mass is there but it consists of too many individuals. Dutch growers have to be either unique or focus on economies of scale. Coalition HOT is trying to reorganise the



VB GROUP QUICK FACTS

The two brothers Joop and Aad Verbakel started glasshouse heating firm J & A Verbakel Verwarming in De Lier, Netherlands in April 1966. Initially they designed and manufactured customised heating solutions for Dutch greenhouse growers but quickly expanded their business into Belgium, Germany and France. The early 1970s marked the start of their first heating project on Long Island near New York. By merging with Bomkas Greenhouses in 1983 the Verbakels broadened their product range. The combined forces of Verbakel/Bomkas proved fruitful in markets in Saudi Arabia, China, India and, later, the fall of the Iron Curtain opened the door to Eastern and Central Europe.

Under pressure of the economic setback in 1992, Verbakel/Bomkas stopped producing the majority of their own components and decided to outsource certain parts. To date, the family business provides a total solution for its clients; always working to bring innovation and advancements in both design and technology. The people of VB Group remain strongly attached to the horticultural business but at the same time have never shied away from more unconventional projects. As such they earned a reputation for being one of the first Dutch companies to install an undersoil heating system for Dutch football club PSV Eindhoven in 1996, marking the first steps into the energy and

utilities market.

A year later, Aad's son, Edward, joined the business primarily to focus on foreign markets. When Joop Verbakel retired in 2005 the company was entering a period of growth and maturity. The opening of the new VB headquarters at the Jogchem van der Houtweg in De Lier coincided with the company's 40th anniversary and marked another milestone. Fuelled by strong demand abroad Verbakel Bomkas changed its name in 2012 to VB Group. On April 6, 2016, departing CEO and co-founder Aad Verbakel was made a Knight in the Order of Orange Nassau. 2020 will see the completion of VB's new offices and a purpose built fabrication warehouse.



Westland greenhouse layout where possible but there is still a long way to go. Westland is also working on a large district heating network that could connect all the existing and future deep geothermal initiatives and this will then become a large energy web to which most greenhouses can be connected. In order to justify this giant energy infrastructure Westland is in need of profitable greenhouse growers. The question is whether the Westland Energy Web will allow for the required level of profitability? Time will tell!"

Growers are becoming increasingly involved in measuring their carbon footprint? Should they include their greenhouse structure when measuring their carbon emissions? If so, what is the carbon footprint of a glasshouse?

"Let us first compare glass and poly (plastic) greenhouses. Out of the total covered agricultural area worldwide, less than 10% consists of glass. More than 90% of plastic covered greenhouses renew their roofing every so many years. Imagine the reduction of the waste stream of all that plastic if it was replaced with glass greenhouses. We, as an industry, are also obliged to improve our production process with the aim to becoming more sustainable."

Aluminium, steel and glass take a remarkable amount of energy to produce for the construction of a greenhouse which has an average life span of 10-15 years...?

"Reference is made to a 10 to 15 year economic life span. However, the technical life span is much longer. Much

Edward Verbakel:
"The Dutch greenhouse construction industry was 'circular' long before the term was invented."

of the Dutch greenhouses find a second owner and are rehomed around the world. Often, a second-hand greenhouse, originating from Holland provides better growing conditions than structures which are available locally. The Dutch greenhouse construction industry was 'circular' long before the term was invented."

Dutch industrial companies have a key role to play in repositioning the Netherlands to thrive in a low-carbon future. Many variations of the semi-closed greenhouse and even a Greenhouse Without Gas have been built, all using renewable energy sources. Is energy transition in Dutch greenhouse production a mission possible or impossible?

"Successful or unsuccessful, all initiatives have gathered an enormous set of data and information allowing us to further improve current technologies. We believe semi-closed systems allow better benefits from natural ventilation than closed ones. It's a mission in progress."

VB Group is an expert in the use of geothermal heat. What is the minimal requirement for a solid business case in terms of geothermally heated greenhouses?

"When joining forces forward-thinking entrepreneurs can create a critical mass to share the profits and risks associated with deep geothermal heat sources. It all boils down to a well thought-out business plan and a realistic feasibility study. To increase the feasibility the Dutch government provides additional grants and guarantees."

There's an alternative energy source for greenhouse production: hydrogen (H₂) fuel. Do you believe this is the missing link in energy transition?

"It could very well be! Or some alternative source that is not yet discovered. For VB this is too broad a subject and too capital intensive to develop by ourselves. Since last year, we have been in contact with Royal Dutch Shell and we hope to be able to collaborate more with them to explore sustainable solutions together."

In terms of energy transition what do you think is the most sustainable growth solution that deserves more attention?

"LED grow light solutions. There is still so much to learn about what this PMC has to offer. Our clients that are using LEDs are becoming increasingly enthusiastic."

How do you prioritise sustainability in your personal life?

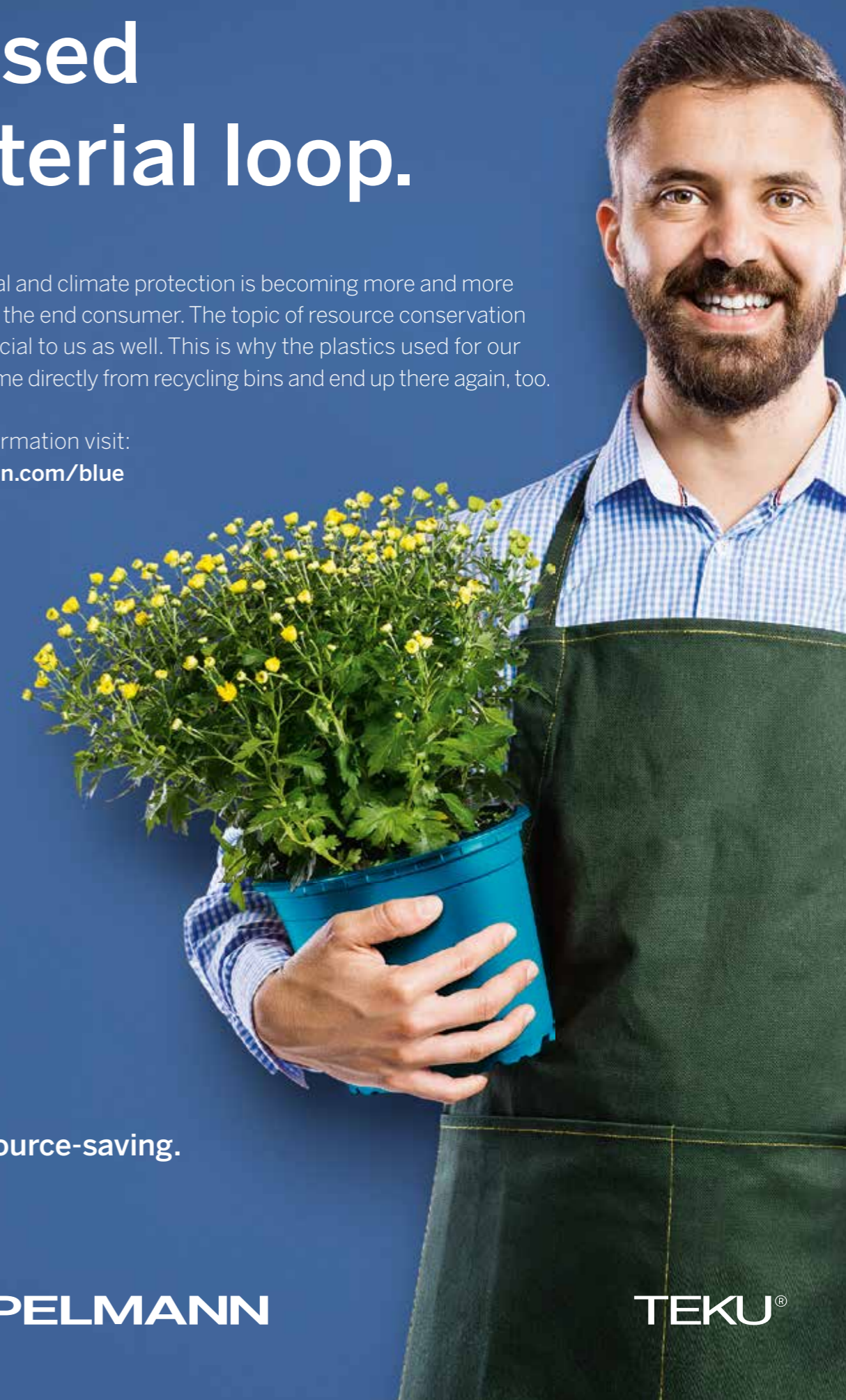
"My wife and I have two beautiful daughters who are still too young to realise what the current climate change will mean for their future. I am afraid that our children will pay the bill for our misbehaviour. Whilst we all have a role to play in making a positive change for future generations we should focus on the industrial sectors and countries that can make the biggest difference and make them aware of the importance of their role. Let's make the changes that future generations would want us to make..."

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Poland is one of the few European countries which has seen continuous economic growth over the past 26 years. After the fall of communism in 1989, the country quickly westernised and transformed its economy to capitalism. Present-day Poland still looks promising among emerging European markets, though it faces particular challenges that make it difficult for its ornamental horticulture industry to sustain economic growth. These challenges include rising energy costs, a recruitment shortage and waning interest in ornamentals among the younger generation (specifically in cut flowers).

Poland has stood out due to its economic success with its marketplace seeing the strongest increase in the gross domestic product (GDP), beginning in 1992. A survey of the European Bank for Reconstruction and Development (EBRD) and Eurostat reveals that Polish GDP doubled between 1989 and 2002, outpacing its Central and Eastern European neighbours that also joined the European Union in 2004.

ECONOMY FIRST!

The most important reforms of Central Europe's largest country took place between 2004 and 2008 with improvements in the field of infrastructure and agriculture. Poland is Europe's biggest net beneficiary of European funds with farmers and growers owning a minimum of 1 ha of land, clearly taking advantage of more disposable income and better market opportunities.

Throughout the global financial crisis from 2007 to 2011, a four-year period when the EU-27 economy decreased by 1.5%, Polish GDP increased by 12.4%. The post-financial crisis period was even more prosperous for Poland with rising demand for consumer goods (including ornamental plants) and a surge in trade that boosted the country's growth.

In 2018, the GDP increased by 4.3% in comparison to the previous year. Recent forecasts reveal that the country's economy is to grow by 3.6% in 2019.

But not all is rosy. Poland is dependent on coal for electric power as well as heating and energy bills are expected to rise systematically.

Moreover, a recruitment shortage and the subsequent increasing costs of labour are the fundamental problem of the Polish economy. This applies particularly to industries such as agriculture and horticulture. Many Polish growers keep their business afloat thanks to seasonal workers from Ukraine (and Belarus).

ORNAMENTALS

The ornamental horticulture industry plays a minor role in Polish horticulture and is, of course, even less significant in the country's broader agricultural perspective. In terms of Polish horticulture, Poland is well-known for its production of apples, sour cherries, blueberries, raspberries and strawberries.

As for protected cropping, fresh cut flowers and ornamental plants lag far behind vegetables (5650 ha in 2018), with tomatoes being the country's number one crop (2160 ha in 2018).

In the first decade of the 21st century, greenhouse production area dedicated to ornamentals grew by an average of 4.2% per year and the production value by 9.8% (the fastest growth in the European Union), though it constituted only 0.7% of the EU's total value.*

From 2013, the sector displayed a moderate and stable course of growth in terms of cropping areas in ornamentals.

CUT FLOWERS VERSUS POTTED PLANTS

According to Dr. Adam Marosz of the Institute of Horticulture in Skierniewice (whose latest figures, based on his research and questionnaires, are published in AIPH's International Statistics Flowers and Plants 2017), the area of protected floricultural production was 1615 ha in 2016. It comprised 828 ha of potted plant production including bedding plants (in terms of protected cropping). In potted plants, there is a clear trend towards developing economically-sound production. The area dedicated to field production of flowers and bulb farming was 3845 ha.

Poland's ornamental industry stands out for its small-scale character. Apart from big, impressive, state-of-the-art developments – like JMP Flowers in Stężyca, which comprises over 18 ha of cut roses, Anthurium, as well as ultramodern potted Phalaenopsis production (with automatic WPS logistic system) – there are thousands of small-scale, traditional family businesses scattered across the country.

Roses are still the number one greenhouse crop among cut flowers (185 ha in 2016). Truth be told, there are only a few growers who continue the intensive, energy-consuming, year-round production, which requires assimilation lighting for at least six months. Nowadays, the majority of Polish growers harvest cut roses from mid-February or the beginning of March

* Source:
Warsaw's
University of
Life Science
(SGGW)
Professor
Lilianna
Jabłońska.

POLAND QUICK FACTS

Population: 38.3 million
Area: 312,685 km²
Capital city: Warsaw (Warszawa) – 1.8 million inhabitants
Other important cities: Łódź (776000), Kraków (758000), Wrocław (637000), Poznań (573000) and Gdańsk (460000)

Name Day: in addition to birthdays, Poles celebrate their name day or imieniny, which is the day commemorating the Saint they are named after.
Currency: złoty
Major religion: Christianity



Agata and Klaudiusz Kordylasińscy grow roses, force tulips and run a small-scale floral wholesale business.

until late autumn at which time plants are kept dormant to avoid huge energy bills. However, profitability of such seasonal rose production has become a real challenge due to the stable prices of cut roses.

A typical Polish rose grower will produce 20 to 30 varieties to meet varying demand from the domestic market. Meanwhile, homegrown flowers need to live up to high-quality standards as the competition from cheap roses from Africa, imported year round through the Netherlands, is fierce.

Staying cost competitive is a constant fight with Polish horticulturists seeing their variable operating costs rise more quickly than those of African producers. What could already have been observed is that by 2010 the prices of imported roses (including shipping costs) were on average only 5% higher* than those provided by Polish growers, who struggle not only with high energy costs but with growing labour costs as well.

TULIPS FROM POLAND

Forced cut tulips occupy a special place in Polish ornamental horticulture as this is likely the only crop amongst cut flowers in which production has been systematically increasing. Flowers are mainly grown in a conventional way using peat substrates, the perfect soil for heavy, large blooms.

This makes them stand out from their Dutch counterparts which are mostly grown hydroponically, resulting in somewhat shorter stems and smaller blooms. However, more recently, an increasing number of Polish growers are gradually switching to forcing tulips in water, which saves labour and time.

A traditional Polish cut tulip grower would plant lilies after tulips to fill in the gap that would otherwise exist in the year-round production scheme for protected growing of bulb plants (although there exist modern farms that force tulips only, but more intensively). White Oriental lily hybrids, such as 'Santander', prevail in Polish nurseries. Generally speaking, lilies are



The production of Chrysanthemum cuttings is a vital part of the country's flower industry. Pictured are Chrysanthemum growers and husband and wife team Adrianna and Jan Klak.

perceived as church and cemetery flowers and require better promotion. Several years ago, Anthurium was one of the top ornamental crops in Poland, which was the third (or even the second-largest) Anthurium producer in the European Union – after the Netherlands and Italy – in terms of production area. An estimated 40 million stems were grown annually in Poland 12-13 years ago and the Club of Anthurium Growers, who met regularly to enrich their knowledge and exchange ideas, largely contributed to the success of the Polish Anthurium industry. Currently, Anthurium, though still produced, does not play an important role in domestic ornamental horticulture and the Club has ceased to exist.

Other important cut flowers grown in Poland are Gerbera, carnation and Chrysanthemum but their production volumes have decreased significantly compared to the 1980s and 1990s. On the other hand, the production of Lisianthus has increased as the demand for domestically-grown cut Lisianthus, which differs from mass-produced imported Lisianthus, keeps growing. Bouquet fillers such as Asparagus and Gypsophila deserve mention as well. Generally speaking, the product offerings of Polish growers is pretty wide but many crops are only seasonal and available in limited quantity.

SEASONAL POTTED PLANT PRODUCTION

With regards to potted plant production, seasonal crops dominate. Such a cropping system enables using the production area most efficiently, to lower energy costs and match the peaks of unstable market demand. The typical year-round cycle starts with pansies, planted in autumn and overwintered (in greenhouses but also outside, protected by horticultural fleece in case of snowless weather with heavy frost) as well as pot Primula, which is usually sold from the third week of January. The next and most important are bedding

and balcony plants, traded in April and May and often followed by perennials (the new generation cultivars that don't need vernalisation and bloom in the first year of production). Pot mums and heathers are next, followed by Poinsettias – the number one floricultural commodity at Christmas time.

BEDDING AND PATIO PLANTS ARE BOOMING

From 1989 on, bedding and patio plants have become the new hallmark of Poland's flower industry, grown by a wide variety of businesses, from small-scale family holdings with obsolete infrastructure, equipment and technology, to the modern, mechanised operations that are able to offer bulk products and benefit from the advantages of the economy of scale. The latter, who often cooperate with supermarkets on the basis of contract farming (with guaranteed prices, dates of sales and payment), have the potential to grow further and fill in gaps in the marketplace resulting from the predicted closure of smaller farms.

In general, an estimated 10% year-to-year growth has been reported in the sector, which has been constantly developing since the beginning of the 1990s. There have obviously been 'better' and 'worse' years as this branch of ornamental horticulture is particularly spring weather dependent, when the huge quantity of perishable goods has to be sold in a comparatively short period. Growers can look back with satisfaction at the spring of 2018 which was undoubtedly one of the best in decades. Most growers, regardless of the production scale, feature a rich assortment of species and varieties of bedding plants. Nevertheless, Pelargonium is the leader (60-70% of bedding and balcony plants), followed by vegetatively propagated Petunias (mainly Surfina type) and Begonias. Each year, growers look for novelties, including fancy structural plants that are used in mixed arrangements, that are increasingly more popular with consumers. They also supplement the offer with perennials and grasses, which are fashionable – and not only in Poland. Among the early spring perennials such as Saxifraga is the number one crop, while in summer Lavandula remains a big hit. In autumn, perennial grasses conquer the market along with heathers.

QUINTESSENTIALLY POLISH

Potted Chrysanthemums are amongst the cream of the crop in Poland's ornamental horticulture. What is unique in comparison to other countries is that growers schedule 80-90% of their crops to be ready for retail for All Saints' Day – November 1, when Poles flock to graveyards to pay their respects to those who have died. The group of popular pot Chrysanthemums that is used solely to place on graves, comprises disbudded varieties with large flowers. The most important cultivars stem from French breeders – Bernard (Komodo series) and Sauv -Guittet (Bilkis, Passionn ment Jaune). However, the variety of cultivars used for such production varies widely and includes typical (pinched) pot Chrysanthemums, too. In this case, consumers continue to ask for the conventional types; featuring double, especially white or yellow, decorative flowers. Cultivars such as 'Mount Gerlach', 'Willowbrook' and 'Wilmington' are at the top of the pot Chrysanthemum list.

Multiflora, ball-shaped late autumn varieties are also used for pot production and are dedicated to cemetery use as well. Chrysanthemum experts in Poland dub the Jasoda series of the Belgian breeder Gediflora 'unbeatable', but they appreciate novelties such as the Aduro series. There is a growing demand for colour mixes – tri-coloured Multifloras.

CALLUNA OFFERS NEW POSSIBILITIES

Heathers – modern bud bloomer types, like Gardengirls® or Beauty Ladies® – have in recent years been included into the assortment of many Polish nurseries which focus on seasonal pot plant production. For some growers, Calluna makes an interesting alternative to early mums because it is widely used as an inexpensive grave decoration before the first of November and for other occasions. Heathers are usually grown in container fields and sold from late summer throughout autumn.

Rooted cuttings of Calluna are provided by the Polish licensees of the breeders of the pot cultivars – both by nursery stock growers and new era producers, who operate on a larger scale and run highly mechanised young plant farms. The propagation facilities have been developed and modernised as a result of significant progress in the production of Calluna finished plants and the growing demand for pot bud bloomer heathers. However, the domestic production has to compete with import plants grown in large numbers in Germany.

YOUNG PLANTS AND ROOTING STATIONS

In line with the Chrysanthemum's stable ranking in Poland, the production of Chrysanthemum cuttings is a vital part of the country's flower industry, with some of the companies dating back from the early 1980s. Today, the country hosts ten Chrysanthemum cutting farmers in six different regions. Working together with the leading breeders from the Netherlands, Belgium, France and Germany, these companies produce (from the mother stock) and root cuttings in Venlo glasshouses or modern foil greenhouses – erected after 1990 (some of these facilities were built only recently to catch up

The Polskie Kwiaty nursery is run by Beata and Michał Orłowski. Tulips are still mainly grown in a conventional way using peat substrates, the perfect soil for heavy, large blooms.



One of the driving forces behind industry growth is the Polish Nurserymen Association (Związek Szkółkarzy Polskich – ZSzP), which organises the annual Green if Life trade show in Warsaw.

POLISH GROWN NURSERY STOCK: THE SECTOR'S FLAGSHIP PRODUCT

In the international trade, Polish grown hardy nursery stock plays an important role. Shrubs, trees, perennials, climbers and other plants are exported to about 40 countries. Poland is also a considerable importer of the nursery stock from other countries such as the Netherlands, Germany, Belgium and Italy.

Following the introduction of the market economy in Poland in 1999, nursery stock production has been one of the fastest growing sectors of the country's agriculture. Poland's accession to the European Union in 2004 fueled further growth of the industry thanks to EU funding and the easier cross border trade within the community.

The total area of the ornamental nursery stock production in the country is about 7000 ha. In terms of nursery stock production areas Poland ranks 6th in Europe after Italy, Spain, Germany, the Netherlands and France. Family-owned, often second-generation plant nurseries prevail.

The majority of the country lies in climatic zone 6 (some parts – even in more severe zone 5b), therefore, Polish nursery stock is frost resistant enough for Eastern and Northern Europe and thus appreciated by buyers from these regions.

Poland still grows sizeable numbers of conifers to cater for the demand and preferences of customers from (East European and Scandinavian) areas experiencing long winters (dormancy period). However, the assortment of Polish nursery stock products is rich and variable, including mature shrubs, trees, climbers and perennials as well as young plants, grafts and liners.

One of the driving forces behind industry growth is the Polish Nurserymen Association (Związek Szkółkarzy Polskich – ZSzP). Founded in 1991, the organisation is a member of the European Nursery Stock Association (ENA) and represents Poland in the International Association of Horticultural Producers (AIPH). ZSzP is the owner and organiser of the international B2B exhibition Green is Life, held in Warsaw for 26 years. Since 2016 this trade exhibition includes a flower trade show, Flower Expo Poland.

with the growing demand for top quality starting material and to become more competitive in the domestic market).

However, the most significant progress has occurred in the bedding plant sector. After years of importing the vast majority of young plants from Dutch and German 'rooted cutting factories', Poland has established itself as one of the most important European producers of ornamental plug plants.

Major production can be seen in the propagation of Pelargoniums. At present, there are five high-tech nurseries that serve as 'rooting stations' and focus on rooting Pelargonium cuttings shipped from Africa. These plug suppliers partner with breeders, global distributors or organisations such as Selecta one, Syngenta, Volmary, Dümmer Orange and Proven Winners to provide their customers with the deepest and largest assortment. The rooting period starts in the 50th week in Poland and the sales of ready rooted cuttings finishes by the end of April. The rest of the Pelargonium young plants – estimated at 30% – are delivered to Polish growers from Western Europe.

In terms of plug plant production, special mention needs to be made for Plantpol-Zaborze – a company situated in Oświęcim, a member of Proven Winners. This company introduced Surfinias in Poland in 1994 and continues to propagate these successful Petunias as well as other plants, especially PW's assortment. In some cases, they cultivate the mother stock on the spot – species and varieties that grow well in the Polish climate and the ones with unrooted cuttings which are very susceptible to the distant transport conditions (when picked in the southern hemisphere and shipped like Pelargoniums). Another Polish company which enjoys international recognition is Vitroflora, located at Trzęsacz near Bydgoszcz. The company specialises in young plant production and in this context is one of the leading European suppliers of perennials. A good deal of them are propagated in vitro – the tissue culture laboratory at Łochowo is a division of Vitroflora. The company, which sells perennials mainly abroad, has representatives in Western Europe and production facilities in Portugal. There are a few other, smaller-scale producers of young plants who also offer starting materials, for example Begonia xelator.



Głowacki's nursery: from 1989 on, bedding and patio plants have become the new hallmark of Poland's flower industry.

For some Polish growers, Calluna makes an interesting alternative to early mums because it is widely used as an inexpensive grave decoration before the first of November and for other occasions.



As far as in vitro labs are concerned, the number of them has considerably decreased in comparison to the gerbera boom of the 1980s, when about 100 tissue culture laboratories were active in Poland. At present only a few have survived – those which cooperate with foreign partners and produce at least a part of the stock for them and which have updated their assortment (by adding perennials) to adjust to the changing market situation.

CONSOLIDATION

Poland's ornamental horticulture industry tends to consolidate. A number of small nurseries have recently been closing down. The process is gradual and affects mainly companies with no successors. Such a problem arises in all parts of the country. Particularly affected are the obsolete greenhouses erected in the 1980s with aging owners and no children to take over.

On the other hand, there are a number of second-generation companies that continue to expand as well as small-scale nurseries which offer seasonal products, based on the owner's labour that generate most of their income from retail sales on-site. This kind of operation can often be found on the outskirts of towns and lately, due to the Polish boom in the building industry and accelerated urbanisation, they are now often an integral part of cities.

In some cases labour shortages and rising labour costs, which are not compensated by the relatively stable prices of finished plants or cut flowers, prohibits growers from expanding their business.

FLORAL SALES AT THE SUPERMARKET LEVEL

Supermarket sales of plants (bedding and patio plants, potted Primula as well as Chrysanthemums for 1 November and Poinsettia) and flowers have largely contributed to the growth of the industry. Growers appreciate their relationship with discount stores given their reliability and efficient way of working. Featuring a relatively long shelf life, tulips, for example, are in demand by these retail outlets. At the same time, consumers are also likely to purchase their relatively low-priced tulips in department stores which drives impulse sales. Most frequently seen on retail shelves (and not only in supermarkets) is Tulipa 'Strong Gold', a particularly resilient and versatile variety with sturdy stems and boldly coloured yellow petals for the ultimate spring feeling.

Table 1. Dutch exports of flowers, pot and garden plants to core countries and Poland in 2018

Country	2018	%
Germany	€ 1 675 531	27,9%
UK	€ 825 962	13,8%
France	€ 782 384	13,0%
Poland	€ 244 932	4,1%
Total All Countries	€ 6 001 709	

Source: Floridata

Table 2. Dutch exports of cut flowers to core countries and Poland in 2018

Country	2018	%
Germany	€ 1 049 576	28,4%
UK	€ 616 863	16,7%
France	€ 486 586	13,2%
Poland	€ 141 751	3,8%
Total All Countries	€ 3 691 266	

Source: Floridata

Table 3. Dutch exports of pot and garden plants to core countries and Poland in 2018

Country	2018	%
Germany	€ 625 955	27,1%
UK	€ 295 798	12,8%
France	€ 209 099	9,1%
Poland	€ 103 181	4,5%
Total All Countries	€ 2 310 444	

Source: Floridata

IMPORTS

The import of flowers and plants has been on the rise since 1990. There are three reasons for this tendency: the opening of the market after the fall of communism and Poland entering the EU, the growth potential of the Polish market and decreasing domestic production of cut flowers. Most flowers and plants are sourced from the Netherlands (though not all of them are grown there).

In general, Dutch exports of flowers, potted and garden plants to Poland have skyrocketed since Poland entered the EU in 2004 with exports increasing by 25% between 2010 and 2015. Tables 1-4 provide an update of 2018 Dutch exports of ornamentals to Germany, the UK, France and Poland (Floridata).

In the last couple of years Poland has become one of the most important European destinations for flowers and plants exported from the Netherlands.

The 2017 figures of Statista, as well as the 2018 figures of Floridata show that in terms of export value Poland became the 6th country among the top 10 countries which import these goods from the Netherlands (table 4, 5).

The latest figures provided by Wageningen Economic Research (WUR and the Statistical Office in the Netherlands (CBS) prove that currently Poland is the 5th export destination for Dutch cut flowers (Table 6).

Imported roses are mainly sourced from Africa and a lot of them are sold in department stores or supermarket chains.

Table 4. Dutch exports of flowers, pot and garden plants to top ten countries in 2018

Country	2018	df. 2017
Germany	€ 1.675.531	-3,0%
UK	€ 825.962	-1,3%
France	€ 782.384	-0,4%
Italy	€ 303.538	-5,1%
Belgium	€ 254.735	-3,3%
Poland	€ 244.932	+6,4%
Russia	€ 196.710	+18,9%
Switzerland	€ 191.909	+0,5%
Sweden	€ 171.276	-4,1%
Austria	€ 142.890	+3,2%

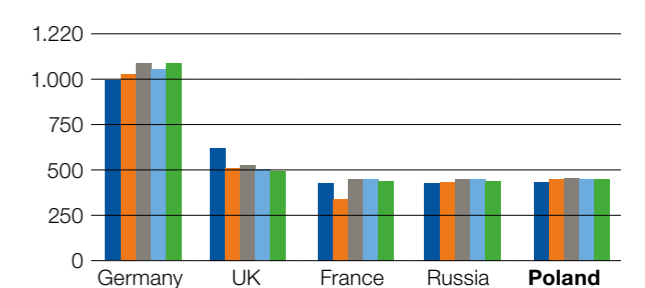
Source: Floridata

Table 5. Poland among the leading destination countries for flowers, plants and nursery stock exported from the Netherlands in 2017, by export value

Country	2017
Germany	€ 2 536 817
UK	€ 1 108 597
France	€ 951 513
Belgium	€ 514 627
Italy	€ 468 024
Poland	€ 347 266
Switzerland	€ 288 007
Sweden	€ 258 340
USA	€ 238 847
Denmark	€ 216 890

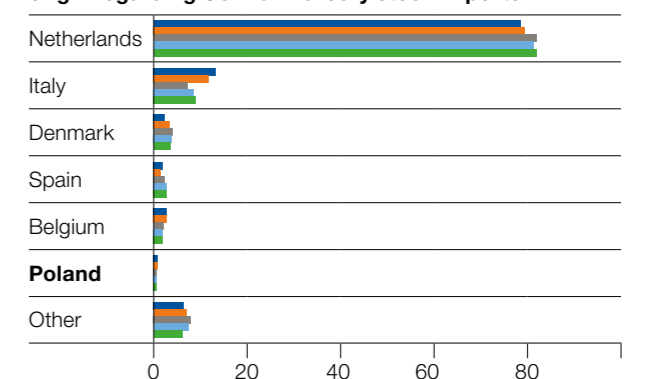
Source: Statista 2018

Table 6. Most important export destinations for Dutch cut flowers



Source: CBS and WUR.

Table 7. Share of the most important countries of origin regarding German nursery stock imports



Source: Connxt/Eurostat, WUR and CBS.



Lavandula cropping at "Ogrodnictwo Zugaj" run by husband and wife team Katarzyna and Mirosław Lubiński.

On the contrary, cut roses produced in Poland are not sold in department stores as contract, year-round fixed prices don't provide domestic growers a profit. Second on the list of imported flowers is Chrysanthemum. Unlike roses, cut Chrysanthemums come from Dutch glasshouses. The third are carnations – often sourced from Colombia. Altogether, the assortment of imported flowers and foliage is pretty rich as it comprises products that are popular with contemporary florists. Apart from the Netherlands, Denmark, Germany and Belgium are suppliers of a variety of pot plants imported by Poles, including half-finished products, like German Hydrangeas or Belgian Azaleas ordered by some Polish growers.

When Poland was entering the European Union, domestic growers were aware that import tariffs imposed on flowers (and plants) shipped into the country from the EU would be discontinued. However, they did not expect another obstacle which came as a surprise to most of them, namely zero tariffs on flowers imported from the African countries too (the duty free access for those products to the EU market was in fact the result of the agreements between the then European Economic Community and the developing ACP countries).

EXPORTS

Due to a comparatively small scale of production in Poland, only a few cut flower growers export their products on a regular basis. Among the well-known exporters is JMP Flowers – the largest Polish floriculture

nursery, run by the Ptaszeks family, who offer roughly 70 varieties of roses, 70 varieties of Anthurium, as well as 200 cultivars of potted orchids. Another example is Bogdan Królik, the biggest Polish producer of flower bulbs (25 ha of field production, with 11 ha of tulips), which also produces and sells cut flowers, including forced tulips (6500 m² of greenhouses with plans to expand). Tulips as well as gladioli harvested from the Królik's fields at Chrzypsko Wielkie are sold in Poland and exported to Eastern countries (like Belarus) as well as to the Czech Republic and Germany.

Traders from Belarus, Russia and the Baltic States are regular customers of Polish wholesale markets in early spring, especially before Women's Day, when Polish cut tulips are their main target.

"Cross-border" year-round trade of flowers and plants characterises the sales of these goods to the Czech Republic and Slovakia. Buyers from these neighbouring countries usually source ornamental products from the wholesale markets located in the South of Poland. Neighbouring Germany is also among the leading importers of Polish floricultural goods.

Poland is the 6th most important country of origin for cut flowers imported to Germany, after the Netherlands, Kenya, Italy, Ecuador, Zambia as well as for nursery stock products where it follows the Netherlands, Italy, Denmark, Spain and Belgium (table 7).

Poland has become an important partner for Denmark, who opened the Polish division of their distribution organisation GASA Group, and sells both young and finished plants.

Due to extremely high labour costs in Denmark, some Danish growers outsource (to Poland) their labour intensive work, such as making or even only grading cuttings to be planted automatically in Denmark. They also buy half-products for pot production, grown in Poland on a contract basis.

WHOLESALE TRADING

There are about ten wholesale markets which deal with flowers and plants in Poland – mainly in larger towns such as Warsaw, Poznań and Wrocław, but their role in the country's trade of ornamental products has been decreasing. By contrast, supermarkets, discount and DIY

Vitroflora at Trzęszecz near Bydgoszcz specialises in young plant production and is one of the leading European suppliers of perennials.



Poland grows sizeable numbers of conifers, including grafted stock.

stores are growing in importance for the industry. Online transactions, web shops are also becoming increasingly popular with flower shop owners, allowing them not only to purchase flowers without visiting wholesale markets but also to sell their arrangements online. At the same time, wholesale markets have an abundance of accessories (including artificial flowers), which during some periods of the year outsell living products.

These trade hubs attract mainly medium- or small-scale wholesalers. The majority of them offer imported products, mainly cut flowers. As for growers, who usually diversify the distribution channels but sometimes depend on wholesale markets only, it is still quite popular that they (or their family members or employees) sell their products themselves.

The owners of flower shops or flower stalls are the main buyers of products passed through Polish wholesale markets.

Florists would also buy from individual wholesalers who operate on the Polish market but are not numerous. They offer mainly cut flowers and accessories.

RETAIL SALES

Flower shops still prevail as far as the retail sale of flowers is concerned. The average level of flower shop services has risen considerably in recent years, thanks to the intensive and variable floristry education available in Poland. Floristry shows and competitions, organised on many occasions, like horticultural trade shows, popularise lesser known flowers or floral trends. Flower shops – though still important – are not as dominant as the points of purchase for retail pot plants. Simultaneously, the role of supermarkets and discount stores in the distribution of these products has been growing along with the considerable rise in popularity of these outlets in Poland. Garden centres followed by DIY stores ("home & garden" markets), both also important for the sales of pot and seasonal plants, hold their position reached in the 1990s and the 2000s.

According to estimates, there are more than 2,000 garden centres but only 10% of them are big enough to

meet international standards.

Apart from the fast development of supermarkets, DIY stores are also growing. Among the global chains, recognisable in the international market, Castorama is number one in Poland, with more than 70 locations, all in bigger cities. Regardless of the distribution channel, flowering potted plants are bought most often, with potted orchids (Phalaenopsis) being a favourite among Polish consumers. However, recent sales figures confirm that the global trend of tropical foliage plants has gained ground in Poland, too.

FLUCTUATING DEMAND

Another feature of Polish floriculture is the significant fluctuation of the demand throughout the year since flowers and plants (to a lesser extent) are mainly treated as gift items in Poland. Name days are celebrated in Poland rather than birthdays, creating this uneven demand. For example, there are many popular name days in March, which – along with Women's Day celebrated on March 8 and being the best floral holiday of the year – makes this month outstanding. Other important "gift days" are: Grandmother's Day (January 21), Grandfather's Day (January 22) Valentine's Day (February 14), Mother's Day (May 26), the end of school year (around June 20) and Teacher's Day (October 14.). As a consequence of such fluctuation, there are stagnant trade periods, like the first half of January and most of the summertime.

Church celebrations contribute another reason for flower consumption and add to peaks in sales. For example, First Communion is celebrated in May, when white flowers sell well. In other periods of the year red is preferred but its popularity in the flower assortment market has been systematically decreasing in relation to the development of the Polish market and the creation of global lifestyle trends.

There are, however, certain colours that have their seasonal peaks apart from 'White May', 'Yellow Easter' is very important, while tulip 'Strong Gold' and narcissi are in a class of their own.

THREATS AND OPPORTUNITIES

In a market with an abundance of goods and with the more and more practical attitudes to gift purchases, the present situation is challenging to all representatives of the floriculture industry.

In the last couple of years, a negative practice named "Instead-of-Flowers" has become particularly popular in Poland. It refers mainly to young couples who on the occasion of weddings suggest their guests not bring flowers but... wine (for example). Some other "Instead-of-flower" campaigns are even more effective as the participants of a certain celebration (e.g. funeral) are asked to donate money to a charity.

Another worrying trend concerns cemeteries, where graves have been decorated already for many years with artificial cheap flowers 'Made in China'. Such negative tendencies can only be overcome by 'positive promotion' otherwise Generation Y (Millennials), which is becoming the most important consumer group on the market, will soon be lost as potential buyers of flowers and plants. This trend could then continue with Generation Z.

Dutch Lily Days give lily businesses powerful push

The Dutch lily industry will host its annual open house event from June 4-7, 2019. The Dutch Lily Days provide an opportunity to discover the best lilies the world has to offer.

As a horticultural entrepreneur, operating in an industry often threatened by pests and diseases, the thought of inviting customers into your greenhouses and packing areas may well send a shiver down your spine. But Dutch lily breeders, bulb farmers and traders, adhering to strict hygiene practices measures, believe that brings blooming business.

EASY TO REACH

Do you find the selection of Dutch lilies overwhelming? The Dutch have organised this event in a way that makes it easy for you to discover the world of lilies. The fourteen participating businesses are easy to reach, just 40 minutes from Amsterdam Schiphol airport by car. All nurseries are in close proximity to each other and focused on promoting, marketing and



Lily cultivation is thriving and during the four Dutch Lily Days the Netherlands becomes the epicenter of the international lily trade and a showcase for this evocative flower.



Internationally speaking, the Dutch Lily Days have generated considerable interest in the Dutch lily industry in general.

spreading the love of this beautiful flower.

Internationally speaking, the Dutch Lily Days have generated considerable interest in the Dutch lily industry generally and in lily cultivation in particular. For the participants an open house event offers a means of showcasing their breeding work to potential customers from around the world, particularly flower forcers, potted lily growers, bulb farmers, bulb exporters, garden retailers and florists.

BRAND RECOGNITION

Taking part in the Dutch Lily Days not only gives the companies more credibility but also higher brand recognition. Visitors, in turn,

appreciate Dutch Lily Days because they show that the industry is not just talking about improved disease resistance, customer appeal, bold colours, higher productivity and bud count. The event shows professionals the actual progress and latest developments in lily breeding with a behind-the-scenes look at the companies.

Now in its 9th year, the four-day lily extravaganza gives a comprehensive overview of the newest lily varieties in the five major lily groups: Orientals, OT-hybrids, Asiatics, LA-hybrids and Longiflorums. Riding the wave of popularity are the double-flowered Orientals brimming with elegance and the OTs with their large showy buds.



True lily innovation goes beyond the addition of new colours. "Breeders are also focusing on creating unscented and pollen-free varieties", explained export manager Arie Alders from De Jong Lelies. "Lily scent is a very personal thing. You either love it or you don't! Pollen, however, is always unpopular with consumers due to its sticky and staining nature. Progress by breeders moves step by step. One of the major challenges is that a sterile plant automatically produces weak plants."

HOTBED OF DISCUSSION

The Dutch Lily Days literally opens its doors to welcome visitors from around the world to see this ancient industry and the remarkable flowers up close. It's a hotbed of discussion, celebrating the excellence in Dutch lily breeding, cultivation and marketing and it's also an annual reunion during which the global lily industry catches up with international friends for whom exporters and breeders have worked before.

Lily cultivation is thriving and during the four Dutch Lily Days the Netherlands becomes the epicentre of the international lily trade and a showcase for this evocative flower.

Familiar favourites and some groundbreaking strains are all on show for the lily connoisseur. Scheduled to run a few days before the famous FlowerTrials and GreenTech show in Amsterdam, the lily extravaganza is perfectly timed to enable visitors travelling from afar to see visit multiple events in one trip. This year there are 14 exhibitors.

Participating nurseries are located in and around the north west of Holland and include P. Aker, Van den Bos Flowerbulbs, Bot Flowerbulbs, De Jong Lelies, Lily Company, Mak Breeding, Onings Holland, C. Steenvoorden, GAV's Lilies, Gebr. Vletter & Den Haan, VWS Flowerbulbs, World Breeding, Zabo Plant and Royal van Zanten.

For more information visit www.dutchlilydays.com



EPO RETURNS TO PATENTING PLANTS OBTAINED BY ESSENTIALLY BIOLOGICAL PROCESS

Mr. Hidde J. Koenraad is Partner in Intellectual Property at Boekx Advocaten (Amsterdam).

In its decision on December 5, 2018, the Technical Board of Appeal (TBA) of the European Patent Office (EPO) judged that a recently adopted rule, which prohibits the grant of patents for plants exclusively obtained by means of an essentially biological process, conflicts with the articles of the European Patent Convention (EPC). This decision (Case No. T 1063/18, related to Syngenta's patent application EP2753168 for pepper plants) presents the latest development in the ongoing legal uncertainty pertaining to whether plant products produced by essentially biological processes are patentable or not.

Readers will recall the Tomato-II and Broccoli-II decisions (G 2/12 and G 2/13) of 2015, in which it was decided that individual plants could be patented, even if they were the result of traditional breeding methods involving crossing and selection. These were controversial decisions, as patent protection for such plants was (and still is) not allowed under the laws of several European countries. Subsequently, the European Commission became involved and decided that the EU Biotech Directive, which is written into the EPC, should be interpreted to exclude plants (and parts thereof) from patentability that are obtained by means of essentially biological processes.

In 2017, to ensure uniformity of European patent law, the Administrative Council of the EPO amended the Implementing Regulations and added Rule 28(2) to also exclude such plant patent protection. It was therefore assumed that such products were not patentable.

However, this new decision of the TBA seems to confirm that patentability of plants obtained by means of an essentially biological process is still permissible after all, as previously decided in the Broccoli and Tomato cases G2/12 and G2/13. Although it now remains to be seen if this type of patent will be enforceable in all European countries, applicants may consider seeking protection for such patent matter.

In a step to address the demands of buyers and consumers for more sustainably produced goods and packaging the International Association of Horticultural Producers (AIPH) is hosting an event on sustainability in horticulture as part of its Spring Meeting 2019 programme. The conference will review the industry's use of plastic pots, sleeves, trays etc. and the industry's potential for collective action to secure a strong industry and healthier environment for the future. The conference welcomes innovation-driven, environmentally-conscious and sustainability-focused industry members.

THE AIPH SUSTAINABILITY CONFERENCE

'Plastics in Ornamental Horticulture – Creating a Sustainable Supply Chain'

Noordwijk, the Netherlands - Tuesday April 2, 2019

The conference programme includes:

THE FUTURE OF PLASTICS IN THE RETAIL SUPPLY CHAIN

Dr. David Bek, Reader in Sustainable Economies, Coventry University, UK. Dr Bek will talk about the social and environmental drivers of sustainability, consumer behaviour and developments in other industries.

WHOLESALE PERSPECTIVE (FLOWERS)

Marcel Zandvliet, Director of Marketing and CSR, Dutch Flower Group, the Netherlands. Mr Zandvliet will speak about the issue of reducing packaging in the flower supply chain and what flower sales will look like in 2030.

GROWERS WORKING TOGETHER

Brett Avery, Managing Director of Farplants, UK and Martin Simmons, Director of Operations, Horticultural Trades Association, UK. They will look at the UK growers' initiative to improve recycling of plant pots.

PLASTIC PACT

Yme Pasma, Chief Operating Officer at Royal FloraHolland, the Netherlands. Yme will look at the role of the 'Plastic Pact' in the Netherlands and initiatives underway in the auction market to improve sustainability in packaging and plastics involved in logistics.

MANUFACTURES PERSPECTIVE

Sven Hoping, Global Sales Director, Pöppelmann TEKU, Germany. Mr Hoping will outline German legislation and how Pöppelmann has closed the plastic recycling loop with the initiative, Pöppelmann blue.

CREATING A SUSTAINABLE SUPPLY CHAIN IN NORTH AMERICA

Professor Charlie Hall, Ellison Chair in International Floriculture, Texas A&M University, USA.

'HOW DO WE NEED TO CHANGE?' PANEL DISCUSSION

Jeroen Oudheusden, Floriculture Sustainability Initiative (FSI). Charlie Hall, USA. Piet Briet, Royal FloraHolland.

More speakers are to be confirmed. Visit www.aiph.org for latest event details. Tickets for the Sustainability Conference cost €350 +vat (including lunch).

THE AIPH SPRING MEETING 2019

The AIPH Spring Meeting includes the AIPH Expo conference (Monday April 1) the Sustainability Conference (Tuesday April 2) and professional visits (Wednesday 3 & Thursday 4 April) to Dutch Flower Group, the Spring Fair Royal FloraHolland, a site tour of Floriade Almere, a visit to Keukenhof and more.

Tickets for the AIPH Spring Meeting (including the Sustainability Conference) costs €900 +vat.



THE TRENDS TOWARDS A SUSTAINABLE FUTURE

Tim Briercliffe, Secretary General AIPH

Sustainability is the issue of our time. It is a major concern of society and industry and if we do not provide solutions quickly the challenge will overwhelm future generations. That is why thousands of pupils across Europe have joined a growing movement to demand action on climate change. This topic has impassioned young people around the world and as they represent the consumers of tomorrow, our industry, as well as others, must not only heed their collective demand, we must take action!

Recently images of our planet's oceans swamped by vast areas of plastic waste have been prominent in the media. The use of plastic is being reviewed in every industry as awareness rises of the environmental impact which results from poor disposal and management. Whilst we cannot control the behaviour of the end consumer we can drive efforts to reduce, re-use and recycle plastics. With this agenda, AIPH invites everyone with an interest in creating a sustainable supply chain to join our Sustainability Conference in the Netherlands on April 2, 2019. Utilising AIPH's international network, the conference is designed to increase awareness of the issues associated with plastic use, review initiatives underway and identify strategies and solutions for the future that will minimise environmental impact. It will include presentations from retailers, traders, growers and manufacturers from around the world, that are tackling this issue.

At the AIPH IGOTY Awards, held on January 22, 2019 at IPM Essen, we were proud to recognise important players leading the industry in sustainability. The gold Sustainability award was won by Inner Mongolia M-Grass Ecological Environment Group, China which grows plants that are used in large scale renaturing projects to bring habitats and biodiversity into cities, towns and areas of regeneration. Such companies highlight the importance of our industry in tackling national sustainability issues. Silver in the Sustainability category was awarded to Butterfly Garden, Denmark a company that has taken bold steps to use recycled materials. Such companies recognise the long term sustainability goals and leading the way towards reaching them.

It is also pertinent here to recognise the collective goals of the Floriculture Sustainability Initiative (FSI) of which AIPH is a member. This expanding initiative and its fifty members believe that sustainability is becoming the licence that businesses need to trade. In the following section, FCI explores the practices of some of the businesses making an impact in sustainability. Whether it's gas-free or geothermal greenhouses, responsibly produced peat or biopesticides, the message is clear - we will make quicker progress if we share our knowledge and work together.

SUSTAINABILITY PIONEER

In 2006, Dutch Phalaenopsis grower Maurice van der Hoorn opened the country's first gas-free greenhouse. Back then, the notion of a 'Kas Zonder Gas' (greenhouse without gas) was unimaginable. Today, amid increasing concerns about energy supply, Maurice's pioneering achievement is beginning to make its mark in the horticultural world.

AUTHOR: RON VAN DER PLOEG

As lower temperatures trigger Phalaenopsis to start the flowering process, they therefore require a cooling system. "Cooling a greenhouse had seemed so unnatural and wasteful to me. To think about the tons of energy used to heat the greenhouse in winter and then to lose this energy in the summer by throwing open the windows to keep it cool is a situation that now makes me feel quite uncomfortable," says generation orchid grower Maurice van der Hoorn when thinking about the time he was growing his plants while being connected to the gas grid.

CUSTOMISED INTEGRATED ENERGY SYSTEM

Contrary to all other conventional Phalaenopsis greenhouses – which cover a total area of around 200 ha in the Netherlands – Van der Hoorn Sustainable Orchid Nurseries (trading under the Amore Mio brand), does not rely on natural gas as a source of heat. Instead, they use a customised, integrated energy system based on a high-efficiency Grasso heat pump that works by recovering heat stored naturally in groundwater or aquifers. The ammonia heat pump runs during the winter months, generating both warm (50°C) and cold (6°C) water. The heat produced is used directly for the warming of the greenhouse, while the cold water is stored in two aquifers which have a capacity of 180m³/hour and sit one hundred metres deep. In summer, the greenhouse is cooled exclusively with the cold water from the aquifers allowing the heat pump to be turned off entirely.

The biggest challenge Van der Hoorn and his horticultural engineering company Bosman Van Zaal faced was to achieve optimal utilisation of the available low-grade heat. For that they used a heat exchanger in combination with a convection system. Floor-based convectors, over the full length of the greenhouse and in between the bays, are covered with a grid. Water goes to small tubes at the bottom of the appliance which can provide both heat or cooling. Fans draw in air through the grids and direct it along the tubes before distributing air masses equally under the rolling benches.



Maurice van der Hoorn: "Back in 2006, it was not my primary goal to become a world changer."

OFF-PEAK HOUR ELECTRICITY

The 15,000 m² greenhouse has entirely shifted away from natural gas but cannot operate without electricity (3.5 million kWh/year). However, the large water buffer tank (4,000m³) allows the tropical plant nursery to benefit from lower electricity rates during off-peak hours. Van der Hoorn agrees it can be addictive and time-consuming to constantly shop around for deals but stresses that he is not pulled from his bed at night to spend hours in front of his screen. "I am an avid market watcher, checking a few times per week but it has not become my sole focus as a grower. Off-peak hours are usually at night time and that's when the heat pumps are on. The old 6,500m² greenhouses were consuming 400,000 cu per year, today gas consumption is zero. As such, the groundwater pump system claims a 40% energy saving



per year but this doesn't mean you save 40% on your electricity bill. Naturally we buy carbon-free electricity and operate a climate-neutral plant nursery."

FLUCTUATING PRICES

Van der Hoorn adds that electricity prices fluctuate strongly. "Between 2006 and 2007, they were relatively low, 2008 was an expensive year followed by significant price drops. Today, electricity prices are high so growers who purchase gas to generate electricity are clearly benefiting. But we have had times when running a co-generation plant was not profitable. In Dutch greenhouse horticulture it is an extremely delicate subject. Gas for greenhouse growing has always been subsidised in terms greenhouse growers pay less energy tax. That's

Amore Mio is the candy store among Phalaenopsis as the brand represents over 20 different colours.

Careful packing of plants.



the advantage I am currently missing out on. Thinking about my fellow growers, I am of course not advocating for a higher gas price. Though the reality is that break-even for an aquifer system is at a gas price of about 25 to 28 cents per cu m but gas is currently costing 20 to 22 cents," he says.

In a world where it often seems people only have time to listen to those who shout the loudest, 30-year old Van der Hoorn is a modest horticultural entrepreneur, avoiding trumpeting his accomplishments. Perhaps too modest when considering the amount of risk taking when he built his *Kas Zonder Gas*. That is, in 2006, before Dutch greenhouse builders launched a variety of closed and semi-closed greenhouses (branded as, for example, Sunergy, Sunwind, Flowdeck, Daylight) all of which delivered significant increases in energy efficiency albeit still connected to the gas grid.

SUSTAINABILITY SELLS BADLY

At the time, the *Kas Zonder Gas* created a lot of buzz in the media, giving Van der Hoorn's Amore Mio-branded orchids unprecedented attention. In 2008, the orchid grower was presented the Encouragement Award at the annual Dutch Horticultural Entrepreneur of the Year Awards, but when the media's fascination faded, selling sustainability was, and still is, very hard. "It might be that my voice is not strong enough. Don't get me wrong; I warmly welcome the fact that other horticultural companies do their bit to help the sector act responsibly towards the environment but I don't have the financial means larger companies have. I tried to include the gas-free message on our plant labels, that ours is a plant nursery which is truly without gas and, thus, without the

smoking chimney of a cogeneration plant. However, there's an ocean of eco labels and sustainability claims that rather confuse than reassure consumers. At the wholesale level, I receive lots of praise from my customers for my sustainability efforts but at the end of the day it's all about money and cheap prices."

What Van der Hoorn really regrets is that he has not been given the opportunity to promote sustainably-grown plants upstream on the supply chain, for example by teaming up with the customers of his customers – the large garden centre chains. He is also not hiding his frustration that an individual approach like his is sometimes sneered at. "We are one of the first orchid companies which has measured its ecological footprint. We produce around 0.8 kg/CO₂/per plant. Our total annual production amounts to 1 million plants which is 800,000 kg CO₂. One Phalaenopsis with a 0.8kg/CO₂ is said to be equivalent to an 8km drive by car, acknowledging that a new car has an average carbon footprint of 100gr/km. 0.8 kg CO₂ also equal to 48 grams of ground beef (1 kg ground beef produces 16.8 kg CO₂).

However, at business networking events of large floral wholesalers they don't even listen to you, to understand that sustainability only needs a sector-wide approach such as Floriculture Sustainability Initiative (FSI). Though individual ranking of floricultural companies based on their footprint would truly spur more and more companies to set goals for reducing their CO₂ emissions and help them to differentiate themselves in the market place. To date, neither Benefits of Nature, FSI nor MPS provide such a ranking system."

EARTHQUAKES IN THE NETHERLANDS

Van der Hoorn's advocacy has had limited ripple effects beyond the glasshouse walls of his plant nursery. Until now. Recent events in the Netherlands have seen a resurgence of interest in his Greenhouse Without Gas. Earthquakes began damaging homes in the northern province of Groningen, where the Dutch discovered the largest gas field in Europe back in 1959. Gas-free housings and companies all of a sudden became high on the Dutch government's agenda with phasing out of



The Kas Zonder Gas created a lot of buzz in the media, giving Van der Hoorn's Amore Mio-branded orchids unprecedented attention.

Groningen gas seeming inevitable in the long run. "It's rather funny to see that new, large-scale energy saving greenhouses are now making the headlines while still not being completely switched off the gas grid. I had already done that thirteen years ago so for me it was nothing new. Due to the seismic activity in Groningen, my carbon-neutral greenhouse is currently drawing renewed attention from the horticultural community with Bosman Van Zaal regularly bringing in growers and other horticultural professionals from home and

Floor-based convectors, over the full length of the greenhouse and in between the bays, are covered with a grid. Fans draw in air through the grids, direct it along the tubes before distributing air masses equally under the rolling benches.



abroad," says Van der Hoorn adding he still takes great pleasure in showing fellow growers around.

NOT A SUCCESS FOR EVERYONE

Meanwhile, he is perfectly aware that a Greenhouse Without Gas is not a success story for everyone. "The benefits depend on the energy needs of the crop. In Phalaenopsis, half of the greenhouse requires cooling (20°C) while the other requires heating (28°C) which makes a heat pump ideal to use as heating and cooling are provided through the same investment. Many a tropical plant grower uses a cogen plant generating both electricity, usable heat and carbon dioxide, forcing them to generate cooling separately which is a costly exercise. In my case, cooling provided by the heat pump is a kind of waste product which allows me to cool my greenhouses in summer partly for free," says Van der Hoorn adding that operating a gas-free greenhouse requires an entirely different mindset than using conventional heating and cooling systems. "Dutch growers are typically used to literally feeling 50°C to 60°C heat when touching greenhouse heating tubes. With low-grade heat, the water is around 32°C upon entering the greenhouse whilst we are able to maintain it around 28°C by catering for a proper air distribution system. In the old greenhouse we worked with a conventional cooling system using 200 watts per m², which is a lot of energy in summertime."

PERSEVERANCE

Successful change starts with personal courage and... perseverance. Van der Hoorn: "To optimise the new system's chance of success we carried out the necessary testing with air heating. Bosman Van Zaal did the maths, then we jointly committed and implemented. The fact is that you need a new-build. Adapting an existing greenhouse would have been impossible." Though along the way much acknowledge has been acquired, the Greenhouse Without Gas is still waiting for perfection. "You only know what needs to change when you see how the system is working," the sustainability pioneer says. Using new insights provided by the Dutch horticultural education cluster Het Nieuwe



Grasso heat pump.

The large water buffer tank (400m³) allows the tropical plant nursery to benefit from lower electricity rates during off-peak hours.

Telen (Next Growing) - which focuses on sustainable growing practices - he continually tweaks things. In the beginning, Stechdoppel polycarbonate roofing for super insulation and double energy screens caused humidity levels to rise. "Meanwhile, I have learnt how to fine-tune venting and air circulation. Speaking of polycarbonate roofing and its drawbacks, one is that fireworks on New Year's Eve keep you awake at night due to possible fire hazards," comments Van der Hoorn. Working with convection heating also means air currents can lead to substrates becoming dry more quickly. "Using a more fine grade of bark allows me to have 5 to 10% more humidity in the pots which eventually translates into better branching and more buds with bolder colours. Customers tell us that we are the candy store among Phalaenopsis growers as we grow over 20 different colours. Amore Mio orchids also differentiate themselves by their smaller 12 cm pot size," explains Van der Hoorn.

MAKING HISTORY

The Greenhouse Without Gas has made history by being one of the first intelligent ways to sustainably satisfy different energy needs in Dutch greenhouse orchid production and it is still the first of its kind in the horticultural world. It will continue to change the way greenhouse horticulture thinks about energy production. Questioned about his inner drive for sustainability, Van der Hoorn stresses that he sincerely cares for people and the planet, especially when thinking about future generations. And even though sustainability is hard to sell, the Kas Zonder Gas had led to an overall positive recognition of the Amore Mio brand which in turn has helped anticipate regulatory trends and policies. But he is honest enough to admit that profit is also one of the major drivers of sustainability. "Back in 2006, it was not my primary goal to become a world changer. Only in a perfect world would companies be angelic. But we're a business and we need to provide returns to cover our operating costs. At the end of the day, all horticultural entrepreneurs consider the financial aspects first."



RESPONSIBLY PRODUCED PEAT PROMISE

Peat moss is the major component in most potting soils. The environmental impact of its extraction depends on the production practices used by peat producers. Formally established in 2013 with its board installed in Vilnius (Lithuania) in September the same year, RPP is the label that stands for Responsibly Produced Peat. RPP Secretary Hein Boon explains to FCI why responsible and sustainable peatland management is of paramount importance.

AUTHOR: RON VAN DER PLOEG PHOTOS: BIANCA FENNE

From the peat bog to the peat manufacturer, to the garden centre shelf and to the growers' rolling bench: this is the story of RPP and its industry-wide call to help build a sustainable peat industry. Much is at stake, say RPP's Secretary Hein Boon and executive officer manager Maureen Kuenen in their office in Naaldwijk, the Netherlands.

HIGH CONSERVATION VALUE

Peat moss develops in a peat bog, a distinctive kind of wetland which accumulates decomposing moss for thousands of years. It's not something to be ruthlessly extracted in a couple of months. "RPP ensures that areas with High Conservation Value (HCV) are identified and conserved. If, for example, the area is home to rare wildlife or plants extraction is strictly off limits. However, where an area has been drained, used for agriculture and as such is highly degraded with peat producing harmful carbon CO₂, RPP recommends extraction," says Boon.

VALUABLE CONSTITUENT

What's more, Responsibly Produced Peat certification secures the best possible development following peat production, with preference for restoration. Of course, the foundation is also committed to ensure the long-term security of what Boon calls 'the most important and valuable constituent for growing media accounting for around 75% of their volume'. "Peat is free of pathogens, has good water and air holding properties while it is devoid of nutrients. Peat moss is widely used in the ornamentals sector but in vegetable transplants and potted herbs as well," Boon says.

CHARM OFFENSIVE

RPP is the brainchild of RHP, the European growing media quality control body with whom RPP shares its Dutch-based office, together with VPN, the Dutch trade association for growing media producers. Co-funded by the Dutch government and backed by international soil scientists and NGOs such as Wetlands International and the Estonian Fund for Nature, RPP is also a charm offensive in a bid to win 'a social licence' to operate from a retail business audience that is increasingly demanding transparency from the whole supply chain.

Asked whether awareness and demand from consumers are equally strong Kuenen says, "It's a matter of time. People pay attention to environmental credentials especially those of the new generation. We have seen examples of environmental influencers which prompted change in a short time. The problem is that you can never tell when this will happen. For now, the biggest demand stems from the retail sector. The sustainability debate can also put governments under pressure, as in Germany, with political decisions that are not always well thought-out and sometimes even harmful. Overall, the industry must take the lead and not wait for consumer demand. It is important to be a few steps ahead to ensure that future customers don't lose trust in the environmental claims of your product."

ANTI-PEAT LOBBY

Speaking of claims, the anti-peat lobby, which is particularly strong in the UK, defends itself by saying that a



RPP Secretary Heinn Boon: "One should also take into consideration that in our relatively small industry it is not so easy for greenwashing to go unnoticed."

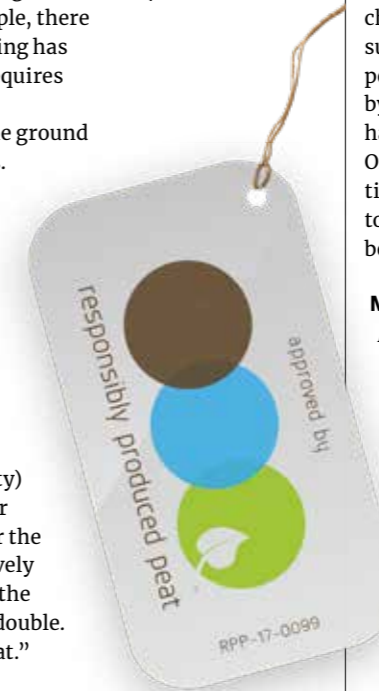


range of alternatives such as compost, wood fibres and coco coir are readily available. But in some segments of the industry, plant propagation for example, there is no real substitute for peat. Peat free growing has different watering requirements and this requires more examination and understanding. Boon: "More peat is already being kept in the ground and there's ongoing research on substitutes. However, volumes and quality of these alternatives are still an issue. In addition, a comparative study for alternative organic matter and its carbon footprint when shipping it around the world is needed. The idea is to have responsibly produced peat readily available while further research on renewable alternatives can continue. The continuation of the peat free trend will slow the overall demand for peat. However, IPS (International Peatland Society) market research reveals that the demand for growing media is expected to be strong over the next thirty years. The share of peat is relatively decreasing, but due to the strong growth of the total market, peat volumes are expected to double. Of course, we hope this will apply to RPP peat."

LEGITIMATE LABELS VERSUS GREENWASHING

A few hurdles have yet to be overcome. One of the biggest is the myriad of product labels touting eco-friendly credentials. How can buyers tell if the green certification and labels are legitimate or just greenwashing? "The volumes of RPP produced peat and its share in the value chain when it comes to manufacturing potting soil must be under strict control," stresses Boon. He continues, "Based on the chain of custody principles all participating companies must be RPP registered to use both the

Restored peatlands.



To date, the Board of Responsibly Produced Peat granted the RPP certificate to 45 sites across Germany, Sweden and the Baltic states of Lithuania, Latvia and Estonia.

label and registration number. Besides, RPP constantly inspects the harvesting with independent inspectors checking satellite images and visiting the area. They also supervise what happens afterwards. It is important that peat producers help nature restore itself for example by planting Sphagnum. This way, we make sure peat is harvested responsibly with respect for the environment. One should also take into consideration that in our relatively small industry it is not so easy for greenwashing to go unnoticed. One way companies can foster trust is to be transparent."

MASS BALANCE CONCEPT

Another challenge is the so-called mass balance concept which basically means that if customers buy half of their peat as RPP certified they can put the label on half of their peat mixes, even though these might not contain the RPP certified peat. Peat is shipped and processed in large quantities, which means it is usually very costly and undoable to keep certified peat from non-certified peat. Kuenen is quick to add that RPP's traceability system means you can be sure the certified peat that enters the value chain originates from RPP certified peat producers, even though it is mixed with non-certified peat later on.

To date, the Board of Responsibly Produced Peat granted the RPP certificate to 45 sites across Germany, Sweden and the Baltic states of Lithuania, Latvia and Estonia. Combined, they cover an area of approximately 13,000 ha. RPP's ultimate goal is to become mainstream by having 150-200 sites certified and at least half of total production area dedicated to the extraction of 'horticultural' peat. In Europe the total area of peat production sites covers 120,000 with half of it in use for growing media and the remainder for energy purposes. gardening.

GEOHERMAL IN DUTCH GLASSHOUSE PRODUCTION HEATS UP



Discovery of one of the world's largest fields of natural gas in the world, in the late 1950s, helped propel the horticulture industry in the Netherlands to where it is today. But Dutch government policy over the last few years, to scale back gas extraction and set growers ambitious sustainability targets, has fostered development of alternative sources of renewable energy. In another fortunate coincidence for some Dutch nurseries, one of these is the plentiful supply of hot water, albeit deep underground, that they sit on.

Financing the infrastructure to access geothermal energy needs deep pockets. But several installations are now up and running in the Netherlands in projects largely driven by the growers themselves, backed by geothermal specialists.

KOEKOEKSPOLDER'S SET UP

Koekoekspolder in the province of Overijssel is an important area for glasshouse production. A group of growers there started to look into the potential of alternatives to gas to heat their crops 10 years ago, with the help of engineer Radboud Vorage of AgriProject. "At the time gas prices had rocketed on the back of the oil price which had exceeded 100 dollars a barrel," he recalls. "It turned out that geothermal energy presented good opportunities in our area so we worked out a plan



to establish a geothermal well and started the company Aardwarmtecluster 1 KKP BV." Two wells, drilled to a depth of almost 2km, are actually involved in the set-up. Ground water at a temperature of 75°C is pumped up from one, passed through a heat exchanger to warm up water in a closed loop connected to the nurseries, and then returned to the ground via the second well 1.5km away. The water in the nursery loop is heated to 72°C and arrives first at the three sites growing cucumbers and tomatoes, crops which have the highest heat demand; when its temperature falls to 37°C, the water then travels to the nurseries producing lettuce, pak choi, strawberries and organic vegetable seeds. At 20°C, the water is returned to the heat exchanger, bringing it back for reheating from the deep sub-surface reservoir to start the cycle again.

REQUIREMENT FOR A SOLID BUSINESS CASE

Seven nurseries within a 2km radius are currently connected to the network; an eighth, growing organic tomatoes and peppers, will join this year, bringing the total area of glasshouse crops heated by the project to more than 26ha. "In the Netherlands the minimal requirement for a solid business case for wells at a depth of 2 to 3km is at least 15-25ha of greenhouses with a yearly heat demand equivalent to 7,500,000cu m of natural gas, which means the well needs to deliver about 7 thermal megawatts or more of heat," says Vorage. "For technical and economic reasons, it is best for the well to produce in a continuous flow," he adds. "So in spring and summer we have enough heat for everybody but not in winter when, between November and March depending on the crop, the nurseries also use natural gas. It is important to always have a back-up heating system available."

The project has cost around 12.5 million euros – growers' own capital investment is backed by loans and grants from various organisations, including the local council, and local and national government. The three growers involved from the outset are shareholders in the company. "Nurseries that joined at a later stage were asked to invest in the heat distribution network, especially the part connecting to their own greenhouse with the network," says Vorage.

GOVERNMENT SUBSIDY

Like other sources of renewable heat in the Netherlands such as solar and wind power, geothermal heat attracts a government subsidy under the SDE+, or 'sustainable energy promotion', scheme which compensates the generator for the difference between the cost of producing the renewable energy and its market value. Heat from geothermal energy has to compete with heat produced from burning natural gas, says Vorage, and it's currently 'substantially cheaper' to heat a greenhouse with gas.



Installing drill pipe.

Bird's Eye view of Koekoekspolder: inside its immense glass structures, expert growers are producing lettuce, pak choi, strawberries and organic vegetable seeds.



The subsidy, a feed-in tariff which is available for 15 years, covers the difference and is calculated annually depending on the prevailing gas price. "Break-even [for geothermal] is at a gas price of about 34 to 40 cents per cu m but gas is currently costing 20 to 22 cents," he says. The nurseries pay Aardwarmtecluster for the amount of heat delivered to their greenhouses, which works out at present at 5-7 euros per sq m depending on crop. The price is set at a level to account for the fact that for a large part of the season some of the growers have to buy liquid CO₂ to maximise yields, which, had they been burning gas, would have been partly available to them 'free'.

FURTHER EXPANSION

With the well now at maximum capacity, and calculated to have access to enough hot water for 60 years, any further expansion will require another one to be drilled, which the company is planning to have under way by early 2020. "It will be close to the current one and will allow us to supply heat to an increased acreage of glass," he says. "We already have additional growers interested in connecting to the system." Even adding the second well to draw hot water from the aquifer won't mean they will all be supplied with more winter heat. So two of the growers in the scheme are also installing a biomass boiler plant, which will burn scrap wood and prunings, to generate heat over the winter. The heat will be available to the other nurseries to buy, further reducing the group's dependence on fossil fuel.

CARBON FOOTPRINT

While geothermal heat is no cheaper than natural gas, the main benefit to the nurseries on the network is in reducing their carbon footprint, says Vorage. "Many growers are using geothermal because of being able to promote their business as using green energy," he says. "It is a high investment so cooperation between growers is the only way to make it available and affordable." With the Dutch government committed to stop producing natural gas altogether by 2050, it may not be long before the economics swing in favour of geothermal schemes.

FSI: INITIATIVE OR EDICT?

The Floriculture Sustainability Initiative (FSI) has promised that 90% of flowers and plants will be responsibly grown and traded by 2020. But are we on track? FCI sat down with FSI's Chief Executive Jeroen Oudheusden who is optimistic about the floral industry's ability to rise to the FSI sustainability change, especially for the more seasoned retail suppliers. True sustainability he says, starts with a different mindset, which encompasses a good dose of sensitivity, values and morality.

AUTHOR: RON VAN DER PLOEG PHOTOS: DIMITRIOS FOS

A proof of sustainability is sometimes in the detail. Jeroen and I met in the Hague, the Netherlands in the SER headquarters where he frequently co-shares one of their flexible working rooms.

Fortunately, we can confirm that he pulled up in an electric car and to comfort the more cynical individuals among us, FSI hired Oudheusden as a part-time employee. This circumvents building a bulky central sustainability team that itself could be a reason for floral industry colleagues to resist developing their own sustainability programmes. SER stands for Social and Economic Council of the Netherlands (SER), an advisory body for the Dutch government in which employers, employees and independent experts work together to reach agreement on key social and economic issues. International Responsible Business Conduct is at the heart of their business which explains why Oudheusden is one of their regular visitors.

POLITICAL AMBIANCE

Political ambiance is something Oudheusden is very familiar with. IDH, the Sustainable Trade Initiative and initiator/startup fund for FSI back in 2013, was established 10 years ago by the Dutch government, a private-public partnership to push the sustainability envelope in complex supply chains such as cocoa, coffee

and vanilla. "Today, it is funded by the Swiss, Danish, Norwegian and, naturally, Dutch government. They take action to tackle key environmental and social topics such as IPM, deforestation, water stewardship, chain transparency, gender and living wages. Typical of their non-NGO approach, companies are put in the lead and their sustainability benchmarking framework is based on the Basket of Standards. International standards are benchmarked against international reference points and legislation on social and envi-

ronmental criteria. Once recognised by the supply chain as responsible sources, they are added to this basket. The same basket system we use in flowers applies to spices and vegetables.

'COURAGE IS REQUIRED AS BEING GREEN AUTOMATICALLY COMES WITH RISK-TAKING'

So we learn from each other. IDH is also co-funding projects. Last year, the floral business teamed up with the stakeholders from the tea industry in Kenya to prove why gender equality is a good business practice and we are drawing on the lessons from such projects."

HACKING THROUGH THE JUNGLE

The international arena of Germany's IPM ESSEN show in 2013 marked the launch of FSI to encourage greater adoption of sustainability practices, improve auditing and compliance, and simplify the assessment process for organisations and suppliers in the ornamentals sector. "FSI's first exercise was to hack its way through the jungle of no less than 30 ecolabels, the majority of them with an unclear content or governance and, as such, difficult to compare. With the help of the International Trade Centre in Geneva, which provided a sustainability roadmap, coupled with benchmarking soon brought clarity to the marketplace. All of the standards in our basket have now successfully passed the test in terms of transparency and basic requirements.

Evolution has been a part of FSI since its inception. Gaining nine new members in the last year alone, more companies are joining and reporting their volumes of sustainably produced and traded flowers. Oudheusden says that with over 50 active members, a consolidated



FSI network is committed to doubling its efforts to reach the FSI objective of 90% responsibly sourced flowers and ornamentals.

Will the Initiative miss its initial 2020 target? "When we first started, the most important questions to answer were: What can FSI tangibly do for me and how can we make sustainability more visible. Data quality has improved in addition to increased transparency of certified growers. Some companies are already close to the 90% target, especially those who started many years ago by implementing sustainability strategies. These include almost all potted plant growers who are strongly rooted in the retail business where strict requirements on ecologically sound products have been in place for a long time. However, percentages differ, some are at 80%, others 60% some 40% two years ago. Some growers produce a multitude of seasonal crops difficult to certify. For some it's a struggle because they run relatively small businesses."

Currently there are 14 sustainable standards and schemes in the FSI basket with FlorEcuador next in line. According to Oudheusden, the basket is now offering a complete package. "The basket allows you to choose from different

FSI's Chief Executive Jeroen Oudheusden: "Sustainability is no longer an option but an imperative."

certificates, all meeting the same basic requirements. The next step is to avoid duplication of standards. FSI's aim is to provide a one-stop shop for retailers. Buying flowers and plants under Basket label A should be no different from doing the same under Basket label B.

BINDING GLUE

Sustainability is a complex concept, difficult to define, difficult to quantify. Among the many issues at stake are energy, water, air quality, workers' health and social equity, not to mention the incredible number of different ornamentals and production locations around the world. The most frequently used definition is from the UN World Commission on Environment and Development: 'Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.'

When asked for his own personal definition Oudheusden points to the famous triple bottom line People Planet Profit in which he is a firm believer. "All aspects of sustainability – environmental, social and economic – should be viewed together as a whole. The financial aspect is sometimes left out but sustainability is nothing if it doesn't work for business, too."

Questioned about whether FSI undermines or improves financial results, he says, "There are definitely examples of how spending on sustainability efforts including the use of renewable energy sources can yield cost savings. Using effective sustainability marketing may even allow you to sell your flowers at a higher price. Profit can translate into economic growth in the world's flower growing regions, to better livelihoods."

Oudheusden invites us to look at the deeper shades of green. "Sustainability is no longer an option but an imperative. We as an industry provide the ultimate feel-good product. It would be totally crazy if we would compromise our environment to grow these beautiful flowers and plants. It's our duty and responsibility to ensure that we live up to customer expectations. Businesses have to lead and educate, not wait for consumer demand."

He adds that sustainability is about positioning your company for long-term success and that requires courage as being green automatically comes with risk taking. Sustainability also brings a multitude of stakeholders together in coalitions that normally would never have existed. "Among participants in our meetings are competing wholesale companies and truly the entire value chain from propagator, breeder, grower, wholesaler, garden retailer to auctioneer and retailer. Indeed, FSI acts as binding glue."

DEMAND-DRIVEN?

FSI is a market-driven, cross-industry initiative. "The market that is the end consumer but also the intermediaries that always find themselves in between supply and demand, and ultimately also the growers," explains Oudheusden.

Over the past couple of years, I have interviewed quite a few florists, wholesalers, tenants at wholesale flower markets and their typical response was that they didn't ask source sustainable flowers because customers didn't ask

for it. With this in mind my pertinent question is whether FSI is also demand-driven. "There's no doubt there's a lack of sustainably grown products. The problem is that sustainably grown flowers and plants are not always easy to identify in the marketplace due to a lack of data. Here the wholesaler's online shop can play a pivotal role by linking sustainability data to the available assortment." When the discussion veers back to the demand question, Oudheusden peers out the window as if he wants to point to the Hague's city centre where only one day before our interview thousands of secondary school students gathered to take part in a demonstration calling for action on climate change. "The whole thing was organised through a few WhatsApp messages. The consumer demand for more sustainable products is evident especially in the food chain. Sustainability provides the perfect opportunity to make clear what the floral industry really stands for when it comes to environmental and social issues. Think Green City, think about the many benefits greenery has on the urban environment and indoor living spaces. But we should make sure that our story is correct and complete. The consumer has the right to expect that our flowers are produced in a responsible way."

UNIVERSAL LABEL

With the floral industry being a highly global business, why not launch one big universal 'fair flowers, fair plants label'. "If you had 14 labels, we would just be number 15. With that I am saying that our aim is to be a neutral observer, stimulate and push the standards and be increasingly transparent in the market. Different standards have decided to specialise and to raise their own level of criteria. We have no preference for any specific label and believe they all do things in a different way. FlorVerde members in Colombia may face completely different challenges than their fellow growers in Denmark. As such, it is good to have a set of specific certifications or code of practices that help growers meet the requirements but only if you can benchmark them against good practice that you have established as a sector."

CONNECTING WITH RETAIL

Meanwhile, it is a particular challenge to have more retailers on board, confesses Oudheusden. "Some big retailers such as Ikea, Rewe and AH are already in but it is no secret that we would like to be better connected with the retail sector. For them floral is only a small part of their portfolio and they find it difficult to link up to our, in their eyes, small initiative. They're definitely interested and would like to support us but becoming a member is a decision which is not to be taken lightly. And let's be frank: committing yourself to 90% sustainable sourcing is something you would have to think twice about, willing to spend money and energy."

With over half of its members being of Dutch origin, FSI may give the wrong impression about its international character. Some critical voices abroad have even branded



'THERE'S NO DOUBT THERE'S A LACK OF SUSTAINABLY GROWN PRODUCTS'

FSI the newest lobby organisation to promote Dutch trade. "On the positive side one can say that we were lucky enough that these companies were brave enough to take this initiative, to become members and active participants. It's a fact of life that there are a lot of Dutch involved in the floral industry. However, when looking into our membership base, we have companies from around the world. Also our board consists of people with many different nationalities, representing the major flower-producing countries. Our trade is global as is FSI."

SOCIAL LICENSE TO OPERATE

Regarding the willingness at the grower's level, Oudheusden says that FSI offers a network that rewards improvements on sustainable practice. The value of a certificate is that it allows you to compare yourself to your peers in the industry. The core is being a professional wanting to improve and being transparent and accountable for what you are doing. Certification is like a stamp of approval, sometimes considered being a burden as it costs money (costly annual audits), time, energy and paperwork. "However, it is also rapidly becoming a license to operate and not only for a retail audience. No certification for certain market segments or retailers means that you are out. A sustainable edict rather than a sustainable initiative? "Bad is a situation where you are forced to have multiple certifications though they are all basically the same thing. That's something we really should get rid of as a business sector. Nobody wants additional audit costs, especially the growers," concludes Oudheusden.

For more information: www.fsi2020.com and follow FSI on [Linked-In](#).

The first two months of 2019 are behind us. Overall, last year was a decent year but not as successful for all product groups as we would have hoped. Markets in Europe and China are under pressure because of economic situations and production locations around the globe have suffered from unusual weather conditions. However, in general, there is still room for growth and that will continue in the coming years.

A SUSTAINABLE INDUSTRY FACILITATES GROWTH

In different areas of the world there has been an increase in production not only because more land is being cultivated but also because new, improved varieties are being produced. It is important that markets continue to grow. Being a sustainable industry facilitates this growth. Consumers demand a reliable, trust-worthy product and our industry can provide this.

During my visits to various farms this was a recurring concern and the majority of growers told me that they are meeting the sustainability requirements but only act when the markets dictate. It is obvious to me that if we spend so much effort producing beautiful flowers and plants, then maintaining a sustainable supply chain through delivery must be our brand promise as well. These discussions are already taking place and several well-trained companies can help attain these standards. If we don't set new standards, consumers will.

This is not the only change necessary for growing markets. Recently Wageningen University provided data from research about the effect of plants being present in work environments. It is amazing to see what positive effects they have discovered. They not only found a positive effect on humidity but also individuals in the workplace. In a green environment people felt more comfortable, exhibited

better mental health but most importantly, the number of employees taking sick leave decreased. Amazing results although we all know that working in the flower and plant industry has positive effects for all of us. Our products allow other industries to give their employees better work environments.

If you ask me, we as an industry, are lucky to grow products that perfectly fit current consumer trends. Flowers and plants not only bring colour, joy and happiness but also keep people healthy. It is our job to come up with the correct supply chain standards to keep our customers happy not only now but also in the future.

Fred van Tol
Manager International Development
Royal FloraHolland



BE SEEN – IN HI-VIZ GREEN

Time to take off those rose-coloured spectacles – the future is Green. Let's be positive about this, embrace the benefits and prepare for the challenges in time to benefit.

AUTHOR: LOUISE WAINWRIGHT

The reduction of chemical pesticides in flower growing may have seemed an irrelevant issue two decades ago, but things have moved on as inevitably as the earth keeps spinning. It is already being done in some parts of the world and it is not 'just another research programme'. Best advice would be to make plans to ride this wave and enjoy the exhilaration of real growing. Providing they can be protected from the ravages of pests and disease, plants grow better without the assault on their biochemistry from chemical cocktails. That's a fact.

BIO-PESTICIDES

In 2019, why not make plans to visit growers who have already made the shift to low pesticide flower production by using bio-pesticides and learn about how they overcome the issues. Perhaps consider sending staff for an apprenticeship programme, if you can organise this. European retailers are already very excited about these achievements and are supporting industries that have the necessary local bio-pesticide registrations to implement this type of programme. For some years now, European retailers have funded practical training programmes and on-farm demonstration trials to encourage wider adoption of low pesticide flower growing in these countries.

ZERO RISK PEST RESISTANCE

Don't let this prospect fill you with gloom. It is not as difficult as you think – if your country has the necessary bio-pesticide registrations and they are not marketed with a premium price tag. The use of bio-pesticides is compatible with the use of many chemical pesticides, and most can even be tank-mixed with chemical pesticides. Surprisingly, there is often not much of a harmful effect from bio-pesticides on the natural enemies of pests and local natural enemy populations can even migrate into the crop. Currently there is believed to be zero risk of pest resistance to bio-pesticides, zero toxic residues and reduced human health issues. Programmes need to be prophylactic, preventative programmes because bio-pesticides are not quick 'knock down' tools like chemicals. In high risk situations they can be used in conjunction with

appropriate pesticides, including fungicides. Ask your biocontrol suppliers what training they offer on this.

MEET THE GROWERS

The widespread use of microbiological bio-pesticides in Kenya in roses has enabled their industry to make significant chemical pesticide reductions. Meeting these growers might inspire you to lobby governments and regulators to accelerate the introduction of bio-pesticide alternatives. It would be wise to do this before pressure from retailers force the change when you do not have all the tools needed. Consumers, governments and retailers are adamant about providing alternatives and encouraging the adoption of low pesticide crop protection programmes in ornamentals and cut-flowers – in spite

of the fact that they are usually not consumed. The widespread retailer-driven ban on the use of neonicotinoids in bedding plants, even for propagators, is a good example of the growing international concern about the negative

impact of chemical pesticides on the environment and non-target life.

IBMA

However, the pace of registration of bio-pesticides can be slowed by inadequately resourced and experienced Regulators – unable or unwilling to make decisions quickly enough. The IBMA (www.ibma-global.org), International Bio-control Manufacturers Association, have produced a White Paper designed to overcome this problem through a centralised European Registration system with participation from Member States. They need your support to empower their efforts to lobby governments.

PRACTICAL EXPERIENCE IS NEEDED

Beware of consultants who do not have the practical experience needed to manage these types of programmes because they spend the majority of their time in countries where bio-pesticides are not widely registered or used. One of the big issues about empowering flower farmers globally for the future is that many of the universities and colleges are behind the wave when it comes to up-to-date practical knowledge and skills needed to manage

'PLANTS GROW BETTER
WITHOUT THE ASSAULT ON THEIR
BIOCHEMISTRY FROM CHEMICAL
COCKTAILS'

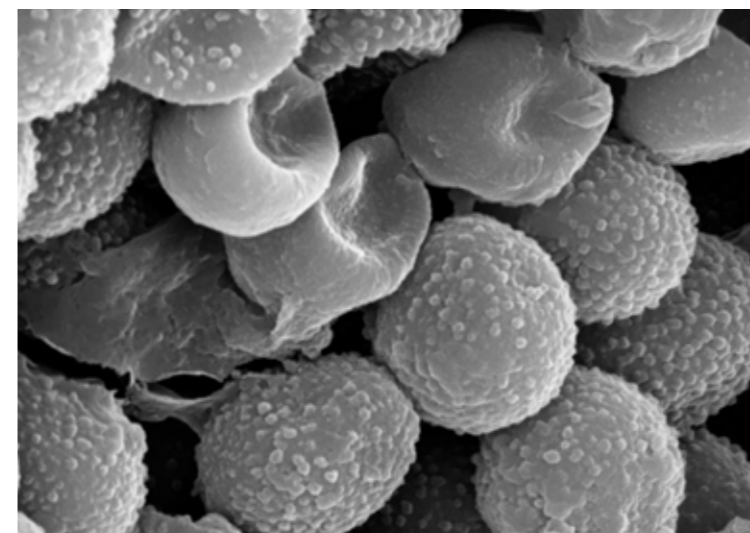


bio-pesticide intensive programmes in ornamentals. There are no practical qualifications in real bio-intensive IPM (Integrated Pest Management), so it is difficult to identify the more useful consultants or employees to add to your team. Whilst there are legally binding descriptors and regulations about what constitutes and 'organic' production unit – there is currently no equivalent regulations about what a grower must do to 'label' their produce as 'IPM' produce.

NEW CERTIFICATION

There are murmurs in the corridors about a new certification for 'pesticide free' produce that has no chemical residues but is not 'organic'. If this comes to fruition it will probably be implemented more widely on edible produce but it would be unwise to hope that ornamentals will avoid the gaze of retailers once this has happened. The stinging effect of consumer and environmental

The spores of Trichoderma sperellum that are used as a biopesticide to control soil diseases and root knot nematodes.



groups' attacks on the Valentine trade with 'revelations' about chemical pesticides on roses given to loved ones, is something retailers would prefer not to have to deal with. Retailers have developed pesticide Active Lists which restrict the types of chemicals that growers are allowed to use. Products like abamectin, acephate, chlorothalonil, deltamethrin, imidacloprid, lufenuron and thiophanate-methyl are on their Red List, because of concerns of safety for the environment and human beings. Retailers are being urged by customers and pressure groups to regularly test flowers and publicize the pesticide residues found, especially just before Valentine's Day. So, what can a grower do to protect these delicate blooms whilst reducing the use of chemical pesticides?

US\$6.2 BILLION MARKET BY 2024

Increased use of biological controls in ornamentals seems inevitable. All the biocontrol companies are seeing a global expansion in the sales of macro-biologicals, such as predatory mites, parasitic wasps and other predators. But it is the micro-biologicals (bio-pesticides) which have attracted the most interest. Bio-pesticides are naturally occurring fungi, bacteria and botanical extracts that have been mass produced and registered for use a similar way to chemical pesticides. They are less harmful to non-targets and are not persistent on the environment so they have undeniable environmental benefits over chemical pesticides. Biocontrol giants are jostling to acquire EU registrations and production facilities to ensure that they can offer these to their customers as robust, affordable alternatives to the conventional chemical pesticides. The global market for bio-pesticides is forecast to reach US\$6.2 billion by 2024. Bio-pesticide production represents a lower carbon foot-print than chemical pesticide production and supports a move towards smart climate change agriculture! Be green – be hi-viz green.

Insight and tips for peony success

AUTHOR: RON VAN DER PLOEG PHOTOS: DIMITRIOSFOS

On Wednesday December 19, 2018, bulb growers' cooperative CNB held its annual Peony Session at its preparation and cooling premises in Bovenkarspel, the Netherlands. Around 160 growers gathered to hear expert advice from experienced counsellors and crop experts on ultra-low oxygen (ULO) storage, herbicide admissions/applications and drip irrigation. CNB's lead peony specialist Ron Hoogveen and network coordinator of summer flowers for glasshouse sector body Glastuinbouw Nederland Aad Vernooij treated their audience (a mix of seasoned veterans and newcomers in the field of peony cultivation) to an afternoon programme full of insight and tips for peony success.

2018: AN EXCEPTIONAL YEAR

In 2018, Western Europe experienced one of its hottest summers on record, with the full effects of the long-lasting drought only to be seen in the peony fields this spring. Looking back on last year's growing season, Hoogveen says that the twists and turns seen in the European climate were exceptional by any standard. "Warm, sunny weather during April and May brought Dutch fields into peak production, and while the Netherlands got off to an early start, relatively cold spring weather delayed the harvest season in Southern Europe. The French and Italian peony peak was late and with the Netherlands coming onto

the market there was an overlap and eventually an oversupply. An unlucky combination of heat and a shortage of flower pickers saw a portion of flowers wilting on the field by the end of the season. Moreover, some of the freshly harvested flowers were too warm when stored, affecting the quality of saleable flowers.

WORLD PRODUCTION AREAS

The Netherlands accounts for about two-thirds of the total peony supply grown in Europe. Total production area is approximately 750 ha. France has 80-90 ha down for cut flowers and there are smaller areas in the

largest wholesaler of bare rooted peonies in the world, has subsidiaries in Niagara Falls and Gurnee (Illinois). He is witnessing that conventional potted peony growers in the US, who in the past focused only on large container production and sales to big box stores, are now growing peonies as a cut flower too with Whole Foods Market among their first customer.

De Vroomen says the US is an excellent place to do business but the market has specific demands. Potted plant cultivation in large containers means punctuality in delivery of bare rooted plants that is no later than the first week of October.

Winter can come unexpectedly and early in the US and growers prefer to have their cuttings (3-5 noses of shoots and more recently 6-8 noses of shoots) rooted before

'THE FRENCH AND ITALIAN PEONY PEAK WAS LATE AND WITH THE NETHERLANDS COMING ONTO THE MARKET THERE WAS AN OVERLAP AND EVENTUALLY AN OVERSUPPLY'

UK, Italy Portugal and Spain. Israel has approximately 40 ha, grown to target early spring demand in Europe. Beyond European borders, Hoogveen sees significant expansion in production areas in China, the US, Canada, Norway and Russia, prompting him to ask his audience whether the industry is reaching its limits for growth.

In planting stock material CNB's trade is booming with a growing demand from China, Russia, the United States and Canada. Jacques de Vroomen, the self-acclaimed

temperatures drop well below zero. In the US, Vroomen says, the market is dominated by double-flowered pink lactiflora variety 'Sarah Bernardt', introduced in 1895. Double white 'Duchesse de Nemours' and the soft pink double-flowered 'Mrs Franklin D. Roosevelt' also rank high on America's list of top favourite peonies. The traditional retail florists continue to have a soft spot for pink and white varieties though Coral varieties in soft hues of orange and peach are also gaining popularity.



PEONIES AROUND THE AUCTION CLOCK

Royal FloraHolland's auctioneer Mario Heemskerck commented that last year a set of fairly unique circumstances led to peonies arriving for the flower auction five days a week, all year round. "Every single day we auctioned off peonies. In January, peony sales started with flowers from the southern hemisphere followed by Israeli peonies (which have seen a dramatic decline in production over the past few years), then came flowers from Italy, France and finally the Netherlands completing the circle." Due to unusually high temperatures quite a few Dutch peonies were too warm when stored resulting in complaints about the ripeness of the flowers. "Flowers were stored until October when the first freshly picked peonies from Chile arrived. Product volumes were more or less the same as 2017," Heemskerck added.

CNB's lead peony specialist Ron Hooegeveen and network coordinator of summer flowers for glasshouse sector body Glastuinbouw Nederland Aad Vernooy.



Each box has six semi-permeable membranes to regulate gas exchange and stop oxygen from coming in.

ULO STORAGE

CNB's Yorick van Leeuwen released the first results of the cooperative's experimental project on ULO storage of peony cut flowers. ULO is a system that inhibits and delays the physiological processes in fruits and bulbs. Air contains about 21% oxygen and by significantly reducing the oxygen level the respiration of the stored product can be slowed to a low level. CNB's investments in extensive ULO storage facilities have extended the marketability of the so-called ice tulips – tulip bulbs which are stored and used for forcing in autumn a year after they were harvested. By CNB's industrial standards, the ULO storage for peonies project is small scale: participants included two growers each using six airtight ULO storage boxes. Each box has six semi-permeable membranes to regulate gas exchange and stop oxygen from coming in. Oxygen levels were reduced to around 5% and the boxes were kept in CNB's standard cold stores at a low temperature. Flowers were introduced into the boxes on May 24, 2018 and June 4, 2018 with approximately 700 stems filling 3/4 of the space. Tested varieties included 'Sarah Bernhardt', 'Kansas', 'Gardenia', 'Alexander Fleming', 'Bridal Shower', 'Top Brass', 'Dinner Plate' and 'Mr Jules Elie' all of which were ULO-stored for 14 weeks. For comparison, the same varieties were also stored in conventional coolers. Based on the first trial results, the

following encouraging conclusions can be made: ULO-based protocols can significantly extend the shelf life of peonies up to 14 weeks. Without exception all batches kept under ULO featured healthier looking leaves than those stored in conventional coolers which looked droopy and fatigued with leaves curling and dried out. However, there are other

A PROFITABLE BUSINESS MODEL FOR ULO-STORED PEONIES IS POSSIBLE

factors to consider for ULO-boxed peonies. For example, ULO requires safety measures to be taken as there can be danger of suffocation. Moreover, it is clear that, despite the absence of hard data, the success of ULO-stored peonies highly depends on whether field heat has been removed from the flowers before cooling. To prevent Botrytis infections on flowers, storage of moist flowers must be avoided as even under ULO conditions fungus may continue to thrive. Pre- and post-treatment of the stems using flower food (Chrysal/Florissant) is also recommended. Regarding costs and benefits, Van Leeuwen stressed that the maths still needs to be done. However, he believes that a profitable business model for ULO-stored peonies is possible, though profits will depend on pricing and quality at the time of marketing the flowers.

SPRAY DRIFT

Spray drift, defined as the movement of a crop protection product through the air to a location other than the site intended, has come under scrutiny in the past year with new Dutch legislation currently under way. Adriaan van de Veen of Agricult explained the benefits of the new LVS NK80LT nozzle which his company sells to farmers and nursery stock growers. Six years ago, Van de Veen began promoting this high precision low drift nozzle to peony growers. He explained that spray drift is less likely to occur when applying pesti-



'Mr. Jules Elie' 4 days after coming out of a 14-week ULO-storage. Flowers open remarkably well.



This is how 'Mr. Jules Elie' looks following a 14-week ULO-storage. Pictured right are conventionally stored peonies.

cides with droplets of 100 microns and that are larger in size. Independent research conducted at Belgium's government institute for agricultural fisheries research (ILVO) revealed that the company's low-drift nozzle produces significantly less drift-prone droplets than the standard flat-fan nozzle. Highly uniform droplets are distributed to the ground in the same effect of a fertiliser-spreader with the majority of droplets belonging to the 'coarse' (218–349 micron) category. The nozzle produces very few droplets larger than 400 micron, reducing both water use and the risk of water rolling off the leaves.

DRIP IRRIGATION

Speaking of water, with the never-ending summer of 2018 fresh in everyone's minds, the presentation of Koos in 't Hout, sales representative of Tijn Mechanisatie, on drip

irrigation in peonies piqued a lot of interest. Heatwaves across the Netherlands led to hosepipe bans which put pressure on peony farmers whose crops were affected by the dry conditions. Drip irrigation has the potential to save water and nutrients in many crops. Back in 2007, Tijn Mechanisatie learned the ropes in blue berry cultivation followed six years later by an extensive drip irrigation project in seed potatoes in Gambia and Uganda. In 't Hout explained how a €700/ha investment in drip irrigation led to 1000–1500 kg/ha higher yields. In Africa, Tijn Mechanisatie uses the relatively cheap drip tape but advised present peony growers to search in a thickness range which is higher as this type of tape is more suited for annual crops and sensitive to damage from small rodents which may gnaw on the tape and cause leaks. According to In 't Hout one of the best options in peonies would be Toro's Aqua-Traxx drip line whose seamless construction provides maximum strength. Moreover, Aqua-Traxx stands out for its superior precision, uniformity, durability and plugging resistance. T Hout advises to inject 2 lines per row, below the planting bed about 4 to 5 cms deep. Only Aqua Traxx has the two blue stripes -- they are a signature of quality and ensure proper installation. When the blue stripes are facing up you know the tape is installed in the proper direction. Drip irrigation operates at low pressure and fertilisers can be applied to the roots along with the water eliminating the need for application by tractor.

DELPHY DEMONSTRATES RESEARCH IN PRACTICE

Last summer, Delphy, the Dutch service provider for cultivators around the world (formerly known as DLV) put research into practice with a knowledge sharing initiative for peony growers.

A demonstration for farmers was run on peony farm Mts Bergsma in Boyl, Netherlands, where drip irrigation was installed under a two-year peony crop. Peonies are an increasingly popular crop to grow with farmers in the Boyl area which once belonged to the so-called Veenkolonien, turbaries where peat cutters worked hard and lived a harsh life. Peony farmer Jacques Bergsma is delighted with the first results of drip-irrigated peonies under rather challenging circumstances as Holland endured an extremely long period of drought last summer. Bergsma explains that setting up the drip irrigation system was rather easy and that he carried out the task with the help of a somewhat retooled planting machine. "Everything was working appropriately and the system has made work a lot easier. Juggling around with reels and sprinklers was no longer necessary. RMA sensors told me when the plants needed water. There isn't a water meter but I think that water usage was only half compared to using the traditional reel or sprinkler," said Bergsma. Delphy consultants Sigrid Arends and Harm de Boer van Delphy saw how healthy and sturdy the crop looked this August. One-year old cuttings already displayed a well-developed root system. Bergsma is now looking for possibilities to fertilise his crop using the drip irrigation system, which can be of use especially at the start of the growing season before cuttings have developed any roots. He says he will expand the production area under drip irrigation. Delphy assists cultivators, provides training programmes and gives advice on-site and online. The company uses modern technologies and employs a team of 200 consultants and crop experts whose know-how extends to nearly all agricultural fields. Delphy derives from the classic antiquity Delphi, where people met with questions about crops, fertility and harvest.



A demonstration for farmers was run on peony farm Mts Bergsma in Boyl, Netherlands, where drip irrigation was installed under a two-year peony crop.

DWARF shrubs with BIG impact

Small shrubs for small gardens: that was the goal of four years of research by ILVO-Ghent University researcher Hanne Denaeghel. She is known for her pioneering work using advanced breeding techniques on woody plants.



Escallonia rubra, mother stock plant in the field.

discussed with BestSelect CVBA growers. Moreover, the successful applications of the advanced breeding techniques utilised open up possibilities for further breeding of other woody ornamental plants. Denaeghel defended her doctorate 'Advanced Breeding Techniques for Inducing Variation in Woody Ornamental Plants' at Ghent's Campus Coupure in June 2018. Her doctoral advisors are Prof. Dr. Marie-Christine Van Labeke, Faculty of Bioscience Engineering, Ghent University and Dr. Katrijn Van Laere from ILVO, Flanders' Institute for Agricultural and Fisheries Research.

RISING DEMAND FOR DWARF SHRUBS

Sarcococca, also known as sweet box or Christmas box, is an evergreen shrub with fragrant flowers in winter. Escallonia is also an evergreen shrub with a long flowering period. The names may not be familiar, but that will change soon enough: the growers of BestSelect CVBA, a joint venture of Flemish ornamental growers, see a lot of potential in these shrubs for use in small gardens. As gardens become smaller and smaller, the demand for new varieties of compact ornamental plants increases. Furthermore, Sarcococca



'Hairy roots' appear following an experiment in co-cultivation using rhizogenic bacteria and are used to regenerate plants.



Two plants following chromosome doubling with treated plant (left) and untreated control plant.



Tissue culture stock of Escallonia, starting material for all experiments.



Compact seedlings obtained by cross breeding two different species.

is a great alternative to box, prone to the dreaded box blight. But there is a problem: breeding of these woody ornamental plants has been limited. Thanks to Hanne Denaeghel's research, this may soon change: she applied molecular and in vitro methods for the first time to these ornamental shrubs and, in doing so, is able to produce new varieties for further development by growers.

RESEARCH OFFERS BREAKTHROUGH

Denaeghel's research clearly shows that there is a lot of potential in the application of polyploidisation, an increase in the number of chromosomes. For example, tetraploid Escallonia genotypes were developed in which variation arose in compactness, size of the flowers and cold tolerance. The introduction of rol-genes, that is, genes from the soil bacterium Agrobacterium, also proved to have potential.

Introduction of these genes causes the growth of 'hairy roots' at the site of infection. Regenerating new plants from these hairy roots is the next challenge. Finally, the technique of interspecific hybridisation also proved successful for Sarcococca. In this technique, different species are crossed with each other. This process also occurs to a certain extent in nature, but is now done in a targeted manner with genetically screened parent plants. Field-grown seedlings of the first generation are now evaluated more extensively as breeding material and potential new cultivars.

THOROUGH SCREENING

All existing and new variants are thoroughly screened for their characteristics. To do this in a standardised way for a large number of plants, Denaeghel developed a new image analysis system. This is frequently used in larger crops such as rice and maize, but rarely

in the breeding of woody species. This is due, in part, to the high cost of the equipment needed as well as the large variability in the range of ornamental plants. As a result, the equipment is rarely suitable for several genera. The tool developed at ILVO is, however, simple, cheap and widely applicable: with an empty room, a camera and a computer for analysing photos, you can get started right away. "With this system we can display morphological properties in figures in a very objective way. For example, we can now assign a value to the plant's fullness. Especially for parameters related to plant archi-

'ESPECIALLY FOR PARAMETERS RELATED TO PLANT ARCHITECTURE THIS IS AN ENORMOUS ADDED VALUE IN THE EVALUATION OF PLANTS AND CULTIVARS'

ture this is an enormous added value in the evaluation of plants and cultivars," explained Denaeghel.

HUGE POTENTIAL

This research came about as a result of demand from the tree nursery sector for the renewal and expansion of the current range of compact ornamental shrubs, specifically Sarcococca and Escallonia. The plants from this study with desirable characteristics such as compactness, health and cold tolerance will be commercialised by the growers of BestSelect CVBA. The introduction of novel plants is expected within four to six years. The successful application of the advanced breeding techniques used and the development of the new image analysis system also open up possibilities for further breeding of other woody ornamental plants.

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Denaeghel's study focused on two fairly unknown and less intensively-bred shrubs: Escallonia and Sarcococca (sweet box). Through techniques such as interspecific hybridisation, polyploidisation and co-cultivation with rhizogenic Agrobacterium strains, the researcher created new, interesting variations for the further development of visually appealing and/or healthier plants. The outcome of Denaeghel's research will be

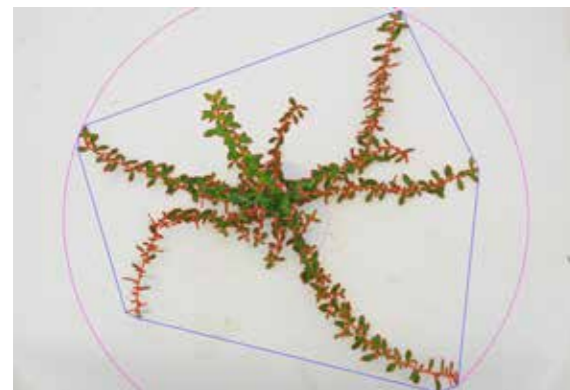


Image analysis. Parameters are marked and provide information regarding the 'bushiness' and compactness of plants.

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Research facility in Chinese Taipei nears completion

Dutch-based greenhouse constructor Bosman Van Zaal, working with Westlandse Project Combinatie have spent the last six months providing a complete turnkey laboratory construction solution for CH Biotech in Nantou, Chinese Taipei.

CH Biotech develops and innovates agrochemical products to meet the challenges of climate change and a growing world population. With a strong line of crop and environmentally friendly products, they strive to make a difference in crop yields, food safety and sustainability in agriculture. Bosman Van Zaal established a research centre where plant genes and environmentally friendly, active ingredients (AI) are arranged. The result is products such as plant growth regulators, growth-promoting agents and powerful fertilizers that are more efficient and effective. The construction contract was signed one year ago after which Bosman Van Zaal began building two Venlo-type greenhouses. The earthquake-resistant glasshouse structure is painted white and fitted with special glass to cater for optimal air flow and light distribution. In addition, the greenhouse is equipped with Bosman Van Zaal's own water, electricity, climate and cultivation systems, including ebb and flow benches, silos, fog systems, pad & fan and drip irrigation, LED lighting, vapor and UV resistant insulation, electric heaters and double ventilation air coolers. A Hoogendoorn climate computer offers complete control and insight into crop conditions.



PLASTIC THE NEW TOBACCO?

Kim van Rijssen works for Plantipp BV, a Dutch company specialising in royalty management. Kim spent eight years in Beijing.

Working with new plant varieties is intrinsically linked to innovation. We as Plantipp are always looking into the future: what are growers and consumers looking for in a plant? What are the trends in home gardening and landscaping? How can we generate long-term, maximized sales of a new variety? One important part of the solution is marketing.

Last year, we launched Photinia fraseri Chico ('BR2011'): a dwarf, ball-shaped variety with fine, bronze leaves. We teamed up with the breeder to develop a marketing campaign highlighting the shrub's finest quality and visual appeal. Chico is supplied in a bright-colored pot with the logo printed on its side and an attractive colour label with a picture and description.

If marketing is one trend in the plant sector, sustainability is another and both seem contradictory nowadays. Using a printed pot with a glossy label means more plastic. Plastic is slowly becoming the new tobacco and it will not be an acceptable material to use in the future.

Last year, the EU presented its Plastics Strategy. Currently, less than 30% of plastic waste in the EU is recycled. One goal is to increase this percentage by having a more advanced and cost-effective system to collect, sort and recycle plastic waste in the EU. Another is to look for alternative materials. But it's also an important consideration for trade, particularly as countries such as China have banned imports on most plastic waste from abroad.

Investigating alternatives I met with Floramedia, the largest label producer in the EU. They recently presented their Green White Paper on sustainable plant labels. Most labels are now made from virgin plastic, meaning newly manufactured and made from fossil fuels. Floramedia aims to have 100% of their labels made from alternative materials by 2030. Step one is using recyclable plastic. Step two is using an alternative material that is both sustainable and recyclable. "Which material that will be," says Juriaan Rolink of Floramedia, "depends partly on what material the food and beverage industry will use for their packaging as this will then become the affordable, mainstream alternative to virgin plastic."

When I visit a garden centre, I am drawn by eco-friendly products (the debatable concept of 'conscious shopping'). But I also like glossy and bright packaging. I'm excited that the current trend is a combination of this. Sustainability no longer has a stuffy image. In the future, we can buy plants in attractive, recyclable or biodegradable pots with renewable labels. When we promote a new plant variety, we can include sustainability as part of the marketing concept. Innovation at its best!

The global ornamental business enjoys a good networking and learning opportunity along with a novelty showcase in mid-winter, when it's already having its initial growth spurt. With plants, horticultural technology, accessories and floristry under one roof, Germany's IPM ESSEN show, held January 22-25 at the updated Messe Essen is the place to be.

Hosting the 2019 IPM ESSEN opening ceremony on Tuesday morning January 22nd was TV presenter Susan Link, who hit German screens with the MOMA morning show. Link asked Helmuth Prinz of the German Florist Association (FDF) about the importance of the IPM show. Prinz emphasised that FDF members come to IPM ESSEN to pick up trend information and to be inspired by the many floral design competitions. This year the competitions took place under the guidance of Michael Liebrich from Baden-Württemberg, named Germany's best flower arranger of 2018. He shared the stage with renowned floral designers Frédéric Dupré (France), Sara-Lisa Ludvigsson (Sweden), Hanneke Frankema and Hans Zijlstra (Netherlands), Tomasz Max Kuczynski (Poland) as well as with Ahti Lyra (Estonia). An absolute crowd pleaser was the Fleuramour floral design show, inspired by the annual Alden Biesen (Belgium) based floral design show along with the fast-paced Flower Battles on Wednesday. According to Liebrich, the stars of all the shows in Hall 1A are hand-tulips, Ranunculus and Chrysanthemums which have risen lately in popularity in Germany.

Germany's Federal Association of Horticulture (ZVG) chairman Jürgen Mertz reported that Germany experienced one of its hottest and driest summers on record which not only wreaked havoc in field crops but also took its toll on plant and flower sales. Not mentioning of course the sizzling furniture and BBQ sales in garden retail! The clear losers of 2018 are fresh cut flowers with plummeting sales from June all through September. In contrast, potted herbs, bulbs and tropical foliage plants continued to be a firm favourite with German consumers. In nursery stock, sales remained more or less



QUICK FACTS

53,000 trade visitors
40% of visitors from outside Germany
1,546 exhibitors from 46 countries
64% of exhibitors from outside Germany
105,000m²
Venue: Messe Essen
37th edition

**Icing on the Primula**

Entries in thick and fast with over 58 novelty plants submitted by 31 exhibitors in eight categories announced ahead of IPM's official opening. Deservedly winning the first prize in the Spring Flowering Plants category was Primula Belarina 'Candy Frost' from Cambridgeshire-based plant breeder Kerley & Co (marketed through Kientzler). It features striking double flowers in lilac with ice-white edgings.

**Striking strawflowers**

MNP Flowers submitted Xerochrysum bracteatum Granvia® 'Gold' featuring flowers with a straw-like texture. With its large flowers, really different than other strawflower varieties, it scooped up the first prize in the Bedding and Balcony Plants category. Long lasting flowers rise above large green foliage which nicely contrast with the bright flower colour.

Mouse ears

The most attractive flowering house plant was Euphorbia pulcherrima Christmas Mouse® from Selecta Klemm in Stuttgart. If you are done with the conventional Poinsettia it's worth taking a look at this novelty plant. Its unusually rounded bracts look like the ears of a mouse.

**In the jungle.. the ferny jungle**

Walking away with the highest accolade in the Tropical Foliage Plant Category was Blechnum brasiliense 'Copper Crisp' submitted by Cultivaris. 'Copper Crisp' is the perfect answer to the booming houseplant sales in garden centres. It's very trendy and echoes a jungle atmosphere. This unconventional house fern is convincing with its red buds and the firm, extremely ruffled, deep-green fronds and forms a small stem over time.

stable. Mertz said that under these testing circumstances he was quite surprised to see that 2018 ended with a 0.5% growth in turnover and a market volume of € 8.7 billion.

Belgium was this year's Partner Country. As such, His Excellency Baron Willem van de Voorde, ambassador to Belgium in Germany, used his welcome address to refer to the strong contingent of over 70 Belgian exhibitors at this year's IPM. He made particular reference to Flanders as the country's horticultural heartland producing over 90% of all flowers and plants. Belgium has a field production area of 6000 ha and a greenhouse production of 500 ha with its nursery stock sector standing out as a producer of a wide variety of trees and shrubs. He completed his speech by inviting Messe Essen's CEO Oliver P. Kurt onto the stage to present him an engraved spade.

Subsequently, Mertz, chairman of the trade association Landesverbandes Gartenbau Rheinland Eva Kähler-Theuerkauf, Dr. Heinrich Bottermann, State Secretary for the Nordrhein Westfalen's Ministry of Environment, Agriculture and Nature and Hans-Joachim Fuchtel, State Secretary of the Ministry of

Agriculture debated challenges and opportunities of digitalisation within the supply chain, diminishing crop protection products options and climate change. All of them joined forces to cut the ribbon on stage.

After the IPM show was declared open, Van de Voorde, along with dignitaries including Zentralverband Gartenbau (ZVG) chairman Jürgen Mertz and Essen's Mayor Mr Thomas Kufen, toured the 105,000m² show floor where they were treated to the latest plant breeding breakthroughs and revolutionary technology.

The mood was truly upbeat with 1,546 exhibitors from 46 nations presenting their new products and services. IPM ESSEN 2019 attracted 53,000 visitors (for comparison 2017: 54,000, in 2016: 57,200) with winter weather putting undoubtingly a damper on attendance figures. The four-day event was truly international, hosting not just exhibitors from Europe, but also from North and South America, Asia and Australia. Over 64 percent of the exhibitors and 40 percent of the visitors came from abroad.

Visitors were treated to modern design and contemporary meeting and work spaces in the recently completed Phase One of Messe Essen's modernisation project.

A Great Year for Belgium Mums

Belgium breeder and propagator of potted Chrysanthemums, Gediflora, was crowned the AIPH International Grower of the Year (IGOTY) 2019 at the prestigious industry award ceremony held at IPM ESSEN on 22nd January.

The Gold Rose, presented by Steven van Schilfgaarde, CEO of Royal FloraHolland was awarded based on the jury's assessment that "Gediflora excels in its field and is true to its motto: Dream, dare, do and do better". As a well-established, third-generation business, Gediflora serves more than 30 countries with over 50% market share in Europe and 30% in the US.

THE IGOTY 2019 WINNERS

Young Plants: Gold: Gediflora, Belgium. Silver: Clematis The Source of Good Climbers, Poland. Bronze: Sichuan Colorlink Co. Ltd. China.

Finished Plants & Trees: Gold: Clematis The Source of Good Climbers, Poland. Silver: OK Plant, the Netherlands. Bronze: Fujian Hongzhan Landscape Engineering Co. Ltd. China.

Cut Flowers and Bulbs: Gold: Oserian Development Company Limited, Kenya. Silver: Jiangsu Zhonghe Flowers Co. Ltd. China.

Sustainability: Gold: Inner Mongolia M*Grass Ecological Environment (Group) Co. Ltd. China. Silver: Butterfly Garden, Denmark.

The 11th IGOTY Awards will be held in January 2020 at IPM ESSEN, Germany.



IGOTY AWARDS 2020 - ENTRY OPEN

Entrance categories: Cut Flowers & Bulbs, Finished Plants & Trees, Young plants, Sustainability, Inspiring Business. Entry opens: March 2019. Entry closes: July 2019

How to enter: www.aiph.org/groweroftheyear for details. Contact: sg@aiph.org

MARCH 2019

1-11. CHINESE TAIPEI

Orchid Land, 2019 Chinese Taipei International Orchid Show. www.tiostw.com

13-15. ETHIOPIA

Hortiflora Expo Addis Ababa. www.hpp.nl

13-15. VIETNAM

Hortex Vietnam 2019 at the Saigon Exhibition and Convention Centre (SECC) in Ho Chi Minh City. www.secc.com.vn

17-19. CHINA

China International Floriculture & Horticulture Trade Fair at Guangzhou's International Sourcing Centre Complex. www.flowerexpochina.com

20-22. NETHERLANDS

Tulip Trade Event. www.tuliptradeevent.nl

21 MARCH-19 MAY. NETHERLANDS

Keukenhof, one of the world's most beautiful spring gardens. www.keukenhof.nl

20-22. UNITED STATES

World Floral Expo in Dallas. www.hpp.nl

APRIL 2019

1-4. NETHERLANDS

AIPH Spring Meeting including the Sustainability Conference to be held on the April 2. www.aiph.org

1 APRIL-31 OCTOBER. ITALY

RadicePura garden festival at Pianta Faro in Sicily. www.radicepurafestival.com

20-22. CHINA

Hortiflorexpo IPM China www.hfexpo.org/ www.ipm-essen.de/welt-leitmesse/ipm-worldwide/hortiflorexpo-ipm/

25-27. IRAN

Iran Green Trade Fair at Iran's International Permanent Fairground www.hpp.nl

RadicePura garden festival taking root in Sicily

Father and son Venerando and Mario Faro, owners of Sicily-based Pianta Faro, one of Europe's premier plant nurseries, started the annual RadicePura garden festival in 2017. This year's event, running from April 1- October 31, 2019, will again draw landscaping professionals, plant and flower aficionados and Italophiles from all over the world.

Inspired by the Chaumont-sur-Loire garden festival, RadicePura (pure roots) is a dual consumer and trade event that is all about the Mediterranean experience. From the outset, multiple gold medal winning landscape designer Sarah Eberle from the UK is *madrina* (godmother) of the show, providing support and mentoring those involved. She says, "The plants in this region have fascinated me for years. The festival has everything about outdoor life style and it is important to

protect our Mediterranean landscapes which could be at risk in the future."

Nestled at the foot of Mount Etna, the setting is idyllic with the 600 ha park providing the perfect backdrop for an number of show gardens designed by international designers and smaller gardens designed by landscape students. RadicePura celebrates all things Mediterranean and is an opportunity to sample Italian food and wine.

WWW.RADICEPURAFESTIVAL.COM

29 APRIL - 7 OCTOBER. CHINA

Expo 2019 Beijing www.horti-expo2019.org

MAY 2019

1-3 KOREA

XIII International Symposium on Flower Bulbs and Herbaceous Perennials (ISFBHP) at the Grand Ambassador hotel in Seoul, Korea. www.flowerbulb2019.org

8-19. FRANCE

Floralies, the 12th edition of the Floralies Nantes will take place at the Parc de la Beaujoire Convention Centre in Nantes. www.comite-des-floralies.com

13-14. NETHERLANDS

Horticultural Lighting Conference at the Jaarbeurs Convention Centre in Utrecht, Netherlands. www.horticulture-lightingconference.com

19-24 BELGIUM

V International Symposium on Postharvest Technology at the Academic Hall of the Liège Université. <https://events.uliege.be/postharvest2019/programme/>

JUNE 2019

4-7. NETHERLANDS

Dutch Lily Days www.dutchlilydays.nl

5-7. KENYA

IFTEX, International Floriculture Trade Expo at Nairobi's Oshwal Centre. www.hpp.nl

11-13. NETHERLANDS

FCI Tours. Professional visits in the Westland region. www.aiph.org/aiph-events/fci-tours

11-13. NETHERLANDS

GreenTech, the world's leading horticultural technology show. www.greentech.nl

11-14. NETHERLANDS

FlowerTrials®, open house event for the pot and bedding plant industry. www.flowertrials.com

JULY 2019

13-16. UNITED STATES

Cultivate'19 will be held in Columbus, Ohio. www.cultivate19.org

AUGUST 2019

21-23. NETHERLANDS

Plantarium, international nursery trade fair. www.plantarium.nl

SEPTEMBER 2019

5-7. POLAND

Green is Life. Poland's leading nursery trade fair in Warsaw. www.greenislife.pl

10-12. FRANCE

Salon du Végétal, France's leading horticultural trade show will take place at the Beaujoire exhibition centre in Nantes. New dates!! www.salonduvegetal.com

8-11. CHINA

AIPH Annual Congress, Beijing, China including the AIPH International Green City Conference to be held on the September 10. www.aiph.org

10-12. RUSSIA

FlowersExpo at Crocus Expo. www.flowers-expo.ru

26-28. ITALY

Flormart at the PadovaFiere Exhibition Centre. www.flormart.it

AUGUST 2022

14-20. FRANCE

International Horticultural Congress, IHC2022 in Angers, France. www.ihc2022.org



ADDIO CARLO CALÌ

Dottore Carlo Cali, the brainchild and driving force behind the international Silver Carnation Awards, held annually in Giarre, Sicily, died in the same town, on January 17, 2019 following a long illness. He was 89 years old.

Recognised as founder of the prestigious Silver Carnation Awards, known in Italian as *Il Garofano d'Argento*, Carlo Cali is one of the pioneers of ornamental horticulture that thrives so well on the fertile ground surrounding Mount Etna and Catania.

The *Garofano d'Argento* is rooted in Cali's motherland, one of Sicily's most beautiful areas where it's hard to miss the majestic silhouette of Mount Etna. The volcano that so many Sicilians are deeply and personally connected with is rather affectionately nicknamed the *Gigante Buono* (Good Giant), to indicate that, despite its eruptions over the past centuries, Etna has never caused any severe damage to the people who populate its slopes. Here, autumns and winters are wet and the summers are very dry. It is varied microclimate that is so conducive for growing of a wide range of ornamentals: trees, shrubs, cut flowers and everything in between.

Several combining factors led to the rise of Catania as one of the island's major plant producing provinces with its *Garofano d'Argento* to recognise excellence and innovation in floriculture and supporting its fields.

Firstly, it's significant to appreciate that, that, although Cali had little knowledge of the horticulture industry when he was working in Giarre as a council member, he did, however, possess a fervent attachment to his homeland and the astuteness to notice important developments in agriculture, the economy and social policy.

In 1956, Giarre's annual "Cherry and Rose Festival" made its debut at *Piazzetta della Frazione Trepunti* but it went in to decline from the start. When mister Papa and Mr Capilli (two brothers-in-law from Giarre) returned from Sanremo, where they had started producing carnations, they were convinced that Sicily's flower industry was in need of a new event. So was Cali, who realised that floriculture had become a vital part of the island's agriculture with enormous potential for growth. Thus, in 1975, Giarre hosted its first *Festa dei Fiori* event endorsed by the *Associazione Culturale i Fiori di Giarre e dell'Etna*, whose primary task was to promote ornamental horticulture and tourism.

Meanwhile Cali, wanting to become personally acquainted with horticultural entrepreneurs, started to visit the companies that nestled Mount Etna. This is how he met Ignazio Continella who later was also recognised as one of the pioneers of Sicily's ornamentals sector thanks to his beautiful potted ornamental citrus. Cali shook hands with the illustrious nursery stock grower Alfio Leotta and after three years he invited Venerando Faro (owner of

what is today considered one of Europe's premier plant growers) to bolster the position of the *Festa dei Fiori* flower festival. Initially, Cali wanted to install two awards: The Golden Rose and The Silver Carnation, but the initiative was hindered by a lack of finance. In 1977, his Silver Carnation Award was eventually registered and officially recognised resulting in the first five *Garofano d'Argento* winners the following year.

In 1990, *Dottore* Giuseppino Roberto, secretary-general of the Fiera di Genova and organiser of the Euroflora show was presented with the *Garofano d'Argento* allowing Sicilian growers to strengthen trade ties with the international horticultural community who were, at that time, largely represented at Euroflora. Over past decades more than 350 *Garofano d'Argento* awards have been presented to people who have made a significant contribution to the Italian and international flower industry. Among the horticultural award winners are Robert F. Zurel, Wim van Meeuwen, Jan Petiet, Pierre Barandou, Nancy Laws, Egon Galinnis, Jochen Henneke, Jaap Kras, Ron van der Ploeg, Nobel Prize winner Francesco Bruno Gnisci, Ester Nunziata, myself and many others.

In the last few years, the *Garofano d'Argento* Awards have expanded beyond the floriculture sector. Today award winners can also be found in the fields of business management, journalism, medicine, public governance, art, entertainment and charity.

The sole purpose of the horticultural category of the awards is to welcome industry professionals, from home and abroad, to Giarre to meet growers in person and give them a clear picture of the size, professionalism and hospitality of the ornamentals sector.

Carlo Cali and the organising team truly deserve credit for helping Sicilian businesses to grow and promote the beauty of the island of Sicily. Above all, the event has been highly effective in creating true perspectives and dispelling prejudice, stereotypes and fake news.

The organisation of the awards will continue in the hands of the aforementioned *Associazione* with Carlo's daughter Carmelita as president and for whom it is a real honour to continue her father's ground-breaking work.

Grazie Carlo for your "crystal-clear craziness" that has helped us to be better people.

Sempre Viva La Vita
Arturo Croci

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TOURS

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AIPH

Westland Region Tour
The Netherlands, 11 – 13 June 2019

Tuesday 11 June

Anthura
Beekenkamp Breeding
Schneider B.V.
Lily Looks

Wednesday 12 June

GreenTech
HORTICULTURE'S FOREFRONT

Thursday 13 June

Royal FloraHolland
Ter Laak Orchids
LMC Chrysanten
Fransen Roses
Dynaplant

Enjoy visits to leading ornamentals producers and the international trade show GreenTech.

The tour programme includes:

Accommodation for three nights with breakfast (10th – 12th June inclusive) at Mercure Hotel, The Hague.

Transportation for visits with a tour

guide to nurseries (11th and 13th June), coffee/tea at nursery visits and lunch.

Entry and transportation to GreenTech (12th June).

Price per person: €975 (inclusive of VAT and taxes, based on single room occupancy, additional €30 per night for double occupancy).

Places are limited for this special tour and will be reserved on a first come/first served basis. Book early to avoid disappointment.

Booking closes 15th April 2019.

FCI Tours is organised in partnership with the International Association of Horticultural Producers (AIPH) and in collaboration with GreenTech RAI, Amsterdam.

Find out more at: www.aiph.org

For booking details and further information visit the AIPH website: www.aiph.org or contact: Treve Evans Tel: +44 (0) 1235 776160 | Email: treve.evans@aiph.org

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