

ANTHURINFO



140 cut flowers per m²
How do you
achieve this?

An inspiring interview with
the Van Leeuwen brothers
from De Lier, Holland

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**Warm colour
with an exclusive
appearance**



**Three pink
acquisitions in the
Big American series**



**Hygiene in the
Anthurium and
Phalaenopsis
cultivation**

A warm copper-red orchid for the enthusiasts

Since the beginning of 2015, the new variety Anthura Narbonne has been a regular feature in our showroom. The variety is named after the Mediterranean coastal city.

The colour can best be described as a warm copper-red. It is a colour with an exclusive appearance, especially wanted by stylists.

The performance of Narbonne is excellent. The variety grows easily, featuring a high uniformity. At a normal growing duration of 26 weeks, it produces a high percentage of plants with several spikes. The dark brown branch colour delivers a beautiful contrast with the flower colour. Narbonne has a plant height of about 60 cm and a flower size of 8 cm.

The power of Phalaenopsis is its unrivalled diversity of colours and forms. There's no doubt that a new variety like Narbonne with its special colour is a contribution to this range!

For the gourmets

You are cordially invited to visit this new Mediterranean namesake in our showroom. Test numbers are available on a small scale. Ask your area manager for details.

Robert Kuijf

Product Manager Orchids



Anthura Narbonne (PHALIFQUDI)

 Colour	REDRX
 Flower size	8 cm
 Height	60 cm
 Pot size	12 cm



Carisma, a new red favourite

The popularity of red is enormous and newcomers will have to comply with high standards to be able to compete with the top red varieties.

Today, people are longing more and more for purity and experience. Carisma® is a flower with more than just a lovely appearance. The pride of the flower is also reflected in the considerable flower size and the bright red colour. This cut Anthurium, full of character, features a high production and has a long shelf life.

As a result of the alterations of Anthura Flower, a new test bed was created at the beginning of 2015. Last summer, these flowers also achieved their size rapidly, with an abundance of 10 cm and 12 cm blooms.

Great test results

Test results at Anthura Flower show positive figures in terms of both production and quality. The old test bed (grubbed up in 2014) delivered well, with numbers exceeding 100 pieces/m² (YLB) for many years. By allowing cuttings in this test bed, production increased even more, with flowers ranging from 10 cm to 20 cm. It is interesting to note that the flowers reached their size rather easily in the summer months too.

New favourite

Carisma takes up a beautiful position next to Tropical®. Together with our Area Managers you can study whether Carisma is also the ideal product-market combination for you.





Finally, a tip for growers in Europe: if you plant a slightly larger plant early in the year, you can still enjoy good prices at the end of October for All Saints' Day.

Hans Prins

Sales and Product Manager Anthurium



Carisma® (ANTHARES)

 Colour	red
 Flower size	13-15 cm
 Production per gross m ² /year	100 flowers
 Shelf life	26 days





Peter, Aad en Ben van Leeuwen

140 Midori per m²: how do you achieve this?

- an interview with the Van Leeuwen brothers -

The company of Peter, Ben and Aad Van Leeuwen is located in the middle of the Westland. In 1991 the company changed from growing roses to the cultivation of Anthuriums. In 2003 they were forced to move due to housing development plans and they built a modern greenhouse in De Lier. In their case, the structure of the farm and the choice of varieties differ from the 'normal' Dutch standards. Another interesting aspect, and also the reason for this interview, is their record production of more than 140 Midori® Anthurium cut flowers.

Three brothers, three departments and three varieties. How did you achieve this?

Before changing to Anthurium, we were growing roses. We already owned two companies, but we did not want to go along with the upscaling that was starting in the rose cultivation segment. Lighting, a seven-day week and pest control were other determining aspects in our choice.

At that time, our neighbour was growing Anthurium. We were able to take over Lunette cut Anthurium plants and thus started with one company. Later on, we found out that other plans existed for the region where we were established then. Next, we started in De Lier by buying two smaller companies. On the available surface, we built a completely new 15,000 m² company, with three departments in order to steer the company better. In 2009 the first department was replaced (with Tropical®) and in 2013 and 2014 the second department followed (with Midori®). The last department (the old Tropical

plant) will be replaced in 2017. We selected basic varieties, Tropical and Midori. In addition, we also opted for a for us new variety: Calisto®. The efficient set-up was reinforced when we started with flow packs, packing shortly after finishing the new construction. The range of varieties at that time was also related to our decision to start with 'flow packing'.

What is your mutual division of duties?

In addition to our own individual responsibilities, we have one important joint responsibility and ambition: in our business operations, we strive to arrange everything down to the smallest detail. This does not only imply optimal production, but also good organisation on all fronts, as a result of which there is clarity for everybody, everything is neatly organised and tranquillity prevails. You won't catch us slacking on the last hour of work. You would only make it difficult for yourself and lag behind.



Midori® in the greenhouse with the Van Leeuwen brothers - Dec 2015

As far as our division of duties is concerned, Peter is responsible for the climate, auction/sales matters and organisation in the warehouse, Aad for the bookkeeping, irrigation and personnel, and Ben organizes everything in the greenhouse, like crops, plant treatments, etc.

Which major changes occurred in the past 20 years and how do you look back on them?

Over the last 20 years there have been substantial changes in the cultivation of Anthurium. The production per square metre has increased considerably. In addition, young leaf breaking has been an important development. A practical advantage is

that this produces less leaf wastage and it is a fairly simple leaf treatment. When breaking young leaves, it comes down to a good explanation and especially to experience. But the most important thing of young leaf breaking is that it increases production.

A third important change lies in the cost structure. Costs have increased, but on the other hand, we have also started working in a more cost-efficient way. By applying another screen strategy (the use of plastic and energy screens), we are saving a lot of energy. In the past, 40m³ gas/m² was the average consumption, nowadays it is 20m³ gas/m².

We regret that the development of flow packing has come to a halt. We are still packing Anthurium in the traditional way. A few years ago we also stopped with flow packing.

Cultivating only two varieties is fairly unique. Why have you chosen to specialise and how do you distinguish yourselves on the market?

We come from a background of flow packing and basic colours. Flow packing of white or pink varieties is a lot more difficult, because of the greater risk of damage. Therefore we excluded these. A lot of growers try to distinguish themselves by their assortment, a development which was emphasized in the last three to four years due to the crisis. We distinguish ourselves by good quality and the availability of large volumes. You always get the same box with us. In our sales market we have built up a good reputation very quickly. We have been delivering Anthurium to a number of regular, loyal clients for years now. Besides, we are well recognisable on the market with our brand image: the lion!

In 2015 you achieved production of more than 140 Midori/m². Which conditions do you have to comply with to reach this target?

The secret lies in the sum of the starting points within our cultivation segment. First of all, we strive for a flower size of 16 and 12, i.e. 16 or 12 flowers per standard FC690 box. Of course, you have to start with a good plant, which is what you undoubtedly deliver. In our cultivation segment we work with a pot system in which every pot receives the same amount of water. It has cost us some work, but we have not allowed just any cuttings, only top cuttings. We started with 16 plants/m² and by the end of the first year we achieved about 30 plants/m². The number of plants and the fact that we are able to control a separate department are the main conditions to come close. We also have a diffuse sun screen installed in the greenhouse. As a result, in the first year we might have allowed

in slightly too much light. That's why we chalked it a bit in the second year. Our adviser also visits us more often than usual. The production of 140 flowers per m² is quite something and we are very proud of it.

What do you base the choice of varieties upon and which choice have you made as regards Tropical?

The 'old' Tropical needs replacement. An important feature of a variety is good production, i.e. at least 100 pieces/m². Shelf life is also an important element, because we want to deliver a reliable product. We also look for a flower with a clear, bright colour and a beautiful look. The result must be simply a beautiful box of flowers, which is what our customers are looking for in the end. Of course, other characteristics also count. A short plant is practical and the flower has to be easy to pack. Production is in proportion to the mid-price. Lower production is possible, but then the mid-price must be increased. The consequence is that you end up in the exclusive varieties. We opted for this strategy, so exclusive varieties do not fit in.

Sales are expected to change drastically in the next five years. Trading parties are investing a lot in the development of online sales (Business to Business). What do you expect to be the major challenge for your company and how are you anticipating this?

The auction clock is very important for our company. The major challenge is to set up together a chain as efficiently as possible. We are located relatively near the auction and are responding to this by participating in auction pre-sales. Our customers can place orders at a predetermined price before the auction. Maintaining close contact with your customers is and will continue to be very important.

Hans Prins

Sales-en Productmanager Anthurium



Fair impressions

Recent months, Anthura participated in various international trade shows, both inside and outside Europe. We put your varieties world-wide in the spotlight. Unlimited in varieties offering unlimited possibilities.



Impression of FloraHolland Trade Fair in Holland – November 2015



Flowers Istanbul in Turkey – November 2015



Winterfair in Holland – January 2016



TPPE in Florida, USA – January 2016



IPM in Germany – January 2016



Salon du Végétal in France – February 2016

Colorado, Maine and California, the ladies of the Big American series

The Big American series has expanded with three big stars. These new large-flowered pink varieties are certainly a match for each other, and we introduce all three of them.

Growing conditions differ worldwide and the performance of varieties can be related to this. This also applies to these new varieties. Most pink Anthuriums discolour slightly when the twenty-four hour temperatures are high or with excessive light intensity. Colour fading is usually undesirable, but it can also be positive. For instance, when the newly merged colour provides diversity and matches your market and needs better. The pink varieties Colorado®, Maine® and California® differ in hue.

Choice of variety

The colour range of these three varies from the light pink Colorado, the slightly darker Maine to the darkest pink California. To make the right choice of variety, you have to take your own climate conditions into account:

- California: suitable for a high 24-hour temperature and a strong light intensity;
- Maine: suitable for an average temperature and an average light intensity;
- Colorado: suitable for a lower than average temperature and a low light intensity.

All these varieties are suitable for the 14 cm pot, but certainly also for the larger 17 cm and 21 cm pots. Compared to the other two, Maine is more resistant to the formation of cuttings, as a result of which it demands slightly more attention during cultivation.

Testing

You can, of course, test all three varieties at the same time in your growing conditions to see the minimal differences. The test numbers will be available soon. Ask our Area Managers for details. Whatever variety you choose, they are all good pink varieties and one will certainly suit you.

Richard Smit

Sales and Product Manager Anthurium pot plants

Colorado® (ANTHEUBP)



🌿 Colour	pink
🌸 Flower size	very large
🪴 Pot size	14, 17, 21 cm



Maine® (ANTHEPDAK)



🌿 Colour	pink
🌸 Flower size	very large
🪴 Pot size	14, 17, 21 cm



California® (ANTHEWUCH)



🌿 Colour	pink
🌸 Flower size	very large
🪴 Pot size	14, 17, 21 cm

Travelling in the USA

Successful TPIE show in Fort Lauderdale, Florida and interesting developments with American growers of pot Anthurium and Phalaenopsis.

Every year, Anthura attends the preferred trade fair of tropical plants in the USA. The TPIE in Fort Lauderdale is a trade fair that shows similarities with the FloraHolland Trade Fair. It is an event where growers of green and flowering plants showcase their products to buyers. On a limited scale, you will also find suppliers of ceramics, plastic pots and young plants.

We attended this trade fair to promote the end product, just like our customers. Buyers can find information about which growers the product can be bought from. Year after year it proves to be an interesting event after which you return home with plenty of useful and usable information.

Anthura is already present in the market, but until now sales of young plants have always been limited in Florida, though Florida is considered to be the basis for the production of many green and flowering plants in the USA.

This year, our varieties have conquered a fixed place in Florida and beautiful plants are being marketed year round. During the TPIE it became very clear that customers appreciate the combination of our varieties with the skills of the growers in Florida. One grower is even sold out in the coming period and is considering seriously expanding his pot Anthurium cultivation.

Phalaenopsis is grown massively in Florida and the percentage of plants with two spikes is becoming increasingly important here. In colder regions this is a lot easier. Phalaenopsis companies in Florida either stop trading or are taken over because the cultivation of a qualitatively beautiful product is more difficult here than in other states. Yet the production of Phalaenopsis on the west coast and in the northeast is growing steadily.

All in all, a challenging and interesting trip that offered a wealth of opportunities for the future! Unfortunately, this time there was no sunshine in the third week of January, but rainy and stormy weather. But then again, you can't have it all!

Joost Hendriks

Account Manager, Orchids

North and Central America, Canada and Brazil

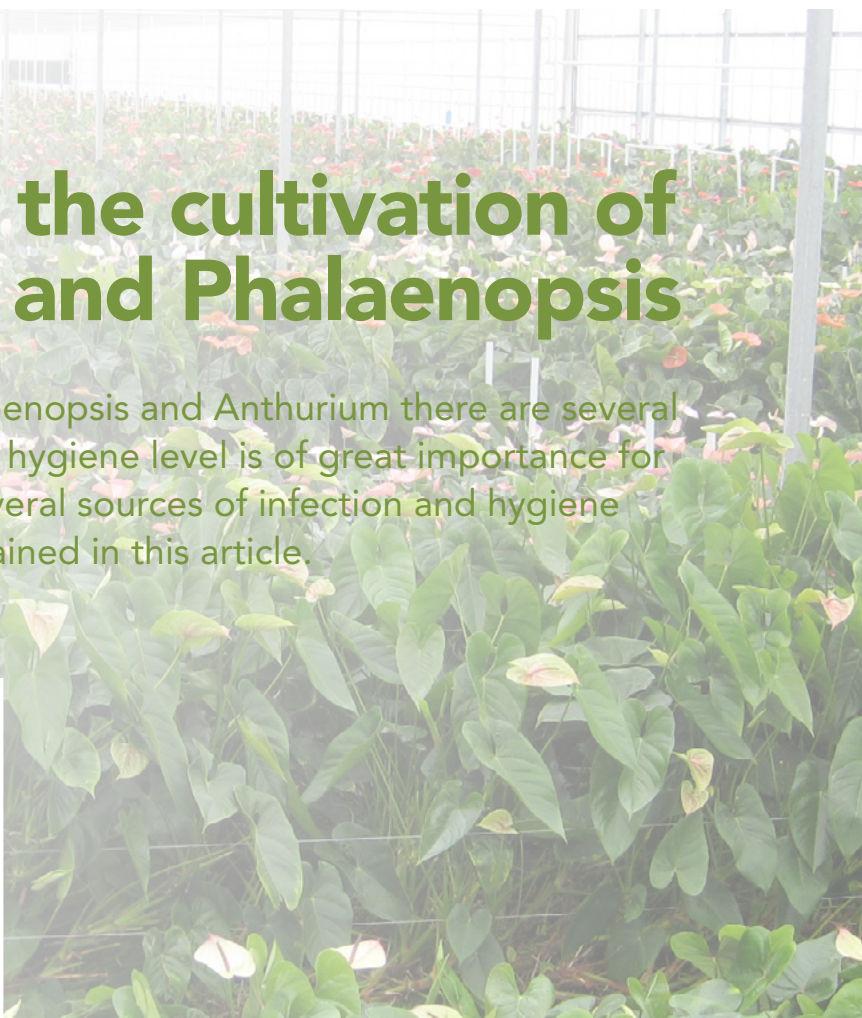


Stand TPIE in Florida, USA – January 2016

CULTIVATION TECHNIQUES

Hygiene in the cultivation of Anthurium and Phalaenopsis

In the cultivation of Phalaenopsis and Anthurium there are several diseases for which a high hygiene level is of great importance for prevention. There are several sources of infection and hygiene measures which are explained in this article.



For targeted cultivation advice on Anthurium and Phalaenopsis pot plants and Anthurium cut flowers



**New employee
Bureau IMAC Bleiswijk BV**



Hygiene in Anthurium and Phalaenopsis cultivation

Once in a while we are startled by the emergence of a new disease that threatens our crops. In order to prevent diseases and pests in general, or even a new disease, from entering the greenhouse from outside, strict hygiene measures are necessary. In this article several sources of infection will be explained.

In the cultivation of Phalaenopsis and Anthurium there are a number of diseases for which a high level of hygiene is of great importance for prevention. For Phalaenopsis, the main ones are the bacteria *Acidovorax* (*Pseudomonas*), *Erwinia* and the fungus *Fusarium*. These three diseases are responsible for more than 90% of the total loss in Phalaenopsis cultivation. For the cultivation of Anthurium, the bacterium *Xanthomonas* is the main reason for maintaining good hygiene. Last year, the bacterium *Ralstonia solanacearum* joined the list.

People

People in the greenhouse are the most important disseminators of fungi and bacteria. Through clothes, shoes and hands many pathogens are introduced

and spread unnoticed in the greenhouse. Reducing this as much as possible is no superfluous luxury. This can be achieved by wearing clean (over)shoes and an overcoat or overalls when entering the greenhouse. Hands should be disinfected with a disinfecting gel at the entrance. Washing your hands with soap and water is also very effective.

Insects

Some insects also spread diseases. For example, it is known that certain thrips spread viruses. In Phalaenopsis cultivation the moss mite is notorious for spreading *Acidovorax* (*Pseudomonas*). By pricking the leaves, the infected plant sap can be spread from plant to plant. Beside the fact that these insects cause damage by sucking, the spread of diseases is also

an important reason to keep them as far as possible from the door and to control them if necessary.

Plant material

Disease (and pests) can also enter the greenhouse with young plant material. A proper entrance control is indispensable. Make sure that (young) plant material is free of diseases when it enters the company.

Water

Splashing water is an important diffuser of bacteria and fungi. Traces present in the air are rained down during irrigation and end up on the crop. In addition, just a drop can also spread an infection from one plant to another. This can be avoided by adding a product to the water that kills

the bacteria. In practice, this is achieved by chlorine dioxide (ClO_2) or hydrogen peroxide (H_2O_2) or ionization of copper (Cu^{2+}). The bacteria present in the water or on the plants are destroyed, as a result of which the spread by splashing is largely prevented. However, this method of disinfection cannot be used as a control.

Hygiene protocol

In order to increase hygiene in a nursery to a higher level, it is advisable to consider all the facts. Take into account the following elements:

- Who enters the greenhouse?
- What are the walking lines in the greenhouse?
- Where are the diseased or suspicious plants in the greenhouse?
- Where are my oldest plants situated?
- What enters the greenhouse as 'foreign' plant material?

Partly on the basis of the answers to the above questions, you can then make a plan to reduce the risks of infection to a minimum.

General (basic) measures

A number of measures can and must always be taken. Start by limiting the movements of people around the crop (mostly staff members).

- Restrict these movements to those that are strictly necessary for disease and infestation control and determining irrigation times.
- People coming from outside should always wear company clothes and shoes. In practice, this means wearing an overall and overshoes over your own clothes.
- Hands should always be disinfected or washed when entering the greenhouse and contact with the plants should be avoided.

Disinfection of hands and shoes

For the disinfection of hands, for example,

it is important to know that disinfectants will be ineffective if the material to be disinfected is too dirty. In this case, the disinfectant cannot penetrate sufficiently because of the dirt. Wash your hands and make your shoes mud-free, if necessary, before disinfecting them. Staff are advised to use (company) work shoes or boots in the company. This is also recommended for visitors. By cleaning the shoes first, the disinfectant stays active for longer in the disinfection mats or tubs. It is important to first remove any organic material from machines and knives.

Disinfectants

In order to choose the most suitable disinfectant, it is important to determine for which disease it has to be effective. It should also be stipulated whether it is safe for the staff and whether there is sufficient time for the product to disinfect.

Plant resistance and disease pressure

EA healthy plant will get diseased less easily than a weak plant. In addition, a higher disease pressure will also increase the risk of infestation. Stress factors in the cultivation, like a very high or low



Instructions at entrance to showroom Anthura

greenhouse temperature, also reduce the resistance of the plant and make it extra sensitive. In such a situation, you can decide to reduce the disease pressure as a preventive measure. This can be achieved by using a chemical agent, but there is also a wider choice of biological products and plant invigorators.

Barrier method

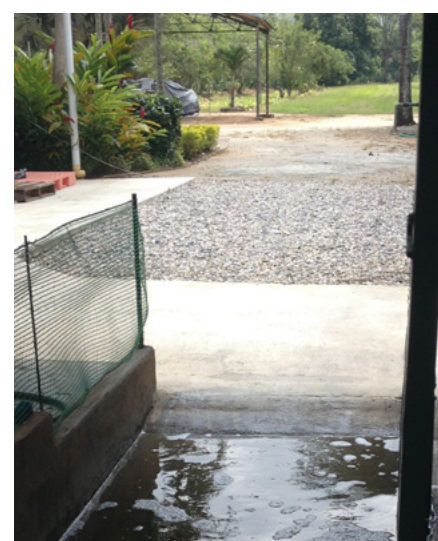
Hygiene measures can be divided in two parts:

1. Hygiene from outside to inside the greenhouse
2. Hygiene in the greenhouse

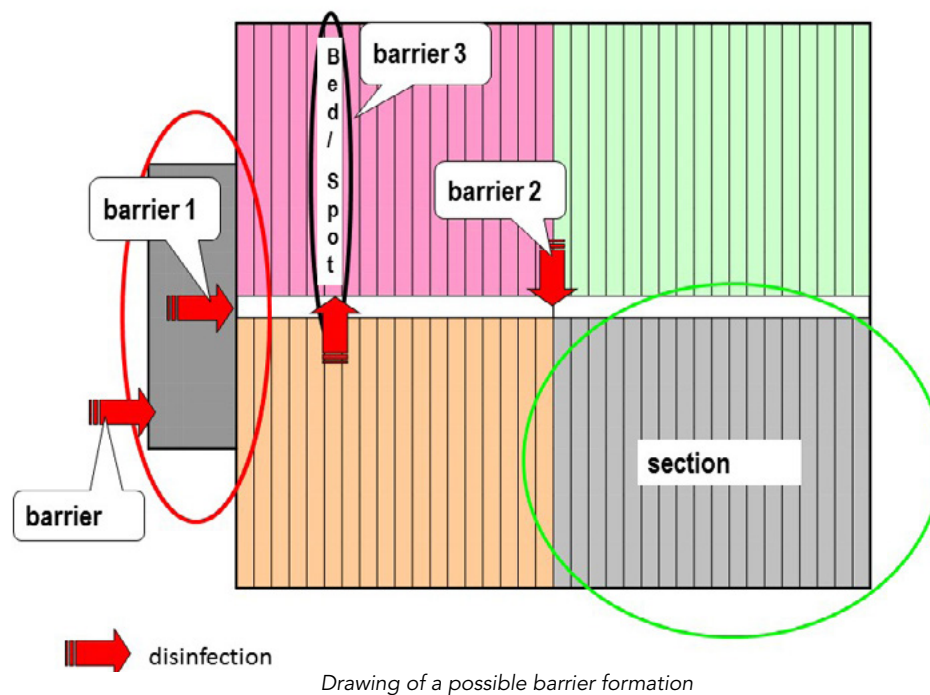
With such a subdivision you end up with the 'barrier method', according to



Chart with disinfectants at hand



Disinfection tub for feet in the tropics



which the greenhouse or a part of the greenhouse is divided into a smaller area or several smaller areas. The line between these areas is called a barrier. Barriers reduce the risk of infection in the company considerably. The main goal of the first barrier is to ensure that the fungus or bacterium is kept away from the greenhouse. The following barriers can be used to reduce the spread of fungi within the company. These barriers can be situated in different sections or even a barrier per bed or table.

What does the creation of barriers imply?

Barriers are established from the inside to the outside, or from clean to dirty. As a rule, you should always work from clean to dirty. It should be determined in advance, for instance, whether plant material may enter the greenhouse or a specific section. It may also imply a fixed working direction. When you work from young to older plant material and/or from disease-free to infected plants, you should strive to prevent healthy plant material getting infected by diseased plants.

Another option is to work in the sections with infected plants or the oldest plants at the end of the week. By starting at the beginning of the week with clean clothes/machines, further spread can be reduced. In the cultivation of cut Anthurium, you can decide to work with a separate knife for each barrier. The advantage of these last two choices is that more time is spent on the disinfection of knives and machines, which clearly reinforces the effect. Sometimes it is possible to work within a few barriers with several people per barrier.

When you come into contact with plant sap in the course of sampling or controlling the plants and you are working across several barriers, then opt for working with plastic gloves and change these between the barriers.

It is advisable to make barriers as visible as possible by indicating with posters where a barrier starts and ends and which measures are expected. Between each barrier it has to be clear to everybody which hygiene measures are compulsory.

Control over potential transfer is very important. The barriers can be indicated by foil, screens or a partition wall. You can establish the policy that everybody who has worked in the cooling or finishing phase should disinfect their hands before going on to work in the growing phase.

First barrier

The first barrier is the most important one: it aims at keeping the fungi and bacteria away from the greenhouse. The best place for this barrier is the entrance to the greenhouse. During the break there might have been contact with fungi and bacteria and in the packaging area pathogens may be present. A first barrier at the entrance of the company can do no harm, of course. It reduces the disease pressure in the warehouse and/or in the office as well as the pressure on the next barrier.

Second barrier

The greenhouse often consists of several sections. These sections are easy to protect from each other. Each door to the next greenhouse implies crossing the following barrier, the second barrier. At

the second barrier a distinction is usually made between young and old material, between different cultivation phases like growing, cooling and finishing, or between diseased and infected plant material. By using closures between these sections, everybody can see clearly where hygiene measures are applied.

Third barrier

After crossing the second barrier, it is possible to include a third one. This is often the case for plants which may be infected or a place where loss has occurred. It can be applied for each bed, table or an old source where diseased plants have been eliminated. Mark such a place or protect it with a foil. Work as much as possible away from the source and leave the source until last. Disinfect your hands as well as your feet and clothes, if necessary. In the case of Anthuriums this can imply working with one knife per bed.

Looking for diseases

Looking for diseases and clearing away diseased plants entails many risks for further spread because plants are often dragged through the greenhouse:

- Start looking for diseases ALWAYS from 'young' and 'clean' to 'old' and 'dirty/infected'.

Apply the barrier method here:

- Put diseased plants promptly in a plastic bag which should be closed immediately. Do not leave diseased plants on the path;
- Do not transport the plants above the tables but under the tables and take the diseased plants directly to a container outside;
- Hose down the direct surroundings of the diseased plants just after removing them with a suitable disinfectant like JET-5 or hydrogen peroxide in the prescribed concentration.

By applying the above measures, the risk of infection will be reduced considerably. If you have any questions or want to receive additional information, please contact Bureau IMAC Bleiswijk B.V.

Menno Gobelje

Bureau IMAC Bleiswijk B.V.

IMAC personal

New employee at Bureau IMAC

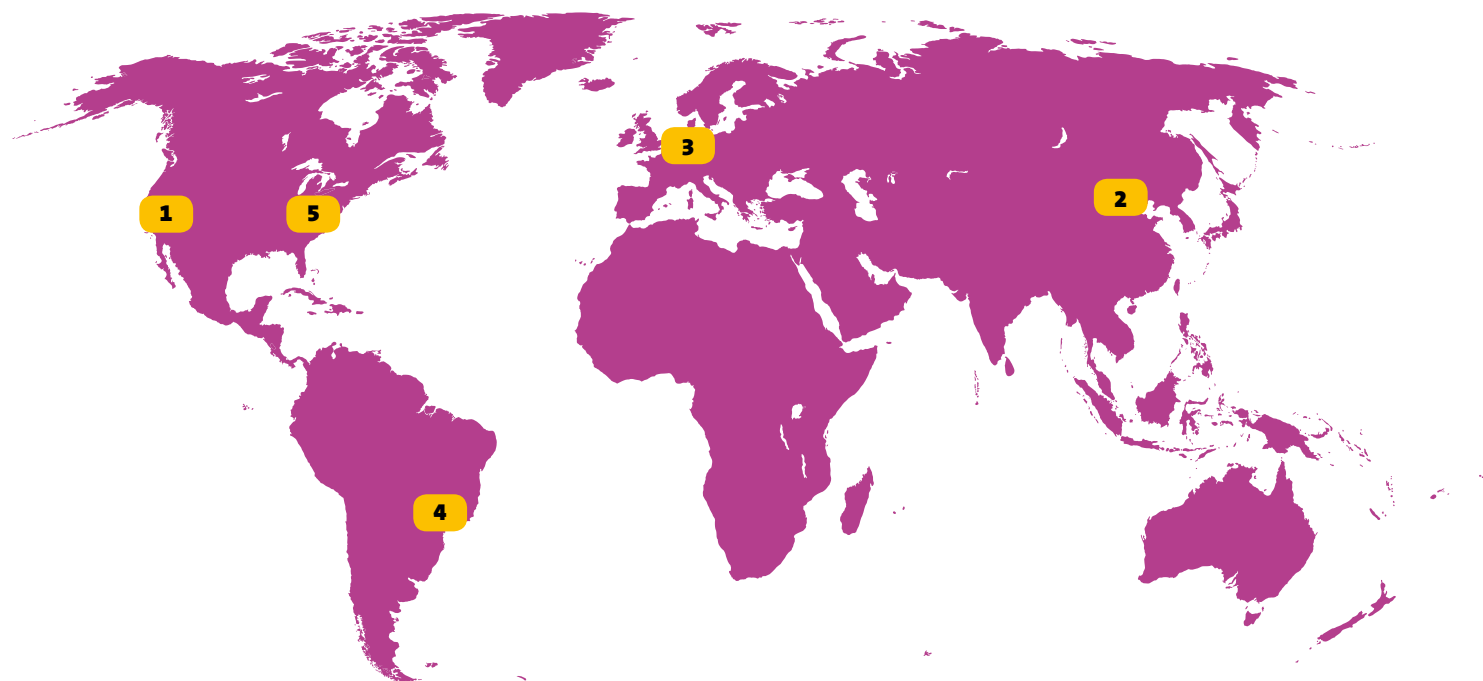
Meet our new colleague:

"My name is Marco Evers, I am 38 years old and live in Zevenhuizen. I am married to Dorette and the proud father of four children. Since September 2015, I have been working as a cultivation adviser for Bureau IMAC, specialising in pot Anthurium.

I developed my passion for Anthurium cultivation at a very early stage; as a child I grew up among Anthuriums in my parents' company. I find it interesting to apply my knowledge as a cultivation adviser and to contribute in another way to the future development of this beautiful cultivation, at both a national and international level."



Summary of trade fairs up to July 2016



1. Spring Trials

Oxnard, California, USA
09/04/2016 – 14/04/2016

2. Hortiflor Expo Asia

Beijing, China
11/05/2016 – 13/05/2016

3. Flower Trials

Bleiswijk, Holland
14/06/2016 – 17/06/2016

4. Hortitec

Holambra, Brazil
22/06/2016 – 24/06/2016

5. Cultivate'16

Columbus, Ohio, USA
09/07/2016 – 12/07/2016

Colophon

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