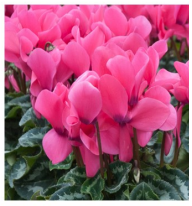
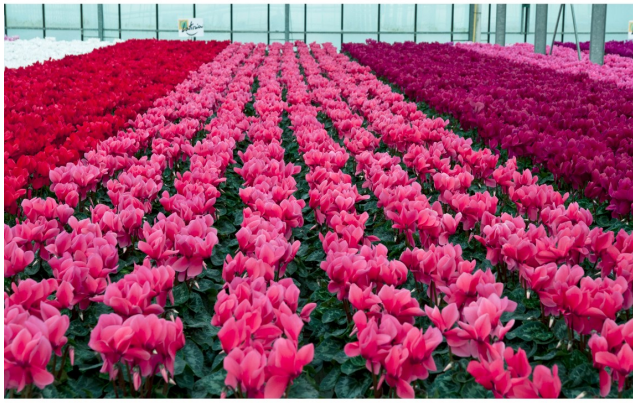
SUCCESS® in 11cm (4.25") pots: Quality AND Profitability

Results of a trial comparing 2 different culture techniques:

The aim of the trial is to produce quality products, with a high commercial value and as profitable as possible.

Latinia® and its new generation in the SUCCESS® Mix, offer unique genetics on the cyclamen market.




In preview, the 6 varieties which compose the SUCCESS® Mix , introduced in the first place in our catalogue 2011-12:

1011 SUCCESS® Bright red
1038 SUCCESS® Salmon
1070 SUCCESS® Rose
1097 SUCCESS® Purple
1107 SUCCESS® Deep Magenta
1121 SUCCESS® Pure white

Our breeding program has focused on the improvement of the essential colours of this series in order to increase the size of the flowers and to obtain more compact and very homogeneous plant habits. Today, this compact series classified in the Large Flower section, does not have an equivalent on the cyclamen market in terms of precocity and homogeneity.

During our last trials in November in Fréjus, we demonstrated the adaptability of these Latinia® improvements, composing the SUCCESS® Mix, for a culture in 11 cm/4.25'' pots (0,5 L) instead of the traditional 14 cm/5.5'' pot (1,5l). This culture trial in 11cm/4.25'' pots is based on the comparison of 2 different watering techniques: subirrigation and drip system.

Culture:

The sowing was carried out in week 11 for flowering in the second half of October.

The culture from the potting of the young plants (15 weeks old) in week 26 until the rooting phase (week 30) was carried out in the same way for all the plants of the trial.

The comparison trial really started in week 30: half of the culture was put on subirrigation tables and the other half on open tables with drip system.

The essential difference between the 2 watering systems lies in the water flow, and consequently in the frequency of watering.

The feeding was adjusted according to the 2 irrigation systems.

		System A **Ebb/Flow**	System B **Drip system**
Culture facts	Potting	Week 26/2010 young plants 15 weeks old	
	Pots (white plastic - thermoformed)	11 cm / 4,25''	
	Substrate composition	35 % blond peat fraction n°2 30% blond peat fibers 25 % nuggets 10% coarse Perlite	
	Substrate drainage	not measured	35% coarse and open structure
Irrigation	Quantity of water given at each watering	75 cc	50 cc
	Watering frequency per week	1 to 3	5 to 7
	Total water amount per week	75 to 225 cc, average: 150 cc	200 to 350 cc, average: 250 cc
Light	Shading	65 to 70%	
	Radiation	<400 w/m²	
	Shading removal	progressive : in 3 phases, from August until flowering	
Feeding	ADT > 20° C/ 68°F :	5-11-40 at 0,4 ms/cm (+EC water = 0,4)	8-6-16 at 0,4 ms/cm (+EC water = 0,4)
	ADT < 20° C / 68°F:	12-6-30 at 1,2 ms/cm (+EC water = 0,4)	8-6-16 at 0,8 ms/cm (+EC water = 0,4)
Treatment	Growth regulator*	Alar 85 at 4 gr/L in week 29/10	without

Observations on the temperatures:

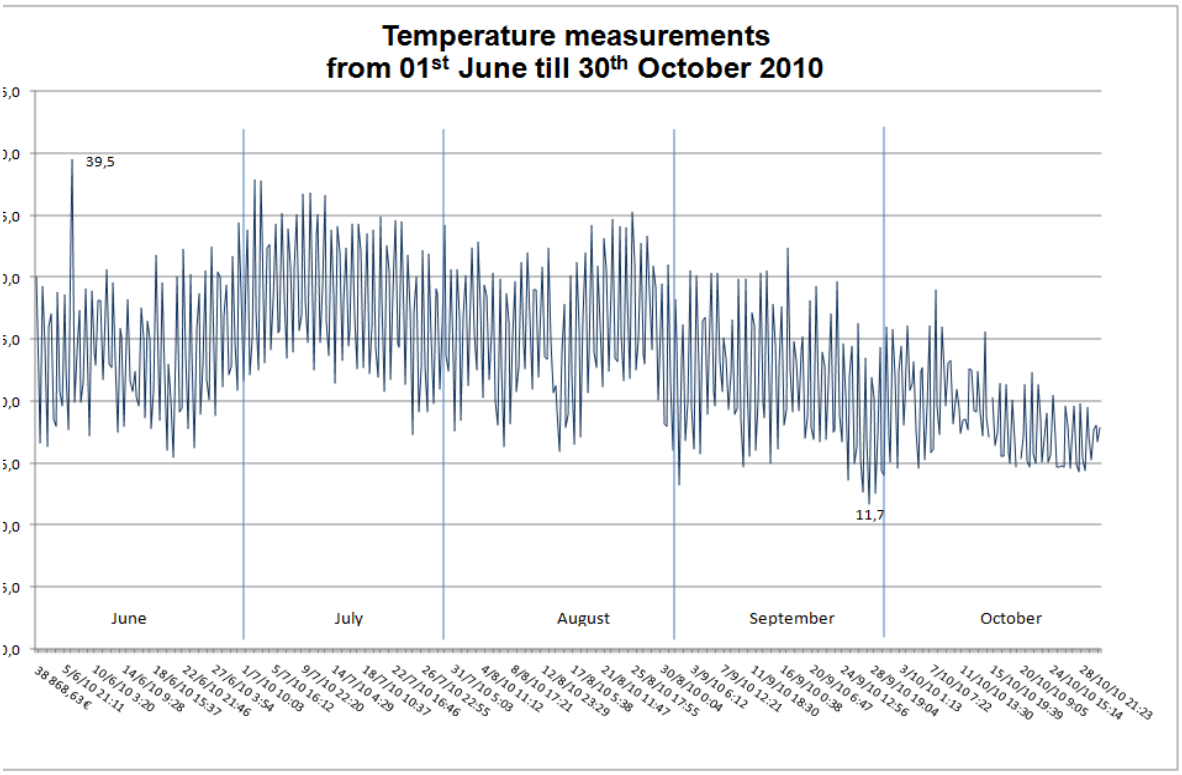
In areas with a climate as in the South of Europe, the high temperatures generate an increase in water demand. This constitutes the principal limiting factor for the production of compact plants.

Thanks to the particular breeding of our varieties and also the watering control, the trial proved that one can get around this obstacle and control the growth of the plants without damaging the roots.

To take our bearings and to have a common reference of temperature measurements, we use the concept of ADT (Average Daily Temperatures). ADT corresponds to the average temperature measured in the greenhouse over 24 hours.

See for more details : ***http://www.gpnmag.com/Calculating-ADT-article9923***

Temperatures from potting to flowering



Temperature conversion : max 39.5°C = 103.10 °F - minimum 11.7°C = 53.06 °F

***Observations on watering with subirrigation system:**

- In this system, the water amounts are twice as high as those of the drip system and consequently, the frequency of watering must be divided by two to avoid water excess. This could be a disadvantage to answer the water demand of the larger and older leaves. But in order to block this demand, we treated with B-Nine (Alar) at 4 gr/l at the time of spacing. Only one treatment was necessary to obtain a good result.

NB: With regard to the use of growth regulator, it is not only the amount of the product which is important but also the quantity of product per plant or surface. Our method is to wet on top of the foliage which prevents the product to penetrate inside the plant. Treatment just slightly drops off the oldest leaves.

- The recent ebb & flow systems do not always imply high flows of watering. The most elaborated versions are those which allow lower flows. In the same way, there are drip systems with different flows, where the low flow remains the most indicated.

-In order to water in the most homogeneous possible way, it is important to regulate the time of filling and draining of the subirrigation tables at the shortest. To this effect, it is easier to work with smaller tables.

Culture facts Ebb & Flow system (system A)

Culture system A — LATINIA SUCCESS

Culture facts

Calender weeks	11	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
Culture weeks	1	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
Sowing	X																															
Transplanting						X																										
Potting 30 mm plug												X																				
Spacing															X																	
Growth regulator															X																	
Watering per week																1	1	2	2	2	2	3	3	2	2	2	2	1	1	1		
Balance																5-11-40									12-6-30							
EC																0.8 ms/cm									1.5 ms/cm							

CLIMATE

Shading	→	→	→	→	→	→	→	→	67%	→	→	→	→	→	→	→	→	D	→	→	→	→	→	D	→	→	→	D	→	→	→	→	→
Radiation (W/m2) max																		→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→

400W/m2

Additional information

FEEDING	5-11-40 and 12-6-30
SUBSTRATE	potting 1 Kg/m3 Pg mix
POTS	plastic Ø 11 cm (4,25'')
GROWTH REGULATOR	ALAR or B-Nine

Irrigation by Ebb & Flow 75 cc per watering

D * Shade removal

Culture facts Drip system (system B)

Culture system B — LATINIA SUCCESS

Culture facts

Calender weeks	11	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
Culture weeks	1	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
Sowing	X																															
Transplanting						X																										
Potting 30 mm plug												X																				
Spacing															X																	
Growth regulator																																
Watering per week																5	5	5	7	7	7	7	7	7	7	7	5	5	5	5	5	
Balance																8-6-16									8-6-16							
EC																0.8 ms/cm									1.1 ms/cm							

CLIMATE

Shading	→	→	→	→	→	→	→	→	67%	→	→	→	→	→	→	→	→	D	→	→	→	→	→	D	→	→	→	D	→	→	→	→	→
Radiation (W/m2) max																		→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→

400W/m²

ADDITIONAL INFORMATION

FEEDING	8-6-16
SUBSTRATE	potting 1 Kg/m³ Pg mix
POTS	plastic Ø 11 cm (4,25'')
GROWTH REGULATOR	None

Irrigation by Ebb & Flow 50 cc per watering 35% draining

D D* Shading removal

BASIC DIFFERENCES BETWEEN the 2 CULTURE METHODS

Culture system A	Culture system B
Maximum total radiation 400 W/m²	
Ebb & Flow	**Drips**
system with high flow (75 cc)	system with low flow (50 cc)
open substrate	open substrate
low watering requency	**high watering frequency**
healthy and active roots	healthy and active roots
1 treatment with B nine	-
low nitrogen level in warm periods 20 ppm N ADT > 20°C (68°F)	correct nitrogen level in warm periods 40 ppm N ADT > 20°C (68 °F)
poor growth 1 to 2 layers of foliage, not very active no symptoms of deficiency	correct growth several layers of active leaves no streching
ADT <20°C (68°F) lower watering frequency high nitrogen level = 100 ppm N	ADT <20°C (68°F) lower watering frequency correct nitrogen level = 75 ppm N
correct growth many small leaves and buds round and compact habit, smaller volume short flowerstems	correct growth few leaves and buds round and compact habit long flowerstems

Trial results:

The 2 culture methods have produced 2 very distinctive plant sizes.

Culture system A ***Ebb & Flow****	***Culture system B*** ***Drip system***
Density: 20 plants/m²	**Density: 14 plants/m²**
- obvious smaller plants	- more voluminous plants at the end of the culture
- big difference in size between older and younger leaves	- plantstructure with many small leaves
- flowers 1 week later than culture system B	- flowers 1 week earlier than culture system A
- smaller flowers and shorter stems	- bigger flowers and longer stems at the end of the culture

Conversion : 1 m² = 1.20 yd²

Culture method A : Subirrigation
Density: 20 plants /m²

Latinia® SUCCESS® Salmon (1038), Purple (1097) and Bright red (1011) cultivated on subirrigation table

comparison of same variety (Latinia® SUCCESS® Pure white 1121) in 11cm / 4.25" pots : on the right, cultivated on subirrigation table (method A) and on the left, cultivated with drip system (method B)

From middle to left: Latinia® SUCCESS® Rose (1070) and SUCCESS® Salmon 1038) cultivated with drip system (method B)

From middle to right: Latinia®SUCCESS® Pure white (1121) SUCCESS® Deep Magenta (1107) cultivated on subirrigation

CONCLUSION

In this trial, we have highlighted the easy adaptation of the new generation in the Latinia® range, the varieties of the SUCCESS® Mix, and we proofed it is possible to produce quality plants in smaller pots.
This range can be cultivated in pots from 11 to 15 cm.

In the smaller pots, it requires an accurate control of the culture facts which are in correlation with one another.
We have specified the adjustments to be made:

- the control of light that, to a certain extent, will influence the temperature.
- control of the characteristics of the watering system, and consequently, watering amounts, feeding or other treatments.

The choice of the varieties being the base of any culture planning, it also strongly influences the result. The varieties of the Latinia® SUCCESS® Mix are really the genetic solution, which, combined with technical precision, makes it possible for the producers to reach a better productivity due to a higher density.
Thanks to this trial and to the genetic evolutions of the varieties of the Latinia® SUCCESS® Mix, the persistent grower can clearly identify all the keys to success which will lead to both quality and profitability.

Need to re-examine a technical detail?

In previous editions, we have discussed:

- *specificities of what one defines as healthy and active roots. A good balance between fine and thicker roots will avoid any loss. (Document available upon request)*
- *the importance of the balance between nitrogen and potassium to reduce the water demand when the temperatures are high. (Document available upon request)*