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# NARCISSUS IN THE GARDEN

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Narcissus belong to the most graceful of our bulbous plants, and they are of easy culture. Their color range is being constantly enlarged by the introduction of new varieties so that you may now buy varieties in white, yellow, orange, pink and red in most pleasing combinations and shapes.

There is little difference in time of bloom among the several groups but the varieties within each group are either early, mid-season or late. By proper selection you may have a continuous display for about 5 or 6 weeks in the early spring.

#### TYPES OF NARCISSUS

Narcissus is the botanical genus name for the whole group, which includes the subdivisions commonly called daffodils and jonquils.

The following classification is derived from the relatively new standard set by the Royal Horticultural Society of England. It is largely based on the differences of length of the trumpet or crown in relation to the perianth or corolla, which is the expanded portion of the flower from which the trumpet or crown rises.

**Trumpet Narcissus** or **Daffodils** have trumpets or crowns which are as long or longer than the perianth segments. They may be one of three colors: yellow, white, or bicolor. In the early bicolors the trumpet was yellow and the perianth white. Among the newer hybrids there are some with cream or yellow perianths and pink or orange crowns. Most of the trumpet narcissus are vigorous growers with broad, bluish-green leaves. Some, however, like *N. minimus*, are dwarf. The long trumpet Daffodils make ideal material for naturalistic garden planting and for cut flowers.

**Large Cupped Narcissus** are a group which have a trumpet or crown only one-third to one-half the length of the perianth segments. This is the result of crossing the trumpet narcissus with the *Narcissus poeticus*.

There are two color sub-divisions, those with yellow and those with white perianths. The crowns range in color from soft yellow through orange, pink, crimson, or cherry red. Some are ruffled. All of them have an inspiring beauty.

**Double Narcissus** are much admired by some people, but others do not care for them. They have excellent keeping quality and are well suited for cut flowers. Those of you who enjoy Gardenias

should try the *Poeticus plenus*, a double white flower, like a gardenia with a golden center.

**Triandrus Hybrids** have a delicate fragrance and graceful habit. They are highly desirable for flower arrangements and are excellent for use in a rock garden or in the margin of a border in a semi-shaded location.

**Cyclamineus Hybrids** are miniatures that have the perianth segments bent abruptly backward so that the flowers resemble those of the cyclamen. For best display purposes plant them in clumps of one variety.

**Jonquilla Hybrids** are the true Jonquils. These have almost round, onion-like, dark green foliage as compared with the flat, grayish-green leaves of the other narcissus. They bear two to four fragrant flowers of citron yellow to orange on a stem. Because of their gay beauty and fragrance they deserve a prominent place in the garden.

*Narcissus poeticus*, when seen in bloom, make it easy to understand why they are called Poet's Narcissus or Pheasant's Eye. They are exquisite with their dazzling white perianth and small cup or "eye" with a fiery red edge. This type is among the best for naturalizing, especially in a meadow along a stream or in a border. They are among the last to bloom. When they are placed in a slender vase, their beauty and sweet scent are of rare charm.

*Narcissus poetaz* constitute an important type of bunch flowered narcissus. They originated in Holland from a cross between the hardy *Narcissus poeticus* and the tender *Narcissus tazetta*. The result is a type which is hardy and has a pleasing fragrance.

**Botanical Species and Hybrids:** These species and hybrids contain excellent material for the rock garden, such as the Hoop Petticoat Daffodil (*Narcissus bulbocodium*). They are natives of southern France, Spain, and Portugal. The bulbs always remain small. Their perianth is not greatly developed, but the cup is large and well spread out. A few other species of this miniature group are *Narcissus citrinus*, light yellow; *Narcissus clusi*, pure white; *Narcissus conspicuus*, golden yellow, and *Narcissus viridiflorus*, the so-called green narcissus.

## ORDERING AND CARE BEFORE PLANTING

It is best to buy first class bulbs from a reliable seed store or dealer. You can get a good idea of prices, varieties and colors from their illustrated, descriptive catalogs. To be sure you get the colors and vigor of growth wanted, it is better to see them flowering in a nursery or garden before making a selection.

Narcissus should be ordered early because best results are obtained by planting from late August to mid-September rather than later. Upon receipt, spread the bulbs out carefully in a single layer in shallow boxes or on wire netting and keep them in a well ventilated, dry and shaded location like a garage, basement or barn. Keep the skins intact since they prevent the bulbs from drying out.

## SOILS AND FERTILIZERS

Narcissus will grow to near perfection in any well drained soil. If the soil is heavy clay, the addition of some coarse sand, gritty ashes or small gravel will produce better results. Organic materials, such as rotted stable manure, peatmoss, leafmold, commercial forms of humus, or compost, will improve the physical condition of the soil and its water holding capacity. Where peatmoss is used, mix one pound of ground limestone thoroughly with each bushel of dry peat before working it into the soil. The limestone will help neutralize the acid peatmoss. Additional lime will not be advisable in most cases since narcissus thrive in a slightly acid soil.

The soil should be of average fertility. High rates of fertilizer, especially nitrogen, will result in excessive dividing of the bulbs. This is, of course, desirable if you wish to reproduce a new and expensive variety rapidly, but it is not conducive to flower production. Heavy fertilization may also result in greater bulb rot when bulbs are stored. Color and size of foliage are good indicators of the soil fertility level. Large and bluish-green leaves indicate an excess of nitrogen, whereas small and light green leaves indicate a lack of it.

Ground bonemeal, which is approximately a 3-16-0 fertilizer, is excellent for narcissus because it is low in nitrogen and slow acting. Wood ashes used with it will supply potassium, often called potash. Apply 3 to 4 pounds of bonemeal and 5 to 6 pounds of wood ashes to each 100 square feet of soil. Complete fertilizers, which have peatmoss or manure as a base, are also very

good. Always follow directions on the containers. On medium loam or heavy soils a 5-10-5 or 4-12-4 fertilizer can be used to good advantage, but on sandy soils a 5-10-10 ratio or one closely akin is more desirable because sandy soils are naturally low in potash. Use any of these combinations at the rate of 2 to 3 pounds to each 100 square feet of soil.

*No matter which fertilizer you use, be sure to mix it thoroughly with the soil before planting.*

Since it is mostly during and after the flowering season that bulbs use plant food materials, it is sometimes desirable to apply additional fertilizer in the early spring. Particularly sandy soils, which leach readily, may benefit from such an application. Remember that your best fertilizer guide is size and color of foliage.

In the early spring liquid fertilizers are most effective and are immediately available. Follow directions on container when applying a liquid fertilizer to soil and around plants. Do not get liquid fertilizer on leaves because it may "burn" them unless it is washed off immediately with a hose.

Plant nutrients must be in solution before they can enter the plant. Therefore, an ample water supply is essential, but the soil should not be waterlogged. Since the narcissus flowering season occurs in March and April, nature usually provides a generous amount of water when it is needed most. On a high embankment or on sloping land, artificial watering is beneficial if the spring season is dry.

#### LOCATION

Because of their simplicity, beauty and grace narcissus are ideal for naturalization. On the margins of brooks and pools, in the informal border, under fences, beside hedges, among thin shrubbery, or in woods, they are highly attractive. They thrive in either full sun or partial shade, but in the latter situation they will flower over a longer period because of cooler soil and cooler air. If you plant them near a pool, brook or lake make sure that there is sufficient drainage because a soggy soil will result in bulb rot.

Bulbs planted in a corner where they are shaded during the warmest part of the day will produce flowers with better keeping quality than those exposed to wind and strong sunshine.

Narcissus do not lend themselves to formal planting because of their inherent grace and informality of contour.

To secure a naturalistic effect you should avoid planting in rows or formal designs. A good plan is to scatter the bulbs like seed, and plant them where they fall. However, if they drop too close together space them 3 to 4 inches apart to allow room for proper development of root and tops.

Charming color effects can be made by massing them along drives or walks with blue grape hyacinths, squills, rose and blue hepaticas, primroses and forget-me-nots. Some narcissus, such as *Narcissus triandrus*, *cyclamineus* and *minus* are well adapted to the rock garden, and they thrive in gravelly soil.

Narcissus are charming in woodlots or under a few trees, but under these conditions they will succeed only if they are given extra fertilizer and water if a dry spell occurs during the ripening period of the foliage.

#### WHEN, WHERE, AND HOW TO PLANT

The best time to plant narcissus is from mid-August to mid-September. They will make roots earlier than most other bulbous plants. Bulbs with a strong root system will give rise to better flowers than those with a small root system. Just keep the following in mind: no roots --- no flowers; poor roots --- poor flowers; good roots --- good flowers. It is regrettable that many dealers do not deliver narcissus bulbs until late October, or even November in the case of imported bulbs. The foliage and flowers on such late planted bulbs will be relatively small the next spring, but the following year they will be able to show their true qualities and vigor.

#### DEPTHS OF PLANTING

Authorities differ considerably as to the depth of planting. To plant in the open, the safest rule to follow is to cover every bulb with twice its own depth of soil. The bulbs vary greatly in size according to the variety, some being less than one-half inch in diameter. The depth of planting will, therefore, vary from one inch to six or eight inches for the large sizes. Shallow planting causes rapid development of small bulbs resulting in many leaves and few flowers. This, of course, necessitates frequent separation and replanting of the larger bulbs. If narcissus are planted at the proper depth, they will need no further attention for two or three years. Lifting and separating become necessary only when flowers become few and small. To avoid rapid multiplication, bulbs may be set deeper than indicated if the soil is well drained.

Also, deeper planting is desirable if something else is to be planted above them or if they are colonized in the perennial border among herbaceous perennials that are rather shallow rooted.

### SPACING

Narcissus of the smaller sizes may be spaced 3 or 4 inches apart while larger ones require a spacing of 8 inches for proper growth. Close spacing results in under-developed flowers and foliage and, due to crowding, prevents each flower from showing its intrinsic beauty. Place the bulbs on top of the prepared soil in the exact spot where you wish to plant them. Start planting at the front and work toward the back.

### TOOLS FOR PLANTING

Small bulbs can be planted with either a trowel or a dibble. If you use a dibble put a handful of screened soil or sand in the bottom of the pointed hole to avoid an air space underneath the bulb. This will insure solid contact between the base of the bulb and the soil and thus encourage early rooting. Larger bulbs are best planted with a trowel because a dibble hole will not be large enough to set them at the proper length.

### MULCHING

If you plant narcissus at the proper time, August and early September, so that strong roots develop before winter, you will not need to mulch except in very exposed locations or where there is danger of soil erosion, such as a slope.

If you plant the bulbs in November or December, it is wise to cover the soil with a 4-inch mulch of straw, hay, oak leaves or other loose organic material to prevent heaving due to alternate freezing and thawing. Apply the mulch as soon as soil freezes to a depth of 1 or 2 inches. The insulation provided by the mulch will prevent deep freezing and permit root development.

In the spring, after the danger of severe frost is over, gradually remove all but 1 inch of the mulch. The layer left on the ground prevents baking, adds organic matter, and preserves moisture.

### REMOVAL OF FLOWERS AND LEAVES

To prevent seed formation, remove flowers when they fade. Development of seeds exhausts the plant and results in smaller bulbs to flower next year. Retain seed pods only if you wish to

use the seeds for the production of new varieties. It takes at least five years for seedlings to flower and about 95 percent of them are inferior to the parent plant.

Leaves should be retained until they turn yellowish green. This occurs in the smaller varieties by the end of June, but the foliage of some of the large, new hybrids may not ripen until September.

It is after flowering, while foliage matures and bulbs ripen, that narcissus gain most in size and form flower buds for the next year. This process of maturing and ripening can function properly only, when the leaves are allowed to manufacture plant food until they turn yellow.

#### COMBINATIONS WITH OTHER PLANTS

Yellowing leaves on narcissus are definitely unsightly, but this can be partly overcome by tying the leaves loosely together at the top, forming a tepee-like structure, or by taking a bunch of leaves and tying a loose knot with them. Be sure that this tying is done loosely so that light and air can circulate between the leaves and prevent rotting.

A very effective way of hiding this unsightly foliage is to use perennial cover plants. What you will use for this purpose will depend largely on the location of the bulbs and whether they are in full sunlight or in the shade. Cover plants not only act as a screen for the yellowing foliage, but they indicate approximately where bulbs are planted, enabling you to locate them quickly at dividing time and prevent injury when working among plants. A few good cover plants for a partly shady location are Astilbe, Alkanet (*Anchusa italica*), Bleeding Heart (*Dicentra spectabilis*), Columbine (*Aquilegia*), Coral Bells (*Heuchera sanguinea*), Plantain Lily (*Funkia*), Evening Primrose (*Oenothera*), Foxglove (*Digitalis*), Globe Flower (*Trollius*) and Gas Plant (*Dictamnus*). A variety of ferns make good cover plants, but avoid those that form a sod, such as the Hayscented fern. A few good cover plants for a sunny location are Japanese and Siberian Iris; Blackeyed Susan (*Rudbeckia*); Leadwort (*Ceratostigma plumbaginoides*), often called (*Plumbago larpentae*); Chrysanthemums; Day Lily (*Hermerocallis*) and Falso Indigo (*Baptisia*).

#### LIFTING AND SEPARATION OF BULBS

Under favorable conditions narcissus plantings may be left undisturbed from 6 to 10 years. When flowers gradually become smaller

and fewer while leaves increase in abundance, it is well to lift and replant them. On this occasion the larger bulbs may be selected for replanting, and the smaller ones may be used for increasing the stock. There is no need for storing the bulbs until August. You may plant them immediately, and they will soon start to make roots. It is of course essential that the soil be properly reinforced with organic materials and fertilizers as described under the heading, "Soils and Fertilizers."

#### STORING BULBS

If you store bulbs temporarily, remove all the yellow foliage and air-dry them for a few days in a shady spot. Afterwards store the bulbs in a cool, shady, airy, and dry location. High humidity in storage promotes root development of narcissus bulbs, and these roots are injured when the bulbs are planted. Trays with bottoms of hardware cloth, which allow air to surround the bulbs, are ideal. It is also satisfactory to store them in a single layer in flats.

#### PROPAGATION

Narcissus are reproduced by natural division (splitting) of the bulbs or by seeds.

Young bulbs form within the mother bulb and are first encased within the scales of the mother bulb. Later they form small individual bulbs.

Types of bulbs in the trade are classed as "splits" which are rather flat and not yet of flowering size; "round" bulbs which have one growing point; "double nosed" which have two growing points within the bulb and are usually the best buy, and "mother" bulbs which have formed several divisions. Each of these stages is approximately one year older than the previous stage.

A seedling one-year-old will have a round or slightly elongated bulb. During the second and third year it continues to elongate. The seedling bulb reaches maturity in about 5 years.

#### NARCISSUS AS CUT FLOWERS

Narcissus are excellent cut flowers, and due to their simplicity and grace, they can be arranged in a most effective manner. These flowers should be cut just as the buds begin to open. Remove each flower stalk at the surface. If foliage is desired, take only one or two leaves; however, it is better to grow some cheap variety for this purpose.

To prolong the life of the flowers place stems half their length in a roomy vessel filled with water, then put the container in a cool, dark place for a few hours. After that, arrange the flowers in a vase to suit your taste. At night place them in an unheated room and your flowers may last almost twice as long as those left at ordinary room temperature.

### TROUBLES

Narcissus will be relatively free from diseases and insects because commercial growers take extreme care to deliver only sound bulbs. It is well, however, to observe a few precautionary measures.

*Sanitation* will ward off the greatest danger of infection. Keep the beds clean and avoid crowding bulbs, which retards air circulation.

Newly purchased bulbs must be hard and plump. Any bulbs with soft spots should be destroyed by burning.

**Brown tipped leaves** in the spring indicate nothing more than frost damage and will not seriously affect the quality of the flowers.

Bulbs with withered, stunted growth or with a sickly color should be lifted with their roots and some of the surrounding soil and destroyed by fire. Let no sentimental hope stay your hand.

**Blind bulbs** are those which, although of flowering size, produce only leaves and no flowers. This blindness may be caused by excessive temperatures after digging or by temporary over-heating in storage or in shipment, which kills the embryo flower within the bulb.

**Short stems** and uneven growth is produced by too short a storage treatment. The ripening process, which involves chemical changes within the bulb, was not completed.

**Excessive splitting** of bulbs and consequent poor flowering are at least partly due to shallow planting or excess nitrogen.

**Narcissus nematodes** cause the so-called eel-worm disease. This trouble has been kept under such strict control by the commercial growers that it has all but disappeared. The leaves are distorted and show yellow green pimples which can be detected by feeling. The movement of nematodes is aided by splashing water. Ethylene

dibromide is an excellent nemacide. It is also effective against wireworms and other insects. It should be used when soil temperatures are above 70 degrees F, and at least two weeks must lapse before replanting. Follow directions on the container implicitly.

Basal rot is caused by a soil inhabiting fusarium. The decay usually begins in the root plate at the base of the scales and from there spreads through the inside of the bulb. It shows as a brown discoloration. Gardeners should examine the root bases of bulbs and destroy by fire any which are obviously diseased. Bulbs which are in perfect condition in August or early September will sometimes become soft if kept too long out of the ground. This is another valid reason for the early planting of narcissus bulbs.

Commercial growers control basal rot by providing perfect drainage and destroying infected bulbs.

Narcissus mosaic or gray disease is a virus of the mosaic type. Some varieties are more prone to it than others. All parts of the plant are affected, but it is principally indicated by an uneven distribution of the green coloring matter in the foliage, causing a streaked appearance. These streaks show also in the flowers. The plants indicate a decided lack of vigor. Our best control is roguing of the stock which means destroying bulbs, roots and foliage by fire and controlling aphids or green plant lice. A spray of one teaspoon of nicotine sulfate and two teaspoons of soap flakes to one gallon of water will destroy the aphids. Young bulbs produced by infected bulbs will also be infected.