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GRACE

Forcing Recommendations

Grace is a new lily variety that was propagated in 1991 by Norman Hanscam. It is the result of cross pollinating two varieties. The entire variety comes from one single seed. This single plant best expressed the positive characteristics of both parents. As a new variety, Grace is designed to solve some of the current issues with Nellie White and reduce your manipulations while increasing your bottom line. The characteristics we were looking for were short plants with high leaf numbers and high flower count and shorter leaves to increase your density. This is particularly true of smaller bulb sizes. This trait is also very noticeable on double nose bulbs, even in the smaller sizes. Besides the dark green color, there are 3 main differences between Nellie White (NW) and Grace that will affect your forcing decisions and are discussed below. It is further obvious to me that ideally you should grow Grace separately from NW; at the very least you must grow it quite differently.

The first difference is the timing of various developmental stages. Expect Grace to emerge 7-10 days later than NW. This would be a problem except that Grace has a very high leaf unfolding rate and will make visible bud, when forced with NW, at nearly the same time. The real change a grower must make because of its emergence date is recognizing that its reproductive date is also 7-10 days later than NW. So if you have both populations in the same zone you need two dramatically different time frames that are optimum for temperature dips to increase bud counts. That's pretty hard to do!!

*Also, because of the higher bud count on a smaller bulb, Grace can take 3-5 days longer from visible bud to open flower. It has been shown that a Nellie White forced at 65 degrees will take 32 days from visible bud to open flower. Expect Grace to take approximately 36 days at 65 degrees. Due to all these factors when Grace grows side by side with NW it tends to be our mid to late shipper. **Growers should make every effort to position Grace in the warmest areas of the greenhouse when in the same zone to offset this difference, particularly to make earlier ship dates.** When larger quantities of bulbs are available, or if you put it in its own zone, the additional heat costs will easily be offset by the Grace variety's ability to achieve the same bud count on a smaller bulb and produce this crop at a higher density. If you are a 2.5/ft sq NW grower, then your Grace production should be 3/ft sq in 6' pots.*

*The second difference between NW and Grace is height. This cultivar is naturally shorter than NW. If you apply large increments of negative Dif, short days, or over apply growth retardants (that is, apply at the same rate as a NW) these plants will be below your height specs. You may find yourself spraying Fascination at VB to stretch them up!!! In a nut shell, if Grace replaces NW, negative Dif will be a thing of the past and the use of PGR's will drop to a minimum. Also, but equally important, the pace at which they elongate is somewhat different. Therefore, a grower must make slight variations when applying height control techniques to accommodate this change of pace. The pace changes from visible bud to open flower. Normal height control is effective prior to visible bud, but from visible bud to open flower these plants tend to elongate more. Normally a NW is 50% of its finished height at visible bud, but Grace is **only about 40%**. This is partially due to the increase in bud count. High bud count cultivars, like Grace, will display the additional count on an elevated piece of stem, not elongated peduncles (pedicel) like a high bud count NW. This leads to a two tiered flower display. It is therefore advisable to make one or two additional Sumagic applications from VB to candle stage. This helps compensate for the "rack" of flowers that are produced.*

The third difference from NW is of course bud count as well as flower form. First a word about bud count. Nellie White produces for most growers 5-7 flowers on an 8/9 bulb. The average actual bulb size in a case of size 8/9 NW's is 9 inches, producing 0.66 buds/inch of bulb circumference. Grace produces flowers at a rate of 0.9 buds/inch of bulb circumference. So it is normal to get 5-6 flowers on a 6.5/7" bulb with Grace, or 8 to 9 buds on an 8/9 bulb (see below for bud count statistics from greenhouse production). Grace also has the ability to regularly have tertiary buds, much more so than a NW, but the bud count totals below, for Grace, do not include any tertiary buds. Flower form also varies from NW; the bud length on Grace is shorter. A normal NW bud is 6-6.5" long and Grace is 5-5.5" long. Therefore bud meters developed for Nellie will not work on Grace. Enclosed please find a bud meter for Grace, and only for Grace. The interesting thing about this flower is that although it is shorter, it has a very high recurve to the bloom and appears to be larger than you might expect for a bud that is an inch shorter. Also the pedicle length is short (see photos) and therefore the buds don't hang like NW secondaries so often can.

As with any smaller bulb in a 6" pot, water must be watched closely as there is more soil volume and less bulb volume per pot, and they can dry more slowly. The foliage is shorter than a NW which can have a spread of 14-15 inches; Grace will be 11-12 inches. This will allow about 20% more pots per square foot than NW (so if you currently bench NW at 2.5/ft sq, then Grace will handle 3/ft.sq).

We strongly recommend you continue to sell this cultivar in a 6" pot and hold pricing to your current level for a 6" NW. By reducing your input costs, via reduced bulb costs, tighter benching, and reduced height control, you will then increase your margin on Easter lilies, which I'm sure we all can agree has been declining and we can all use the help!

In short, we believe that you will be as impressed with Grace, as we have been, and through your experiences as well as ours, we will develop an ever more thorough knowledge of how to best handle this new cultivar.

Remember, if a new cultivar is not different from NW then it might as well be NW. Expect a DIFFERENCE!! This cultivar is different than NW, but it should by no means be more difficult to grow. The fact is, it is easier. Sometimes less is more!

Grace Lily 2010

Bulb Size	Cooling	# of Plants	Total Buds	Average Buds	Buds/in.	Leaf #	Height	Growth Retard (season total)
6/6.5	CTF	60	309	5.15	0.824	72	20"-24"	2 ppm Sumagic
6.5/7	CTF	60	381	6.35	0.94	73.6	20"-24"	2 ppm Sumagic
6.5/7 3 year average				7.14	1.05	75.5		

Nellie White, 2010

7/8	CTF			5.92	0.72		20"-24"	18-25 ppm Sumagic
8/9	CTF			6.86	0.77		20"-24"	18-25 ppm Sumagic

- Note that Grace lily bulb size 6.5/7 3yr. average is comparable to NW 8/9

BUD COUNT BELL CURVE

6/6.5 Grace Lily

	3 Buds	4 Buds	5 Buds	6 Buds	7 Buds	8 Buds	9 Buds	TOTAL BUDS
Plants	5	5	29	18	3	0		309
%	8.33	8.33	48.33	30	5			

6.5/7 Grace Lily

	3 Buds	4 Buds	5 Buds	6 Buds	7 Buds	8 Buds	9 Buds	TOTAL BUDS
Plants	0	0	5	31	18	5	1	
%			8.33	51.66	30	8.33	1.5	

The Benefits of Grace

- ❖ Smaller bulb size that produces the desired flower count on a naturally shorter plant
- ❖ More efficient freight costs, both in bulb shipping and finished palletized product shipping
- ❖ Lower cost per bulb, per pot
- ❖ Naturally shorter plant, meeting consumer demands with less height manipulation
- ❖ Higher density per square foot of bench space
- ❖ Lower production costs per pot

Achieving Success with Grace

- ❖ Grow separate from Nellie White
- ❖ Isolation of Grace from NW crop will allow you to water Grace to its specifications (different timing than NW) and will allow temperature dip at the appropriate time for this cultivar.
- ❖ No need for extreme DIF; neutral or slight DIF without shorter days
- ❖ 1-2 minimal applications of growth retardant
- ❖ Average finished height of 18-22"

