

Care of Adeniums – Karoo Rose

This plant, belonging to the Dogbane family (Apocynaceae), is native to the deserts of south and east Africa and the Arabian Peninsula. In their native environment, *Adeniums* flower in late winter, producing an abundance of pink to red somewhat tubular flowers that, if pollinated, produce long fingerlike double fruits. Oleander is in this family and the similarity in flower is obvious. But unlike oleander, *Adenium obesum* is a succulent plant. It is able to store water in its stem and branches to sustain it through seasons of little or no rainfall. It is this succulent characteristic that makes it most interesting in appearance and also makes it ideally suited to container culture here in the arid southwest.



Light Requirements: *Adenium obesum* needs the maximum amount of light available, up to and including full sun, during its growing season. Here in the Southwest our growing season can safely be considered to extend from April through October. During this time *Adeniums* should be grown in very bright light and if the plant is large enough, in full, blazing sun. Bright light in this case does not mean a south or even a west window in the home. For the very best growth these plants should be grown outdoors in filtered sunlight like that under the canopy of a sparsely branched tree (mesquite), or near the edge of the canopy of a more densely branched tree (blue palo verde). If the specimen is of sufficient size, it can be

grown in full sun. As a general rule, if the plant requires a ten-inch or larger pot, it should do well in full sun. This is not to say that large plants have to have full sun. They will perform quite well in light shade.

At the end of the growing season, with the lowering of temperatures, *Adeniums* will drop their leaves (usually) and go dormant. It is at this time that the plants can and should be brought indoors because of the possibility of freezing temperatures. They do not need much light at this time, but they should not be put in the dark. Preferably, a south or west window would be best, but any bright location in the home should suffice. In warmer areas in the Southwest, a covered porch near the house will work for overwintering *Adeniums*.

It is important to note that the plant must be returned to proper light conditions prior to resuming growth in spring. If it starts to leaf out and grow indoors (this is possible all winter long if house temperatures are too high) these leaves will sunburn and probably drop off when put outside. However, if this does occur the plant will usually recover quickly and simply re-leaf with sun adapted leaves. It is also possible to sunburn the stems if the plant is put out into full sunlight too quickly or before it has leaves. This is more serious but can be avoided by easing it out into full sun, or taking steps to temporarily shade the stems in some way (e.g. cut branches from any available tree or shrub and lay them against the stem for several days).

Under some conditions, *Adeniums* can be grown indoors, but only in rooms that have a multitude of windows (and preferably a skylight) with extremely bright light and good air movement. It is also recommended that the container be periodically rotated to prevent one-sided growth. If grown indoors, the plant probably won't go dormant in the fall unless water is withheld.

WATERING: *Adeniums*, like all succulent plants, have the ability to store water. In their native habitat they live and grow only on the available rainfall, storing water in wet times to sustain them through drought. In extreme drought, even during the growing season, they can drop their leaves and become 'drought dormant', only to re-leaf with the first available moisture. These arid conditions do not adversely affect the plants other than to cause them to grow more slowly. This is a characteristic to be taken advantage of in cultivation. *Adeniums* can be left for long periods (the larger the plant, the longer the time) without the need to be watered and only suffer a setback in growth, but no adverse effect on the health of the plant. However, it is extremely important to realize that a container grown plant has its entire root mass confined to the pot, (unlike a plant in the ground that can actually grow roots in search of available soil moisture) and so is dependent on an outside source of water (YOU!) to survive and grow.

On the other extreme is the nurseryman who maintains a watering schedule to keep the root zone constantly moist during the growing season so as to not lose any growing time or energy. The plant might be watered as often as several times a week or even every day, depending on the soil mix used. *Adeniums*, like most desert plants, respond to water and can grow many times faster in cultivation than in the wild, providing temperatures are high.

Somewhere between nature and the nursery is the home growing situation. For general good growth and overall good appearance it is recommended to water regularly and to let the soil almost dry out in between waterings. The best way to decide when to water is to check the soil, with your finger, at about one to two inches deep. If it is almost dry, water; if it is not, wait until it is. There are several factors that will influence the timing here.

Light plays a major role in determining how much water a plant uses. The more light a plant receives, the more water it needs. Related to light is temperature. Up to a point the higher the temperature, the higher the water use, although in extremely high temperatures most plants will actually slow down functions in an effort to conserve water. It is at these times that some containerized succulents are prone to rot if the soil moisture is too high. *Adeniums* are extremely heat tolerant, to at least 120°F, and usually do not have this problem. Another factor involved in determining water requirements of a plant is air movement. Most plants do best with good air circulation, but not a continual wind. The more air movement, the greater the water use. The length of time a plant has been in a specific pot size can also affect watering. As a plant grows in a given pot, it displaces soil for root mass. Since water is held in potting soil, the less soil there is, the less water there is available to the roots. Once the soil moisture is depleted, succulents begin to use stored moisture. If this condition persists, the plant will cease active growth.

As a rule of thumb, if an *Adenium* is potted in a well drained soil mix and is in a properly sized pot and under proper light conditions, it should be watered anywhere from three times a week (6 inch pot) to every two weeks (20 inch or larger pot) during the peak of the growing season, tapering at both ends of the growing season. Unless the plant is to be grown through the winter (under greenhouse conditions only) it will require a minimum amount of water to maintain it through its dormancy. This is variable also, but for a dormant plant it will be from once a month (6 inch pot) to possibly not at all (20 inch or larger pot), again depending on the ambient conditions. If *Adeniums* are overwintered at nighttime temperatures of 50°F or less (either inside or outside) they should be kept bone dry regardless of the pot size.

For all pot sizes regular watering should not be resumed until temperatures warm and the plant starts to show signs of growth or flowering. This normally occurs in the beginning of April (unless kept in a greenhouse in which case the resumption of growth and flowering will take place earlier depending on greenhouse temperatures). Any watering of a plant should provide a thorough drenching of the soil, with some amount of water draining through the pot, so as to wet the entire soil mass and to prevent salt buildup.

FERTILIZING: Under natural conditions plants utilize nutrients in the soil they grow in and to a limited degree will grow roots into 'fresh' soil when needed. In a container a plant can use up the available nutrients in a relatively short time. When these nutrients are depleted, growth slows and in the extreme will stop or become distorted. Also, nutrients are leached out of the soil with watering. Under ideal conditions (usually only achieved in the nursery) *Adeniums* can be fertilized with what amounts to a full strength application of a general purpose fertilizer every two weeks. Under most home conditions, and only if the plant is healthy, a half strength solution applied once a month during the growing season (April – October) of any available house plant food will be adequate.

TEMPERATURE: In their native habitat, *Adeniums* are not subject to freezing temperatures. Here in the arid southwest we regularly experience sub-freezing temperatures. (Tucson averages twelve nights below 32°F.) This is a major consideration in growing *Adeniums*. They must not be allowed to freeze! Most often this is simply a matter of moving the container to a protected location. If possible it is desirable that the plant have good light throughout the winter, such as that available through a sliding glass door, just inside the house from the patio. The further into the house the plant is, the less light available to it. If overwintered inside, unless it receives very bright light, an Adenium should be allowed to go dormant. If home nighttime temperatures stay above 55°F, dormancy may need to be forced by withholding all water until the leaves drop. If indoor night temperatures are too high (70°F) the plant may try to grow. This is an undesirable situation causing weak, etiolated (thin, light-seeking) growth and an alternative overwintering area should be found. If a plant does experience this type of growth, it is best to prune it off after being moved outdoors in the spring.

Adeniums can be overwintered outdoors if kept in places that are **absolutely frost free and dry**. Nighttime temperatures around Tucson (and Phoenix) vary, but generally most homes have a frost free area outside against a wall, under cover of a solid roof, and even better, on the south side of the home, under a porch roof. Under any circumstance, outside *Adeniums* should be completely dry (both from rain and watering) at temperatures under 50°F. If outside temperatures are expected to drop to the twenties, even plants under a roof should be moved or covered. The best covering consists of at least two layers with the outer one being plastic, simply draped or suspended over the plant. Some very good single layer frost protection cloths are now commercially available.

When considering low winter temperatures, it is important to understand your home's specific conditions. Sites around town can vary by ten degrees or more and locations outside the house are equally variable. If you are unsure of outside low temperatures it would be safest to overwinter your plant indoors. When an *Adenium* is subjected to freezing, the stems will die back to a greater and greater diameter with increasingly lower temperatures until the plant is killed. If the stems are frozen, they should be pruned back to that point before or just after growth resumes in the spring. If left unpruned, this dead plant material can start rotting that could spread to and kill the rest of the plant.

GROWTH and FLOWERING: *Adeniums* are naturally slow growing. A great deal of this slowness can be attributed to minimal water. But it is this very lack of water that makes for some of the most interesting growth forms of the plants. In cultivation a balance can be achieved that will promote faster growth and maintain desirable 'natural bonsai' character. In the nursery under ideal conditions, the fastest growth rate is usually achieved. Under most home conditions something less would be expected. But fast growth, or in some cases any growth at all, is not necessarily desirable. Specimen size plants or plants in decorative containers are usually desirable to keep in their present situation for long periods of time. In this case, watering and especially fertilizing should be kept to a minimum, letting the soil stay dry longer and fertilizing only once every two months during the growing season.

Flowering is generally expected to start in late winter or early spring, often before the plant even leafs out. It will often continue, sometimes with a stop during the hottest part of our pre-summer (mid-May through June), into fall. Some individuals will flower only in the fall, but if kept warm enough and well lighted, some (typically the hybrids) will flower virtually year round. The colors range from white to pale pink to solid, bright red. Some are bi-colored with only a red edge and white center, but almost all (excluding the solid reds and pinks) have a white throat. The flower size on different individuals will vary from one and one half to four or more inches in diameter. Most of the plants available today have been selected for superior flower color and size. The flowers are moth pollinated and although the specific moth that pollinates *Adenium* does not occur here, occasionally pollination and fruit set does happen. For breeding purposes, these plants are hand pollinated.

SOIL and POTTING: The basic characteristic of potting soil for *Adeniums* is that it be well drained. This means that water should drain through the soil in a matter of seconds after being applied. A good potting mix with the addition of an equal part of pumice or clean, small gravel (preferably granite) will work well. Good commercial 'cactus' mixes are available. There are many recipes for soil and every grower will use a different one. It is a good idea to find one that you and your plants like and stick with it as your cultural habits (watering and fertilizing) are somewhat dependent on the soil mix used.

Adeniums will tolerate being pot bound without ill effects. They can continue to grow roots to the point of distorting plastic pots and even breaking clay or stoneware pots. Repotting *Adeniums* should be done only during the growing season and not late in that season. When repotting is desired, it is usually a simple matter of putting the plant, with its rootball intact, into a larger pot and filling in with the soil mix, making sure not to bury the plant deeper than it was. Since these plants usually have a large root/stem just below the soil line, some of this can be exposed by removing a layer of soil and filling in beneath the plant to raise it up. Removing the old pot can sometimes be a problem and occasionally a hammer may be needed to break apart the old pot. *Adeniums* can be watered within a day or two of repotting.

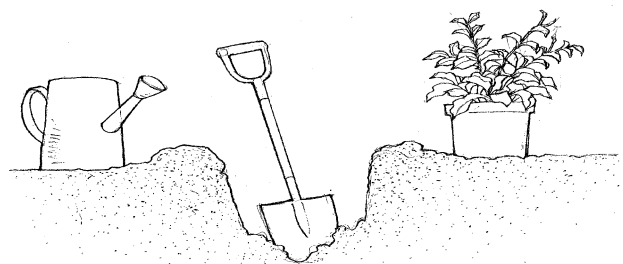
PESTS and DISEASES: In cultivation *Adeniums* are rarely subject to diseases, but are occasionally hosts for one of three insect pests. Mealy bugs, aphids and spider mites can all inflict damage on these plants. Although usually not serious, these pests can cause distorted growth and ruin flowers and flower buds. Outdoor growing (plants love good air movement) in most cases will prevent these problems, but occasionally an infestation will occur. For spider mites and aphids a jet of water aimed to physically dislodge the pests will often suffice. This treatment may need to be repeated several times for complete control. If the mealy bugs are not overwhelming, a cotton swab dipped in alcohol will kill all of them that it touches. This should also be repeated for several days. There are numerous commercial preparations available for these insects, but it is best to avoid their use if possible because of the possibility of harm both to your plant (phytotoxicity, time of day of application, dilution rates) and you.

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