

# PAPERWHITE NARCISSUS ... a potential nursery crop for South Florida.

Prepared by Joe Garofalo

Paperwhite narcissi are among the easiest of the “temperate-zone” bulbs to force in South Florida. The Fall/Winter of 2001-2002 was the seventh year I’ve forced them with minimum effort and only minor problems. This Winter also was the first time a grower in Homestead forced and marketed a few.

## CLIMATE.

These fine bulbous plants require no chilling. They survive at least to climate zone 8a (+10° F), the limit of my experience, and probably lower.

What paperwhites really require is something the Europeans call “a good baking” in the Summer to “ripen properly.” (Translation = after flowering they need high temperatures and sun to mature properly, enter dormancy, and prepare to flower.)

They flower before or as the leaves emerge, as they come into growth in Fall. After flowering, they grow vigorously to build up food reserves in the bulb for the next flowering cycle.

Most narcissi are best adapted to a temperate climate with cool, wet Winters and hot, wet or dry Summers. They are found in a great variety of habitats, including the seacoast, in meadows, woodlands, riverbanks, rocks and alpine turf, from sea level to nearly 10,000 ft. The paperwhites are the only daffodils I know of that perform well in a subtropical, dry-Winter climate like ours. All they need from us is full sun and irrigation while in active growth.

## CLASSIFICATION.

In Greek mythology *Narcissus* was the youth who fell in love with his own reflection in a pool, and was turned into a lily by the Gods. The genus is in the amaryllis family, Amaryllidaceae, and includes about 50 species of bulbous herbaceous perennials.

In the cut-flower trade & among bulb growers it is

usual to call narcissus cultivars with long coronas (“trumpets”) daffodils, & those with short coronas (“cups”) narcissi. But this is not a valid distinction, since many species have coronas of medium length. “Narcissus” & “daffodil” are, in fact, synonyms.

Paperwhites are classified botanically as *Narcissus tazetta ssp papyraceus*. The Latin name means “the lily with small, papery cups.” The Royal Horticultural Society in England is recognized internationally as the registration authority for the genus. Their current system, last modified in 1989, places paperwhites in Division 8, *Tazetta daffodils of garden origin*. As a group they have several small florets on stout scapes, & broad, flat leaves. The floral segments are spreading, & flowers are fragrant.

## NATURAL GROWTH CYCLE.

Paperwhite narcissus originates from the Mediterranean region, from the lowlands near the coasts. They are especially plentiful in Spain and Italy (hardiness zones 7b-10, depending on the authority consulted). A few are found wild in China and Japan, but they are thought to have been introduced from Europe during the 1200s.

In the wild, paperwhites emerge in the Fall, producing both flowers and leaves during the Winter. Their active growth period is coincidental with the Mediterranean rainy, cool season. After flowering, they grow vegetatively to store up reserves for the next bloom cycle, and go dormant during the late Spring/early Summer. We can thank the Dutch for turning things all around.

## BULB & FLOWER PRODUCTION.

What do you do if you live in The Netherlands and want to sell paperwhite bulbs and flowers? You turn the calendar around, changing a cool-season plant into a warm-season plant that will grow & flower, but not survive the Winter, in the Dutch climate.

The Dutch grow their paperwhites during the warm season, flower them during late Spring, let them bake in the Summer sun, and go dormant in the Fall. They market them as Spring-flowering bulbs for landscape use and forcing under glass.

Those used in landscapes in Holland freeze in the ground come Winter and don’t survive. This is a great thing if you make your living by growing and selling bulbs. For forcing, paperwhites are generally available from September to February.

## FORCING.

Paperwhite narcissus is well-suited for pot production. They can even be successfully forced in the home without soil, because the bulb is designed to bloom first, then grow leaves to restore itself for next year. Water and something to anchor the roots (pebbles, marbles) are all that are required.

For nursery forcing, deep pots are needed to accommodate their extensive root system. One-gal plastic pots are good, especially the “big gallons,” but smaller sizes are not recommended. Either soil-based or soilless media can be used, but must be well-drained & free of pathogens. The peat-&- perlite mixes work well.

Bulbs are sold by size, either by measurement or by size category. Commonly available sizes include 13-14 cm, 14-15 cm, up to 17+ cm. The commonly available size categories are DN I, DN II, & DN III. (DN=double-nosed.) DN I & DN II consist of a mother- & a daughter-bulb still attached at the basal plate. DN III is the smallest, & is a round bulb.

DN IIIs usually produce two scapes; DN Is produce three or four. “Single-nosed” bulbs (intended for landscape use) are smaller than DN IIIs, and some may not bloom, so don’t use them. For forcing in pots, 13-14 cm or DN III bulbs are probably best.

Fill the pots nearly to the top & lightly firm the medium. Three to four DN II, or 4-5 DN III bulbs will fit into a typical 1-gal pot. Press them into the medium firmly, add medium to half-cover the bulbs, then press this firmly. The bulbs should be only half covered by the medium, with a half-inch head space.

Pots can be “double-decked” by placing one layer of bulbs half way down the pot, filling around them with medium, and placing another layer among the noses of the lower bulbs. This will produce a mass of flowers. The main drawback is the cost of the bulbs (prices range from \$36/100 to \$48/100, depending on size) and the mass of roots produced.

Pots can be forced in full sun or partial shade, with partial shade being better. There are reports that full sun & black pots can overheat the medium & cause flowers to abort. I have never seen this in Homestead, but I have always grown them in partial shade. They should be in full bloom in 4-8 weeks.

## MARKETING.

DO NOT DELAY marketing paperwhites—the flowers tend to be short-lived when forced at our usually high temperatures. It would be best to market them with only a few florets open. Bloom can be retarded, but that requires a cooler, which is not practical for most nurseries. A good strategy would be to sell them before full bloom to a florist, who already has a cooler, & who is experienced in using temperature to manipulate bloom.

When paperwhites are taken indoors the low light level causes flower & leaf stems to stretch. This happens with most plant species, & becomes evident after a few days. You should advise the retailer to give them as much light as possible. The consumer can cut the flowers and place them in a vase.

After bloom is over, the consumer should plant the bulbs in the landscape in a sunny, well-drained site. They should be planted six to eight inches deep—shallow planting causes the bulbs to divide into many small bulbs that won't bloom next year.

Once bulbs have been forced, they are unlikely to be suitable for growing in pots again. For the last four years I have carried over bulbs both in dry storage and dormant in their pots. The second-year bloom is always disappointing. The nursery grower should purchase new bulbs each year.

**CULTIVARS.**

For forcing purposes, you can choose cultivars that bloom early or late. Some of these were developed in The Netherlands, and some in Israel, which has temperatures like those of North and Central Florida. There are other cvs, but these are the ones that are generally available from wholesale sources.

'Ziva' (all white) can be forced into bloom from September through December, and 'Galilee' (white with a creamy cup) can be forced from December through February. These are the only cultivars I have forced in any numbers—usually 200 to 300 each year. These are also the cultivars most commonly used for forcing. The following cvs should be tried only in small numbers until their performance is better known. They are also much more expensive than 'Ziva' and 'Galilee'.

'Avalanche' is a creamy white with yellow cup, 'Constantinopol' is a semi-double with white petals and a divided golden cup, and 'Omri' is all white. These last two have "delicate" scents. A pot of 'Ziva' or 'Galilee' with four bulbs in bloom packs enough fragrance to knock you down. I happen to like the scent in all its abundance, but some people find it unpleasant, especially indoors in Winter.

There are two additional closely related cultivars generally available, but they are, in my opinion, to be avoided. These are the 'Grand Soleil d'Or', a strong yellow with golden cup (a paperwhite that isn't white), and 'Chinese Sacred Lily' (great name for a

plant from the Mediterranean!), white with yellow cup. Both cultivars appear to be infected with a mosaic virus, and they just never perform well in Florida, especially forced. They look great in the catalogs, but have never done well for me in pots or in the ground.

There is only one problem I have had with forcing paperwhites—if you try to hold the bulbs in dry storage for flowering late in the season, they tend to bloom at six inches or so, too short for cutting or for selling as pots in bloom.

**DISEASES & PESTS.**

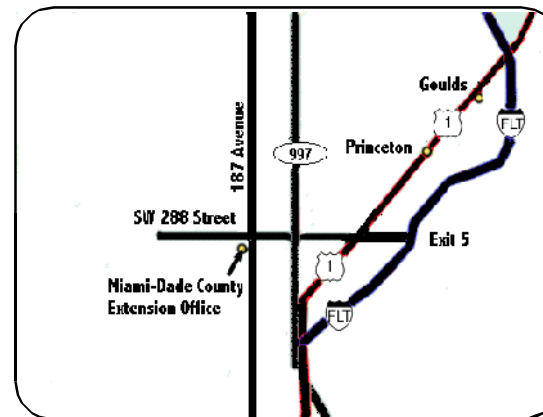
Because paperwhites are usually in & out of the nursery in less than three months, disease & pest problems are rare. When bulbs arrive, inspect them for signs of diseases, insects, & physical injury. The most common problems include soft rot, blue mold, & bulb-fly maggots. If damage is found, contact your county extension agent or the Plant Disease Diagnostic Clinic for a recommendation. Most problems can be controlled by roguing—just remove & destroy affected bulbs.

**MARKET POTENTIAL.**

We certainly have enough residents who remember daffodils from their previous lives up North, so there is a potential market. Occasionally a few pots are offered by local retailers in Miami-Dade & Broward.

They usually appear to have been chilled out-of-doors in a bulb pit somewhere up North—the pots are usually dirty and over-filled with medium held in place by roots—and brought under glass for forcing. They are of inferior quality, yet they sell. We can produce better paperwhites than these.

I flower a few for personal use every year, and don't sell any of them, but I'm constantly being asked by people who see my plants if I'd consider selling some. There does seem to be a potential market.



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**In Writing**

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