

Adenium

THE GENUS ADENIUM IN CULTIVATION

A.OBESUM AND A.MULTIFLORUM

Adenium obesum (Desert Rose)

Adenium obesum even as narrowly defined here is a highly variable taxon in growth and flowering habits. It occurs nearly all the way across Africa in a broad band south of the Sahara, from Senegal to Sudan . Most plants in cultivation are of unknown origin, so it is not known how much of the natural variation of this wide-ranging taxon is represented. The few documented plants known to the authors are from southeastern Kenya, except for A.o. var. *coetatum*, which is reportedly from Arabia.

Adenium obesum is a shrubby plant. The thickened stems taper gradually upwards and may be rigid and upright or, less commonly, rather weak and spreading. Young plants have a small, ovoid caudex, and old specimens in habitat have large caudexes. Mature plants in cultivation, however, usually lack a distinct one.

Therefore this species is not, strictly speaking, a caudiciform in cultivation. The leaves range from narrow-linear to quite broad (but never as broad as those of *A.multiflorum*), and from bright, shiny green to light, dull green.

Adenium obesum is potentially semi-evergreen: if kept warm and well watered, plants will grow and often flower through the winter. Under such conditions they undergo only a brief leaf-drop and dormancy, usually a few weeks in spring or early summer. They can also endure a drought or cold-induced dormancy of several months, which is the normal condition in nature.

The flowers are pale pink to deep red on the petal margins, always fading to near white toward the throat. The throat is white, sometimes with faint red nectar guides. The anther appendages are long, equaling or exceeding the throat. Flower size averages about 6-7 cm (2 inches) in diameter, but this is quite variable among clones.

Flowering habit is extremely variable and is influenced by both cultural and genetic factors. When grown under ideal conditions of ample heat and water, some clones flower for two to four months; some clones are nearly everblooming. Most plants slow their growth and stop flowering when temperatures exceed about 100 degrees F, which occurs from about mid June to early August in Tucson.

Seed-grown plants are typically vigorous and can be flowered in as little as 8 to 12 months. Cutting-grown plants are equally vigorous; their roots become greatly enlarged in a couple of years and can be exposed when the plant is repotted to make a more interesting specimen. After several years the stems also will have

thickened such that cuttings are indistinguishable from seed-grown plants. This is by far the commonest taxon of the genus in cultivation.

Adenium multiflorum (Sabi Star)

Adenium multiflorum is very different from **A.obesum** both horticulturally and geographically. It occurs on the east side of southern Africa, in Mozambique and the countries bordering it on the west and south.

In nature the plants are tall, multiple-stemmed shrubs. In cultivation they are always thick, sturdy, and upright. As in **A.obesum**, there is no distinct caudex in mature cultivated plants, but they have very enlarged stems and roots. Seedlings have a prominent, ovoid caudex for the first several years. The leaves are large and very broad.

In distinct contrast with **A.obesum**, this species has an obligatory long winter dormancy. Regardless of growing conditions, the leaves fall in autumn; growth will not resume for at least four months, longer in cool or dry conditions.

Adenium multiflorum flowers profusely for two to four months in winter while leafless, never at other times. The petals are white with sharply defined red edges. There are always 15 prominent red nectar guides in the white throat (three per petal). The anther appendages equal or exceed the throat. Flowers average about 6-7 cm (2 1/2 inches) in diameter, and the petals are more pointed than those of **A.obesum**.

Adenium multiflorum grow vigorously from seed, but mature at a larger size than plants of **A.obesum**. Plants rarely flower until they are 4 to 5 years old. Cuttings of **A.muitiflorum** develop thick roots and stems and make good specimens after a few years. This taxon is in cultivation but is a distant second to **A.obesum** in availability, probably because of its slower growth and shorter blooming season.







The Desert Rose (*Adenium obesum*)

The Desert Rose (*Adenium obesum*) Prepared by John McLaughlin and Joe Garofalo

Perhaps the principal misconception about desert rose concerns the perceived difficulties associated with growing the plant in a wet and warm climate such as that found in South Florida. Desert rose is, however, quite commonly cultivated in humid tropical areas such as Thailand, India and The Philippines. Growers in Thailand have produced hundreds of new varieties that are gradually being introduced to the US. If some simple precautions are taken, desert rose will grow into a spectacular low maintenance shrub for the South Florida landscapes, contributing both its distinctive form and an abundance of exceptionally showy flowers.

CLASSIFICATION.

The desert rose is usually simply referred to as *Adenium obesum*, however, the fuller name is *A. obesum* var *obesum*. In older literature desert rose may be referred to as *A.arabicum*.

The genus *Adenium* contains only one species, which is divided into several subspecies or botanical varieties. Some authors, however, recognize separate species. All are native to semi-arid climates. The name *Adenium* is derived from the Arabic name for the plant, *Oddaejn*, which means *Aden*, the former name for Yemen.

Adeniums are in the Apocynaceae (dogbane family), which includes mostly tropical species, such as Beaumontia, Carissa, Allamanda, Mandevillea, Nerium, Plumeria, and Tabernaemontana, which are widely used in warm climates. Most of these plants produce varying amounts of milky sap, which can cause skin irritation or, as with desert

rose, more severe internal poisoning.

ORIGIN.

A. obesum is found in sub-Saharan Africa from The Sudan into Kenya and westward to Senegal, and south to Natal and Swaziland. A few occur in the SW corner of the Arabian peninsular (Yemen).

DESCRIPTION.

Adeniums are pachycaul (with thickened stems) succulent shrubs or trees, with a distinct swollen base (caudex), much of which can be underground. Above ground the caudex can be almost globose to conical, narrowing before dividing into numerous irregularly spaced branches. In their native environment the plants are variable in appearance and floral display, but are usually slow growing and long lived, surviving for hundreds of years. In cultivated, mature specimens, a definite caudex is often no longer discernable. The branches are smooth, grayish green to brown with terminal, spirally arranged, small, glossy green leaves). In areas where they are indigenous, winters are dry and sufficiently cold to induce a period of dormancy with an associated loss of foliage. In South Florida plants tend to lose many (but not all) of their leaves in winter, especially during extended, dry, cool weather. However, they never become completely dormant. Flowers. As with many members of the Apocynaceae (e.g., oleander and frangipani), flowers are salverform (tubular with flared lips), and range in color from deep purplish red, through pink to white. The many cultivars have flowers of various color blends, shapes and sizes (up to 3 inches). A few have the added bonus of an attractive fragrance.

Small, terminal clusters (corymbs) of flowers are produced during most of the year, though in some cultivars flowering is more restricted. In Florida, desert rose is at its showiest during the drier months of the year, from late winter to early summer, and can be almost totally covered in blooms.

Fruit. The fruit, which is classified as a follicle, splits along one side to release seeds bearing a pappus (tuft of hairs which aids in dispersal)) at each end. Seed production is not reliable, since pollination is often not successful, due to plants in cultivation being male or female sterile.

PROPAGATION.

As stated above, propagation from seed is not reliable because of pollination problems. For those developing new varieties, hand pollination using male/female compatible plants is necessary to ensure the production of viable seed. If fresh

viable seed is available, germination rates are high if it is used promptly. Remove the pappus, dust the seeds in fungicide and sow in a sterile, sandy, free-draining soil mix. Germination occurs within a week at 85EF, and after a month seedlings should have at least 6 true leaves and be ready for transplanting. Seed grown plants will often flower the same year, and should be watered as needed and given regular applications of fertilizer.

The easiest method of propagation for most gardeners is by means of cuttings. Tip cuttings, preferably leafless, of about 5 inches are dipped in fungicide/rooting hormone and placed in a 75/25 mix of Perlite and Canadian peat that is just damp. Rooting can be speeded up with misting and bottom heat. Inspect cuttings for new leaves and discard any that exhibit signs of wilting.

Cleft grafting requires somewhat more skill, but is claimed to be more reliable and therefore preferable for valuable hybrid varieties. Rootstock and scion should be matched for size, with the rootstock being pruned about 3 inches above the caudex. Cut inch from either side of the severed end of the scion to form a wedge. A vertical inch

incision is then made across the cut surface of the rootstock, into which the trimmed scion is inserted so that the cambial layers of cutting and rootstock are in contact. Use grafting tape to wrap the join.

Air layering has been used to propagate desert rose to a limited extent, and if successful, roots will form in 6-8 weeks. Success is more likely during hot, humid weather.

PLANTING AND MAINTENANCE IN THE LANDSCAPE.

The two principal considerations when growing desert rose in the landscape relate to light exposure and soil moisture. Temperatures are of concern if they regularly fall below 35EF, when the plant should be grown in a moveable container (see below). At 40EF branch tips will be damaged, however the plant will survive.

Desert rose requires full sun under South Florida conditions; plants grown under excessive shade will flower poorly, are more liable to appear leggy and are prone to develop disease. Some growers choose to expose more of the underground part of the caudex as the plant grows, at which time it is necessary to protect this newly exposed portion of the plant from direct sun.

The steps necessary to control soil moisture should be reviewed before the desert rose is planted in the landscape. These include: constructing a raised bed in areas that are liable to flood or where drainage is poor; using a free draining soil mix; choosing a site in full sun and with good air circulation, and avoiding areas of the landscape where

automatic sprinklers are used. To construct a raised bed, use rocks and loose rubble (e.g. debris from holes dug in the ground for other plants) to build up a berm

(mound with a flat top), 12 – 18 inches above the surrounding terrain. Cover with a 2-3 inch layer of 75:25, sand:top soil, then soak well with water, and leave the mound to settle for a few

days. Before planting the desert rose, create a depression in the top of the berm deep enough to accommodate the plant, which should be installed no deeper than it was growing in the container.

Whether planting in a raised bed or directly in the ground, use as backfill any free draining soil either mixing your own (1 part Perlite, 2 parts sharp sand and 2 parts coir of Canadian peat), or amending any soil-free potting mix with sharp sand, Perlite or pumice. Avoid damaging the roots during planting, since they are liable to become infected with

soil borne pathogens and rot. Do not use organic mulches around the plant, however river gravel or lava rock can be used to improve the appearance of the planting area. If you have used a raised bed consider planting other heat loving plants (e.g. dwarf varieties of crown-of-thorns, improved purslane varieties or native lantana) to cover the rest of the bed.

During the first 2 -3 years young plants (seedlings or rooted stem cuttings) make rapid growth if provided with adequate fertilizer, slowing as specimens become more mature. Provide young plants with a complete liquid fertilizer every two weeks during the spring, then a slow release palm special fertilizer in early Summer, and again in early Fall. Liquid fertilizer can be used during the dry winter months when temperatures stay above 80EF. For more mature plants, the amount of liquid fertilizer can be reduced, or even eliminated, however, the application of slow release fertilizer should be maintained.

Desert rose will thrive under conditions of copious rainfall during hot periods of the year (temperatures above 80EF), provided they are growing in a perfectly free draining soil on a site that does not flood (see above). During the cooler months of the year however, desert rose is far more prone to root rots, and in South Florida the soil should be allowed to dry out between waterings. Water should be completely withheld if day-time temperatures fall below 80EF, or the weather is cool cloudy. In South Florida desert rose can be grown outdoors year round, with regular watering restricted to those times of the year when there is an extended period of hot, dry weather, as sometimes occurs in late

Spring.

GROWING IN CONTAINERS

Desert rose can be grown in any container that permits adequate drainage. Unglazed ceramic pots are ideal, in that they allow the soil to dry out between each watering. If a clay pot is used it must be wide enough (i.e., dish shaped) to allow for expansion of the caudex, otherwise the container could crack. A free draining potting mix should be used

with frequent applications of liquid fertilizer (half strength 20/20/20) until the plant reaches maturity. Consider a container in areas where Winter temperatures are too low to safely grow the plant outdoors. In areas with cool, wet Winters, growing desert rose in a moveable container has the advantage that it permits placing the plant under cover

during rainy periods.

PESTS AND DISEASES.

Apart from scale insects and mealybugs, and occasional infestations with spider mites, there appear to be few insect pests that are a serious problem. Caution is indicated in pesticide use since desert rose is sensitive to many sprays, especially those containing oils. As indicated above, diseases are far more limiting in successfully growing desert rose, especially the bacterial and fungal root and stem rots. Prevention (following the planting and maintenance guide above) is the best strategy, since there is little that can be done once a plant is infected. Inspect plants after any cold weather for damage to branches, since this renders them more prone to subsequent rot that can then spread to healthy parts of the plant. Any cold damaged branches (look for burnt leaves and a loss of turgor) should be removed. Fungal leaf spotting diseases are occasional problems, more so during extended periods of wet weather.

CULTIVARS.

Several cultivars of *A. obesum* are available including 'Singapore', with large rose pink flowers and several with white flowers (e.g. 'Grumbley's White'). Other members of the taxa whilst not as widely grown are available from specialist growers, especially *A. swazicum* and *A. somalense*. An increasing number of hybrid types are becoming available, with the most recent introductions those from Thailand. These are available from several mail order specialist nurseries.