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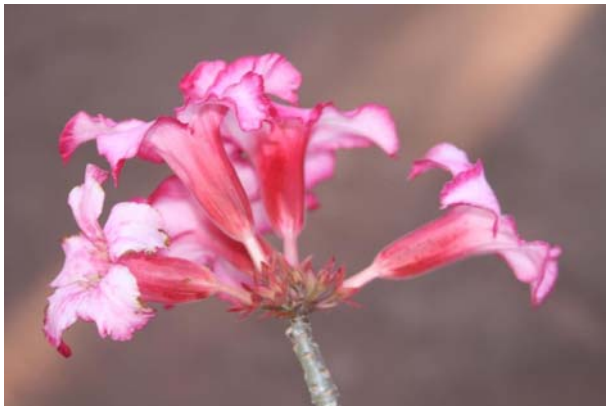
Adenium obesum — Family: Apocynaceae

Eleuthera Island, Bahamas



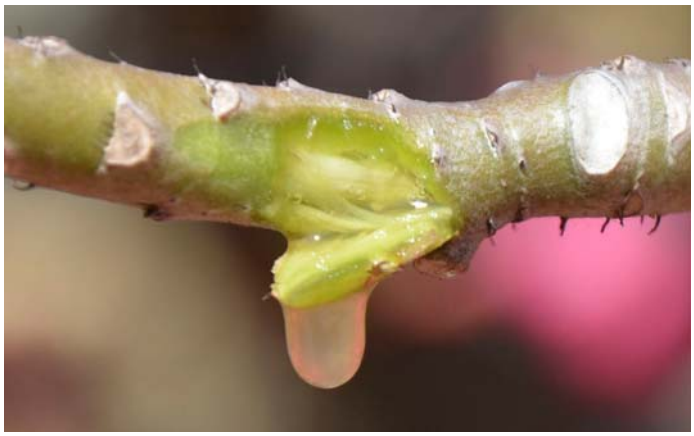
Fort Myers, mid May

Desert Rose
Synonyms (discarded names): *A. arabicum; A. coetaneum; A. honghel; Nerium obesum*
Origin: East Africa; Northeast Africa; Arabian Peninsula
U.S.D.A. Zone: 10a-12 (33°F minimum)
Plant Type: Succulent shrub or small tree
Growth Rate: Slow
Light Requirements: High
Flower Color: Pink; red; pink & white; red & white
Flowering Months: February—November; best in Spring and Fall
Leaf Persistence: Semi-Deciduous
Salt Tolerance: Medium
Drought Tolerance: High
Soil Requirements: Wide
Nutritional Requirements: Medium
Pests: Occasional insects, mites, leaf spots
Typical Dimensions: 4 x 3 feet
Propagation: Cuttings; grafts; seeds
Properties: Extremely distasteful
Uses: Specimen plant; patio; flowering container plant; rock gardens, pool side

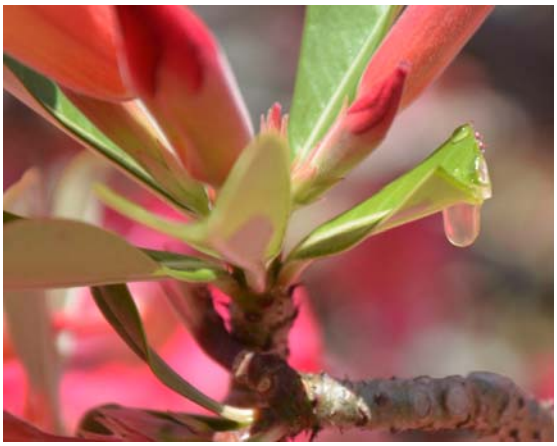
National Geographic Distribution
Desert rose is native to the Arabian Peninsula that includes Aden, Saudi Arabia and Omen. It's native range extends into northeastern and eastern Africa. The plant has become naturalized in Sri Lanka.

Classification
Desert rose is in the same family of plant as the Allamanda, oleander, plumeria, and periwinkle. There are five species of Adenium recognized by the USDA Germplasm Resources Information Network. All botanical species are native to semi and arid climates. Some of these species are reputed to have toxic properties; they were used to

poison fish and on arrow-heads. Most plants of *A. obesum* in cultivation are hybrids, yet only a few cultivar names have a valid description. Numerous double and triple flower cultivars are being introduced into the United Sates from Taiwan and Thailand. All parts of *A. obesum* contains copious watery sap.



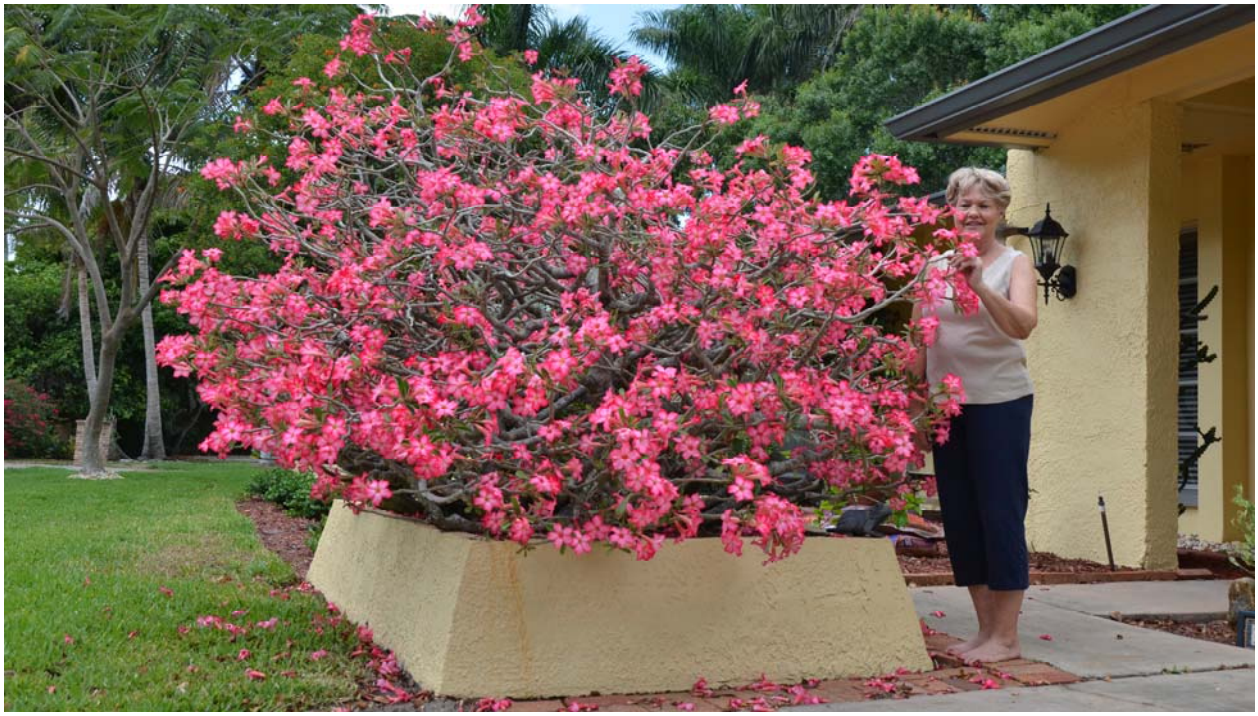
Sap flows from broken stem of *A. obesum*



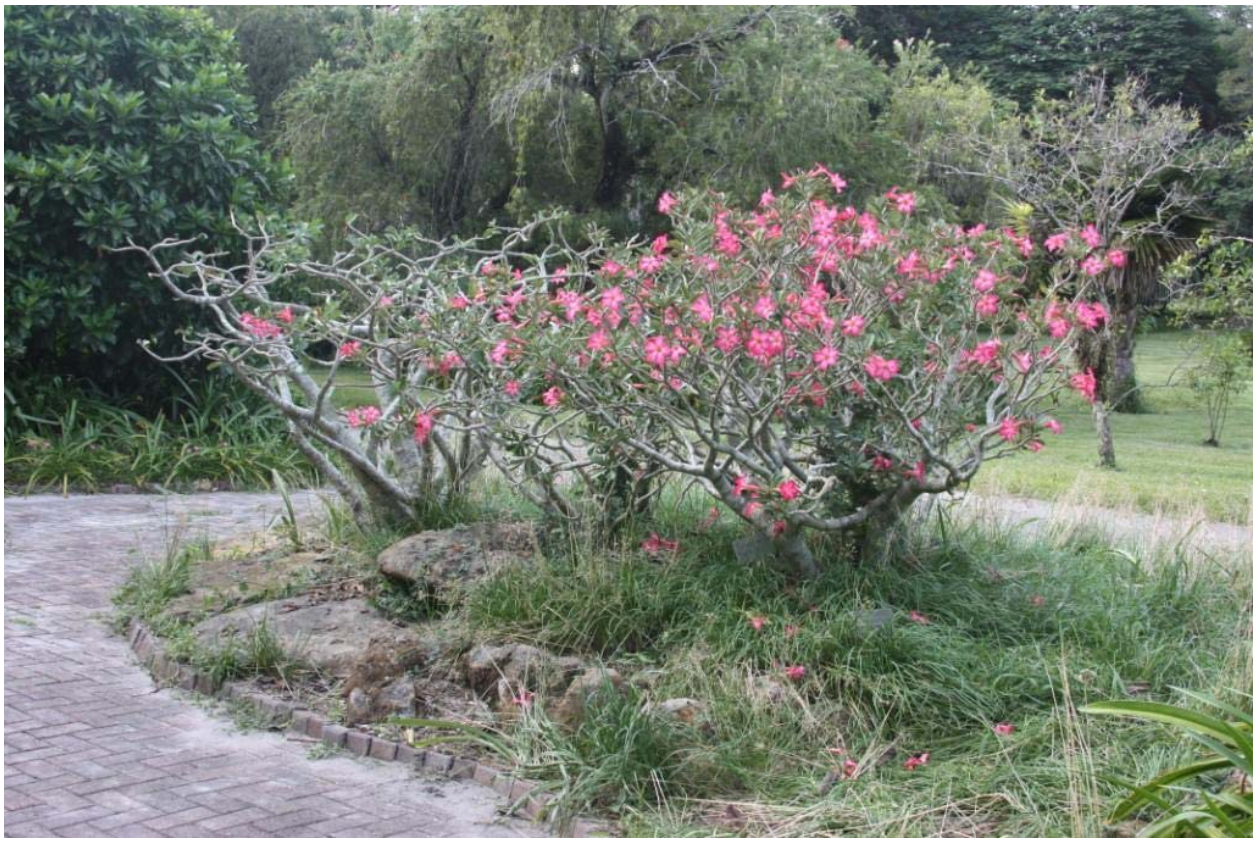
Sap flows from severed leaf *A. obesum*

Plant Type and Growth Habit

Desert rose is a fleshy, monoecious and briefly deciduous shrub or small tree. The main stem is short, thick, and fleshy. Most have a distinct irregular swollen base, often called a caudex (a swollen intersection of the trunk base and root), much of which is underground. Above ground the caudex can be globose to conical. In mature specimens a definite caudex may no longer be recognizable. The branches are smooth, grayish-green to brown, upright and irregularly spaced. Less commonly, branches are weak and spreading. Young plants have an opened growth habit becoming denser with age. Desert rose is a slow grower with maximum observed heights of about 6 feet in South Florida but usually much smaller.



This plant is approximately 35 years old and measures 6 feet high and 10 feet wide, Fort Myers, early April



Flamingo Gardens, Davie, late October

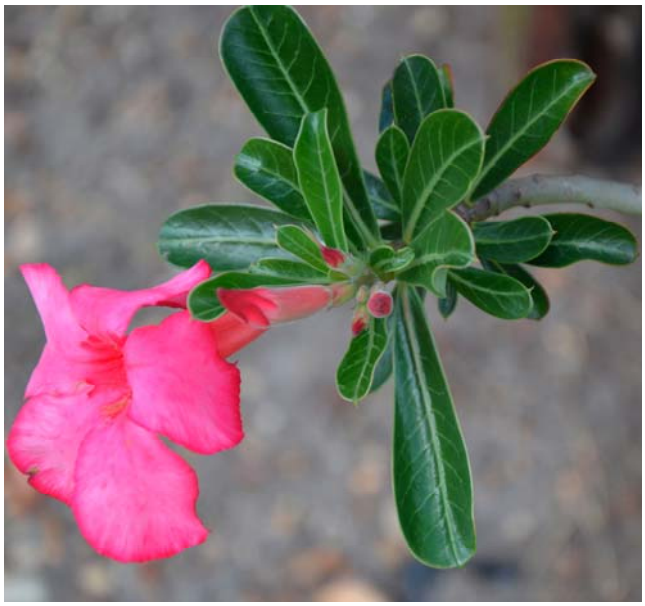
Leaves, Flowers, Flowering, and Fruits

The leaves are spirally-arranged and are mostly crowded together at the ends of the branches. They are fleshy, shiny dark green to bluish-green above, paler green and dull below and are without hairs. Leaf type is simple and entire and 2 to 4.5 inches long and 1 to 3 inches wide. The blades are spathulate to obovate, or oblong to obovate. The apex is rounded or notched and the base tapers into the petiole. The petiole is obscured by the decurrent (a leaf base that extends down along the petiole) leaf base and is either absent or no more than 0.2 inches long.

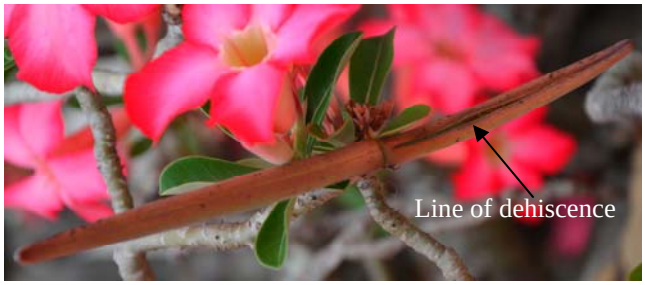
The flowers are very showy and arranged in terminal corymbs that supersede the leaves. They are salverform (tubular at base with flared lips) and up to 3 inches long and wide. The colors of the corolla range from deep purplish red, through pink to white or combinations thereof often with a pink to crimson border. The margin is wavy or crinkled. There is no fragrance. Desert rose is capable of flowering all year, sparingly during much of the winter, but more profusely from February through November. Plants are more floriferous during the dry periods of Spring and Fall. In late Winter and early Spring flowers appear on deciduous limbs, and for a time the frame is adorned only with flowers as new leaves emerge below the corymbs.

The fruits are not often seen and are usually borne in pairs resembling the horns of a steer. They are slender follicles each up to 4 inches long. When matured, the follicles split along one side to release many long narrow cylindric seeds. The seeds are brown with long silky golden-brown hairy tuffs (pappus) at each end so that the seed is blown along the ground like an axle with two wheels.

Spirally-arranged leaves

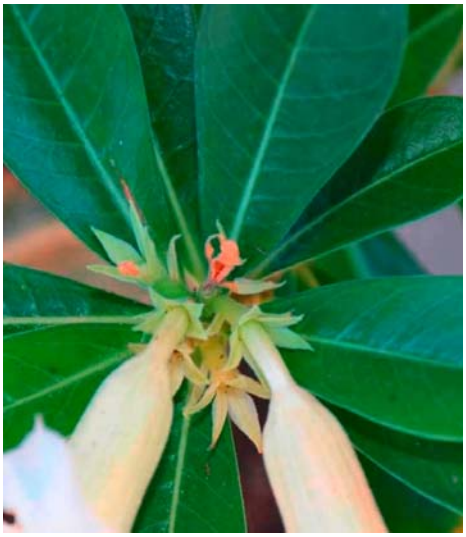


The flowers supersede the leaves



Twin dehiscent follicles

Leaves: Simple, deep green, glossy, mass at the tip of branches
Flowers: Salverform, to 3 inches long and wide
Fruits: Follicle, dehiscent, to 4 inches long, usually held in pairs



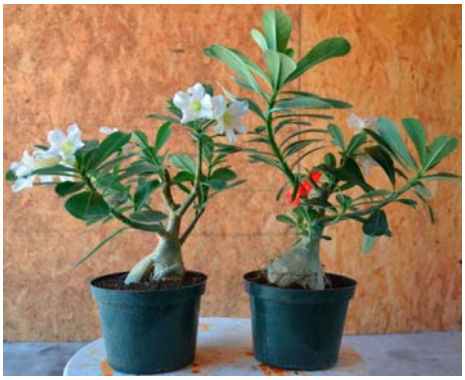
The inflorescence is a terminal corymb

Propagation
New plants can be started from cuttings or seeds and grafting can enhance others. Cuttings should be taken from the tip of the plant preferably 6 inches or longer. Start new cuttings by allowing them to callus over then dipping them in a fungicide before placing them in pots.

Seeds are placed on the surface of the soil mixture for germination. The soil mixture is sprinkled till the seeds are just covered. The seed tray is always kept in a cool dry place until the leaves have appeared. After which, gradually acclimate the seedlings to full sun. Seedlings are also grown as the rootstock for grafted plants.

Seed-grown plants are typically vigorous and can flower in as little as 12 months. Cutting and grafted grown plants are equally vigorous and floriferous.

Six months old seedlings



Two to 3 year old plants, flowering and with discernable caudices. Plant at right is 14 inches tall.

Potting
Avoid choosing a very deep pot as this might encourage an oblong (carrot-shaped) underground caudex. The growth of root-bound container plants is generally curtailed, even if watered and fertilized generously, therefore they should be re-potted frequently until they attain their desired size. Keeping a plant root-bound is one method of achieving a 'bonsai' plant. After the first 3 year's of the plant's life, raise the plant at each re-potting, exposing more and more of the underground caudex and roots.

Caudex Development
Although the bloom is impressive, the 'fat' caudex bottom is often the main feature of the plant. Plants propagated from cuttings, grafts or seeds produce underground caudex. However, only plants from seeds naturally produce aboveground caudex, the formation of which becomes recognizable 2 to 3 years after germination.

Plants grown from cuttings, whether in the ground or in a container, will not produce aboveground caudices unless they are manipulated to do so. This is done by removing the plant from its medium and replanting it 1 to 2 inches above its depth, thus exposing that portion of the underground caudex. This should be done about once a year but only in the warm months from March to October. Container plants lifted can be replanted in the same container. Once lifted, the exposed caudex will continue to increase in size as the plant grows in girth. Some roots attached to the caudex will eventually fuse with the caudex to give each its unique shape. Newly exposed caudices are susceptible to sunburn. Plants grown from seeds can also be lifted in the same manner. Whether from cuttings or seeds, avoid the urge to expose the underground caudex for the first 3 years of the new plant's life.

The scions of selected cultivars are grafted onto seedlings. This will provide the plants with a naturally occurring aboveground caudex without having to lift the plant.

Caudex and exposed roots

A plant with no recognizable caudex

Planting and Maintenance Guidelines

Desert rose must be grown in full sun or its limbs become leggy in the shade and its flowering reduced. Originally from arid to semi-arid regions, it is nonetheless frequently cultivated in humid tropical or semi-tropical areas. Under ideal conditions, desert rose can live for hundreds of years.

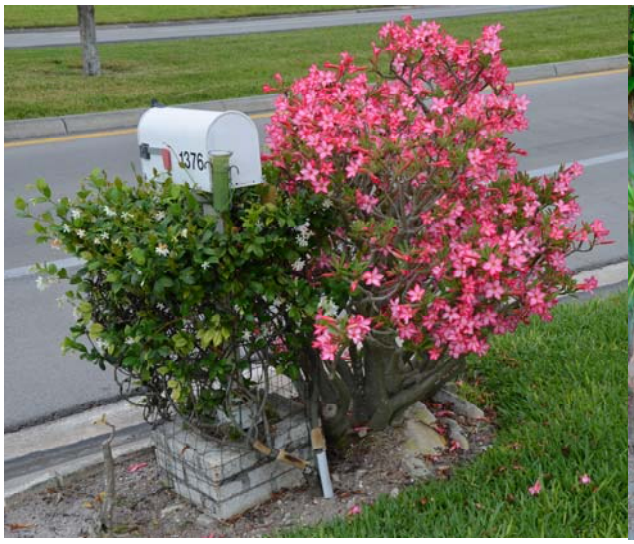
Drainage: In Florida the species is generally cultivated in containers, but it will successfully grow in the ground in free draining soils. If not, root rot can develop resulting in poor growth or the death of the plant. Therefore all steps should be taken to provide good soil drainage before plants are installed in either container or in the ground. Root rot is far more likely in cooler months. Avoid planting desert rose in areas where automatic sprinklers are located.

Fertilization and Irrigation: The plant is a slow grower if not generously watered and fertilized. Without fertilization the plant may grow as little as 6 feet in 15 year. The plant has its fastest growth in the first 3 to 5 years. Generous culture can produce plants several feet tall during those years. In Winter and Spring, irrigate weekly to avoid plant dehydration. Fertilize using a granular slow-release high nitrogen fertilizer containing phosphorus, potassium and micronutrients. Apply the fertilizer in early Spring, in June, and again before November. Half-strength liquid fertilizer applied weekly in the irrigation water in the growing season is a technique used by many growers to further stimulate vegetative growth and extended flowering.

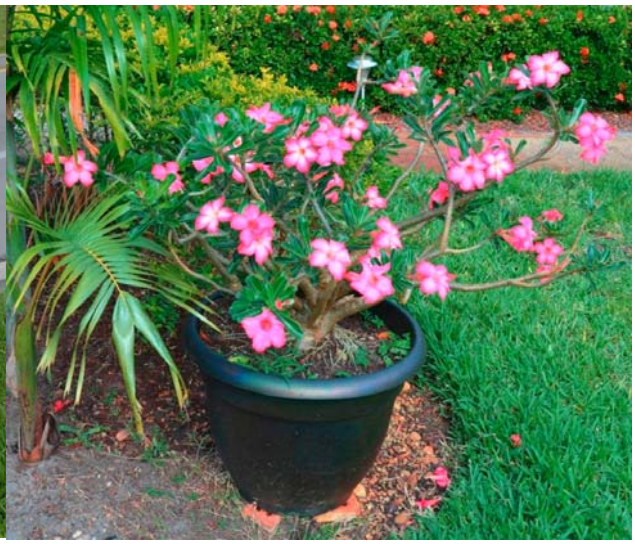
Pruning: Plant appearance varies from plant to plant so prune accordingly. Some have compact growth and require little or no pruning. Others are leggy and may require pinching-back or the removal of several inches of stem to encourage branching and a bushier plant. Pruning above the leaves is more likely to produce multiple branching than pruning further down on the plant on bare stem. Pinching or pruning should be done once a year, preferably from February to September. Pruning during winter often fails to generate robust branching.

Affect of Temperature: Where year-round temperature is sufficiently warm, desert rose will not become dormant and deciduous and may be ever-blooming. Dormancy occurs when night time temperatures are between 39 and 46°F or when day time temperatures are between 60 and 64°F. Cover the plant to protect it from the cold when the temperature is expected to fall below 35°F. Temperatures this low can cause tip dieback. Prune off cold damaged tissue as soon as it is evident. Cold damaged parts can rot which can cause further problems by spreading into healthy tissue. If desired and feasible, relocate containerized plants indoors when temperatures drop into the 40's. If temperatures regularly fall below 35° F, the plant should be grown in a container for moving into a cold protected area. Partial defoliation may also occur at other times in response to weather change.

Lichen patches may develop on the trunk and on older limbs. Lichen will not interfere with the growth or health of the plant.



In-ground plant



Plant in container

Lichens commonly develop on the limbs and are present all year.

Insects and Diseases

Aphids, mealybugs, scales and spider mites may be occasional problems. Oleander caterpillars can quickly consume most leaves on the plant. Once controlled the plant will releaf in about four weeks under the right conditions. Control caterpillars with *Bacillus thuringiensis* (B.t.) or hand pick them from the plant while wearing gloves. Anthracnose is a fungal disease that may develop in the summer or early fall. The leaves develop a tan lesion and typically become yellow and fall. Rake up and dispose of fallen leaves. This disease is usually controlled by the change of season.

Oleander caterpillar on desert rose, late October

Anthracnose affected leaves, late September

References

Barwick, Margaret. 2004. Tropical & Subtropical Trees: An Encyclopedia. Timber Press, Portland, Oregon

Broschat, Timothy and Alan W. Meerow. 2001. Betrock's Reference Guide to Florida Landscape Plants, Betrock Information System, Inc., Davie, Florida

Dehgan, Bijan. 1998. Landscape Plants for Subtropical Climates. University Press of Florida, Gainesville, Florida

Llamas Albrecht Kirsten. 2003. Tropical Flowering Plants: A Guide to Identification and Cultivation, Timber Press, Portland, Oregon

Mathai, P.M. 2005. Growing a Specimen Adenium Plant. The Journal of the Indian Society of Cacti & Succulents. Chaar Dishayen Printers. Noida, India

Mclaughlin, John and Joe Garofalo. 2002. The Desert Rose, *Adenium obesium*: Nursery Production. Fact Sheet # 66. Miami-Dade Cooperative Extension, Homestead, Florida

Palgrav, Keith. 1977. Trees of Southern Africa. C. Struik Publishers, Cape Town, Johannesburg, South Africa

Related Fact Sheets

Flowering Trees Florida Native Plants Effects of Cold weather on Flowering Trees

This fact sheet was reviewed by John Lucas, Tradewinds' Botanicals Nursery, Fort Myers. tradewinds-south@aol.com ; Peggy Cruz, Lee County Extension; Karen Headlee, Lee County Extension