Daffodils for the yard

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By

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INTRODUCTION

The aim of many home gardeners in the Deep South is to have flowers in bloom as nearly the year around as possible. The least effort it takes to do this, the more likely it is to be done. Flowers from bulbs that can be grown successfully in an area are in general easy to grow. One of the most popular of these is the Narcissus group. Types and varieties that are adapted are very satisfactory and produce an abundance of flowers with relatively little effort. They start blooming very early in the year, and blooms can be had for a period of about eight weeks with a period of about four weeks when many different excellent varieties can be had. Colors vary from so-called white to dark yellow with pink tints in some varieties. They bloom at the time of the year when other flowers are not plentiful and for this reason are especially important. They make excellent long-lasting cut flowers or may be used to add color to the landscape. They should be in all yards where flowers are considered of importance. The cost of bulbs will vary with the variety. The older, more easily increased types are cheaper. Recent introductions are generally expensive and it is usually the daffodil fancier that is willing to pay the price for very new ones. Daffodil bulbs can not be considered especially cheap, though the better established kinds should not be unreasonably high. In general it is best to buy good bulbs from reliable firms.

NOMENCLATURE

The nomenclature regarding the plants of the genus Narcissus is somewhat confused. All are really narcissus but popular usage has divided them into at least three groups—narcissus, jonquils, and daffodils. The variety Paper White is an example of the narcissus, the jonquils have round leaves similar to some onions, and the daffodils include a wide variety of types ranging from the long trumpets to the clustered Poetaz kinds. In this bulletin the above grouping of narcissus, jonquils, and daffodils will be used. Hybrids between different types tend to make any grouping more complicated.

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NARCISSUS

This group consists of *Narcissus tazetta* which originated in southern Europe and is not as hardy as daffodils or jonquils. It is hardy and easily grown in Louisiana. There should be no difficulty in growing the Paper White or the Pearl White Lily (called Creole narcissus in south Louisiana.) Both seem to be immune to the basal rot organism. The Paper White is earlier, often blooming in early January in south Louisiana, but does not produce as large flowers or bulbs as the Creole. Both have a very strong fragrance, and some people are allergic to them. The yellow Soleil d'Or belongs to this group, but it is not as successfully grown as the other two varieties mentioned. The Chinese Sacred Lily also belongs to this group. The main difficulty likely to be encountered in growing the Paper White and Creole varieties is that when they are left in place for several years they may become so crowded that very poor blooms, if any, are produced. They should be dug and separated before this is allowed to happen. If they are grown in insufficient light they can not be expected to produce good flowers.

JONQUILS

Most of the commonly grown jonquils are fairly easy to grow. They are usually early and produce yellow flowers of various sizes, and the number of flowers per bloom stalk varies. They are hardy but not as vigorous as narcissus. They are apparently resistant to diseases causing rot, and a planting should last for many years. They are not likely to become crowded as easily as narcissus.

DAFFODILS

This is the most important group of the Narcissus genus. Classification in this group is not generally agreed upon. It is this group that has the most fanciers. Shapes, sizes, colors, and time of blooming are quite variable. Plants in this group are hardy and extensively grown. Breeders continue to introduce new varieties. One of the main reasons why daffodils are not more generally grown in Louisiana, especially in the southern part of the state, is that difficulty has been encountered in growing many varieties. This is especially true with the varieties in the long-trumpet group.

Because of the interest in daffodils and the lack of reliable information concerning them in this area, it was believed that some experimental work should be done with them. This has been done for six years now. Recommendations in this bulletin are based on results obtained here, those of other investigators, and from observations and experience.
CLASSIFICATION

There is not complete agreement concerning the classification of Narcissus. The following system is believed to be one of the best.

Division 1

Trumpet Narcissus—One flower to a stem; the trumpet or corona as long or longer than the perianth segments; solid colors, bicolours or tinted. King Alfred, Mrs. E. H. Krelage, Queen of the Bicolours, etc.

Division 2

Large-cupped Narcissus—One flower to a stem; cup or corona more than one-third, but less than equal to, the length of the perianth segments; solid colors, bicolours, or tinted. Fortune, Have-lock, Tunis, etc.

Division 3

Small-cupped Narcissus—One flower to a stem; cup or corona not more than one-third the length of the perianth segments; solid colors, bicolours, or tinted. John Evelyn, Brookville, Dick Wellband, etc.*

Division 4

Double Narcissus—Twink, Irene Copeland, Texas, etc.

Division 5

Triandrus Hybrids—Thalia, Silver Chimes, Moonshine, etc.

Division 6

Cyclamineus Hybrids—February Gold, Beryl, Jenny, etc.

Division 7

Jonquilla Hybrids—Golden Sceptre, Trevithian, Golden Perfection, etc.

Division 8

Poetaz Narcissus—Laurens Koster, Geranium, Cheerfulness, etc.

Division 9

Poeticus Narcissus—Actaea, Red Rim, Dactyl, etc.

VARIETY TEST

One of the most important considerations in growing any crop is to plant varieties that are suitable to the area in which they are to be grown. For this reason variety trials have been run. In the fall of 1949 a number of varieties of daffodils were obtained from Holland, and several varieties were sent for trial from the Wilming-

*These varieties are often put in the large-cupped division and varieties such as Diana Kasner, Nettie O'Melveny, and Roman Star are put in the small-cupped division.
ton Experiment Station in North Carolina. The following year some bulbs were obtained from commercial sources in North Carolina and the Pacific Northwest and from a well-known distributing company in the Middle West. The following year small lots of a number of varieties were sent here for trial from a large commercial bulb farm in Oregon, and larger lots of varieties that had seemed promising were purchased from the same source. Some bulbs were obtained from the same source the following two years. Good bulbs were received from all sources, though good results were not necessarily obtained in all instances.

The varieties that have been tested to date are as follows:

Actaea
Ada Finch
Adventure
Aerolite
Agra
Alasnam
Alcida
Beats All
Beersheba
Ben Hur
Brookville
Burgemeister
Gouverneur
Carbineer
Carlton
Carveth
Cheerfulness
China Clay
Crever
Crocus
Daisy Schaffer
Damson
Daphne
Dawson City
Delaware
Dick Wellband
Diotima
Duke of Windsor
Duncan
Early Perfection
Eclair
E. H. Wilson
Erna Rubenstein
Eskimo
February Gold
Firetail
Fortune
Geranium
Gertie Millar
Glory of Sassenheim
Golden Harvest
Golden Pedestal
Golden Perfection
Golden Sceptre
Green Emerald
Havelock
Helios
Holland Glory
Indian Chief
Insulinde
Insurpassable
Irene Bordini
Irene Copeland
John Evelyn
King Alfred
Lady Diana Manners
Lady Kesteven
Lanarth
Lauren's Koster
La Vestal
Le Mogul
Leviathan
Lorelrus
Lovenest
Lucienne
Mekkada
Moonshine
Moulin Rouge
Mount Hood
Mrs. E. H. Krelage
Mrs. R. O. Backhouse
Nettie O'Melveny
Norway
Nova Scotia
Odorus Plenus
Odorus Regulosus
Oliver Cromwell
Old Pheasant Eye
Pirates Gold
Pres. Le Brun
Prominent
Queen of the Bicolors
Quicksilver
Rapture
Red Bird
Red Guard
Red Rim
Rembrandt
Rene de Chalons
Rewa
Roman Star
Roxane
Royal Sovereign
Sarchedon
Scarlet Elegance
Shot Silk
Sir Watkins  Silver Chimes  Silver Star  Spring Glory  St. Agnes  St. Egwin  Successor  Suda  
Sweet Melody  Texas  Thalia  The First  Therapia  Trevithian  Triandrus Albus  Tunis  
Twink  Victoria  Warwick  White Nile  Whitley Gem  Wintergold  Winter Pride  Yellow Cloud  Yellow Poppy  

RECOMMENDED VARIETIES  

These are the varieties that have done best in the test plots to date:  

**Fortune**—This has been the best variety of the large-cupped type that has been grown. When left in place for three years the size has held up very well and loss of bulbs has been slight. It is believed to be one of the best varieties of daffodils to plant.  

**Helios**—Another of the large-cupped type that has done very well in the experimental plots. When left in place for three years the size of flowers deteriorated considerably. There was very little loss in bulbs.  

**Havelock**—Another one of the better varieties of the large-cupped type.  

**Alasnam**—The flowers of this variety of the long-trumpet type are not as fine as those of the King Alfred variety but it has been much more dependable here. It is well worth trying.  

**Brookville**—This variety is a member of a group of varieties that are similar in type to John Evelyn. The blooms are believed to be better than John Evelyn and it is a much more reliable variety. This is considered to be an excellent addition to the varieties that can be highly recommended for planting. It is well worth a trial. The main difficulty will be in finding bulbs to plant.  

**Lucienne**—This is another good variety that is somewhat similar to Brookville but is a little earlier. It is recommended for planting. The main difficulty with this variety will likely be in locating bulbs to plant.  

**St. Egwin**—Another of the flat type daffodils that has done well in the experimental plots.  

**Carbineer**—One of the flat type that has grown very well but the blooms are only medium in size.
Thalia—This has been found to be the outstanding variety in the Triandrus hybrid group. From one to four delicate white flowers are produced per flower stalk. It is a very beautiful, reliable variety that will produce blooms year after year. This variety is highly recommended for planting.

Silver Chimes—Another of the Triandrus hybrids that has been outstanding in the test plots. It is a little later blooming than Thalia and produces a number of smaller flowers per flower stalk.

Golden Sceptre—Most of the Jonquilla hybrids that have been tested have grown satisfactorily. This variety is one of the better ones.

Lanarth and Trevithian are two other varieties of this type that are worthy of trial.

Twink—If a double variety is desired this is a very good one.

Laurens Koster—If one of the Poetaz daffodils is desired this is a good one to try. A number of flowers are produced per flower stalk but they are somewhat smaller than several others in this group.

OTHER VARIETIES THAT MAY BE WORTH TRYING

The following varieties have done very well in plots so far. They are recommended with reservations.

Tunis—Very large, strikingly beautiful, large-cupped type blooms are produced. One of the most showy varieties. Stands have not held up too well, but in spite of that it is believed to be worthy of trial.

Carlton—Another excellent large-cupped variety, the stands of which have not held too well.

King Alfred—This variety can not be left out entirely. The results with it have been variable. In some cases it has done as well as any variety can be expected to do when left in place for three years. In others at the end of three years very few bulbs have been left. This seems to be due to damage from basal rot. One lot of King Alfred bulbs was so badly infested with basal rot that very few blooms were produced the first year. In yards in this area it has been observed that where bulbs have not rotted, plants have been erratic insofar as blooming is concerned. This variety will often be found to be satisfactory. It is a large-trumpet variety.
Mrs. E. H. Krelage—This so-called white-trumpet variety is one that has been frequently found to be satisfactory in yards. It is generally considered to be one of the better varieties to plant. Flower stalks of this variety have been found to have blind buds the first blooming season after the bulbs were obtained, but bloomed normally in subsequent years. No explanation is offered for this behavior. In the experimental plots the behavior of plants of this variety has not been very good.

Mrs. R. O. Backhouse—There are several pink daffodils at the present time, but this was the first important one of this type. It belongs to the trumpet group. Bulbs that were obtained of this variety have not been too solid, nor did they appear in too good condition. Not too much was expected from them. However, in general, results have been fairly good. Plants have not been very vigorous and the blooms not too large. In spite of being a fairly late variety it has held up very well.

Ada Finch—This white-trumpet variety has produced outstandingly beautiful blooms. The only trouble is that the stands have not held up too well. In spite of that it seems worthy of trial.

Gertie Millar—This white-trumpet variety has done very well in the trials. There is a tendency for flower stalks to be short.

Lovenest—Another of the pink daffodil group that has done very well. Plants are not too vigorous and the blooms are not large.

Dick Wellband—In spite of being a late variety this flat type daffodil has done very well.

Of course there are many varieties that have not been tested to date and some of these are no doubt good ones. Of the many varieties tested relatively few can be recommended. Early and medium early varieties have been found in general most satisfactory. Some range in blooming time, however, is desirable in order to have flowers over a longer period of time. Resistance to basal rot is of extreme importance in many areas. Plant breeders will continue to introduce new varieties. If local information concerning adaptability to a given area can be obtained, it should be given consideration. There are two yellow-trumpet daffodil varieties that should be mentioned. They produce very large yellow-trumpet blooms. They are Golden Harvest and Diotima and should be excellent in areas where basal rot is not a problem. Both are very susceptible to basal rot.
CULTURAL PRACTICES

In general good bulbs should produce flowers the first season that they are obtained, because the bloom buds have already been formed when they are bought. This means that the flowers produced the first year are largely determined by the bulbs obtained and are not affected too much by cultural conditions, short of injury. All bulbs, however, do not flower as they should even the first year. Five hundred bulbs of the Beersheba variety were obtained and planted one year and not one bloom was obtained the first year and very few the second year. Excellent blooms were obtained from nearly all of the bulbs of many other varieties from the same source when all were handled similarly. Even the vegetative growth of the Beersheba plants was not vigorous and most of the bulbs were lost before the next blooming season. The ones that did live produced flowers but they were not good ones for the variety. It is a late variety, and that may be a partial explanation as to why better results were not obtained. Late varieties may not bloom until the weather is so warm that they do not do well, but they usually do produce blooms the first year.

One of the main reasons why bulbs of some varieties do not produce blooms the first year is that they are very susceptible to basal rot, which is caused by a fusarium which rots the bulbs before there is time for flower production. Some apparently healthy bulbs obtained for experimental use from reliable sources have been so infested with basal rot that few if any flowers were obtained the first year because the bulbs rotted.

Sometimes good plant growth will be obtained but flower stems will be blind. This means that the bloom stalks will appear, but the buds will dry up and no flowers will open. This is usually caused by some environmental factor, but there may be a varietal susceptibility to this condition.

Even though good flowers may be obtained the first year after buying bulbs, it is very desirable to have varieties that will produce blooms year after year. Not many people could afford or would be willing to buy new bulbs every year. Even when dependable varieties are grown under our conditions it is usual for the bulbs to get smaller and the blooms to decrease in size as the years pass until there is a tendency for a general leveling off in size. If the bulbs are left in place they will normally increase in number and become very crowded. This will tend to reduce the size of bulbs and flowers.

The bulb is a storage organ, and the amount of material stored
and size of the bulb are dependent on the foliage and seasonal conditions. The leaves make the food that largely determines the size of the bulb for the next year. This means that good foliage growth is necessary. Good foliage alone, however, does not insure good bulbs. The rate of respiration in the plant increases with rise in temperature up to an optimum level, and that means that at high temperatures there may be little if any excess food made that can be stored. This is the probable explanation as to why late varieties are in general unsatisfactory in this area.

Some recently reported work indicated that cutting blooms may have some effect on the size of bulb produced. This is because the stem is green and can synthesize food. Daffodils that are grown for cut flowers should be cut even though bulb size is slightly reduced, but for bulb production flowers should not be cut. Seed should not be allowed to form unless there is an interest in growing seedling plants. Sometimes when flowers are cut, some leaves are also cut to add some green to the bouquet. This is definitely injurious to the plant. If leaves must be cut it is recommended that a few plants of some vigorous kinds be grown especially for that purpose.

A certain amount of light is necessary for leaves to function properly in the manufacture of food. If light is insufficient, good results should not be expected.

**PLANTING**

Bulbs should be ordered well in advance of time for planting to help insure obtaining what is wanted. The bulbs should be planted in October if possible, but delivery may not be made until November even when orders have been sent in much earlier. Bulbs should be planted as soon as possible after they are received. Do not plant when the soil is muddy. Good soil drainage is essential if daffodils are to be grown successfully. The soil should be thoroughly prepared to a depth of about twelve inches. Loamy soils are best, but daffodils can be grown in a wide range of soil types. It would be well to mix some sand into heavy clay soil. Well decomposed manure or other organic matter worked into the soil should be beneficial in improving soil texture. Large bulbs should not be planted closer than six inches apart if they are to be left in place for more than one year. If bulbs are set out in rows, double rows may be planted and the space better utilized, if they are spaced so as not to be opposite each other in the row. If bulbs are to be
dug and replanted every year they may be planted closer together than when they are to be left in place.

Bulbs should be covered with two to five inches of soil above the top of the bulb depending on the size of bulb and the soil texture. The larger bulbs should be planted deeper, and on sandy soils deeper planting may be practiced than on heavier soils. If bulbs are planted on ridged rows, the ridges are likely to wash down and the depth of covering become less. Bulbs planted too near the soil surface may be affected by temperature changes more than when they are planted at a greater depth. This may be important in the South during the summer months.

The size of bulbs will vary considerably between varieties. Bulbs of some varieties will be small in size, others medium, large, and very large. There is also considerable variation in size of bulbs of the same variety. The type of bulbs that are generally sold as of blooming size is either "round" or "double nosed." The round bulbs have one growing point and the double nosed have two. The double nosed bulbs should produce more flowers. It is recommended that only the best quality bulbs be bought.

**FERTILIZER**

The application of fertilizer is beneficial to most plants when it is needed and applied properly. A little more caution is needed in the use of fertilizer for daffodils than for many other flowering plants. This is because it has been found that available nitrogen intensifies the damage from basal rot, which is a very serious disease. Most gardeners use fertilizer rather freely because they want to encourage good plant growth. It is very likely that many daffodil bulbs have been lost from basal rot because of the excessive use of fertilizer. As yet no fertilizer experimental work has been done with daffodils at this Station. It is believed, however, that if there is a place for the use of bone meal in a garden, it should be used when fertilizing daffodils. It contains little nitrogen and what is present is in the organic form and slowly available to the plants. Bone meal contains no potash and the addition of potash may often be helpful. Well decomposed manure should also be beneficial. Commercial fertilizers that are low in nitrogen should be used if they can be obtained. If a fertilizer such as 8-8-8, which is not low in nitrogen, is used it should be applied at the rate of about 1 pound per 100 feet of row. Caution should be used in the application of fertilizer. It should be mixed well with the soil. When bulbs are left in place for two or more years it may be applied to the surface of the soil.
DURATION OF PLANTING

If bulbs do not rot, they should multiply, though the amount of increase will vary to some extent with the variety. This means that if a planting of daffodils is taken care of but not disturbed, there should be an increase in number of flowers from year to year. It also means that if left too long without separation there will be crowding. When bulbs are first set the space is not fully utilized. In general where daffodils are well adapted it is believed that the best flower production will be obtained the second year after planting. With most varieties this was not true at the Experiment Station, though with some varieties it was true. There were usually more blooms the second year but they were not as large. The third year there were still more blooms but generally smaller ones. Under conditions at the Experiment Station, bulbs of most varieties got smaller from year to year even if not crowded. Exceptionally large King Alfred bulbs were planted one fall and when dug the next summer only medium sized bulbs were produced. After staying in place for three years only small bulbs were obtained. The size of blooms produced for a given variety is dependent to a large extent on the bulb size. In general the larger the bulbs produced, the larger the flowers. It is believed that the bulbs should be dug and replanted at intervals of three years.

The best time to dig the bulbs is after the foliage has died down. Foliage should not be removed while it is still green. It is after the plant has flowered that the bulb size and bud initiation for the next year’s flower is determined. If bulbs are not to be dug, the holes that are often left by dead foliage should be filled, for they may serve as an entry for insects to get to the bulbs. The bulbs should be replanted as soon as possible after they are dug. Bulbs should not be left exposed to the sun very long. If bulbs are to be kept for awhile before they are planted it should be in a cool, well ventilated place. Bulbs should not be stored in cold storage, especially at 40° F. Bulbs stored at 40° F. produced very early, very poor blooms and the plant growth was weak. Storage at about 40° F. hastens the time of flowering of several kinds of bulbs, but usually the size of plant and number and size of flowers are reduced.

DISEASES AND INSECTS

There are disease and insect problems with nearly any plant that is grown and the daffodil is no exception. The home gardener in general does very little about their control, for usually the bulbs are planted and weeds probably controlled and that is about all that
is done. A little effort expended on the control of insects and diseases would often be well worthwhile. The commercial grower must try to control insects and diseases if he is to be successful. If bulbs could be obtained that had been treated it would be a big help to home gardeners, as they usually will not do it themselves. The most serious disease of daffodils in this area is basal rot, which is caused by a fusarium. This disease probably accounts for most of the bulbs lost due to rot. There are other organisms, such as southern blight (Sclerotium rolfsii), that will cause bulbs to decay. Fusarium is a soil-borne organism. It is especially injurious at high temperatures, and that is one reason that it causes so much damage in south Louisiana. The more the available nitrogen present in the soil, the more likely the bulbs are to be damaged by basal rot. As has been mentioned before, there is some varietal difference in susceptibility to the organism. Only sound bulbs should be planted. There are a number of treatments that have been used to help control the disease, but only two will be mentioned here. One is to dip the bulbs for five minutes in a mixture of 1/4 pound of “2 per cent Ceresan” in 2 gallons of water, then let dry and plant as quickly as possible. The other is to treat for five to ten minutes in a solution of 1/8 ounce of P.M.A. (phenyl mercuric acetate) in 2 gallons of water. The material should be made into a paste with hot water and dissolved in water.

Another disease that is found on all the Narcissus group is mosaic. This is caused by a virus. Plants infected with this virus have leaves that are not clear green in color but are mottled or spotted. The whole plant contains the virus, and there is no control of the disease in the infected plants except to destroy them. It is probably spread by insects such as aphids. If they are controlled it will help prevent the spread of the disease. This disease is likely to be found rather generally. Plants with a mild form of the disease have been observed to live and flower very well in yards for years.

There are numerous other diseases that are important in commercial bulb producing areas but they will not be considered here.

There are not many serious insect pests of the daffodil that the home gardener is likely to have to contend with. There are two that will be mentioned. They are both chewing insects and may cause serious damage to the foliage usually rather late in the season. Such loss of foliage is injurious to the next year’s plant. One of these insects is the zebra caterpillar, which is also very injurious to amaryllis. When small they can be found in compact
groups. They are voracious feeders and grow to be rather large "worms." If not controlled they can eat a lot of foliage in a relatively short time. In late spring, plants should be inspected frequently and the larvae destroyed as soon as possible after they are hatched. The longer the delay the more they will eat. The recommended control is to use a 5 per cent or 10 per cent D.D.T. dust, or spray with 1 ounce of 50 per cent D.D.T. wettable powder per gallon of water. If they are found when they are small and in rather compact groups, an easy method of control is to mash them by tramping on them.

Another insect that eats the foliage is the lubber which, when grown, develops into a very large black grasshopper. They also occur in groups and are heavy feeders. The smaller they are when they are destroyed, the less the damage to the plants. Chlordane used at the rate of 1 tablespoon of 50 per cent wettable or emulsifiable material per gallon of water should control these insects. Sometimes it is easier to mash them than to poison them.