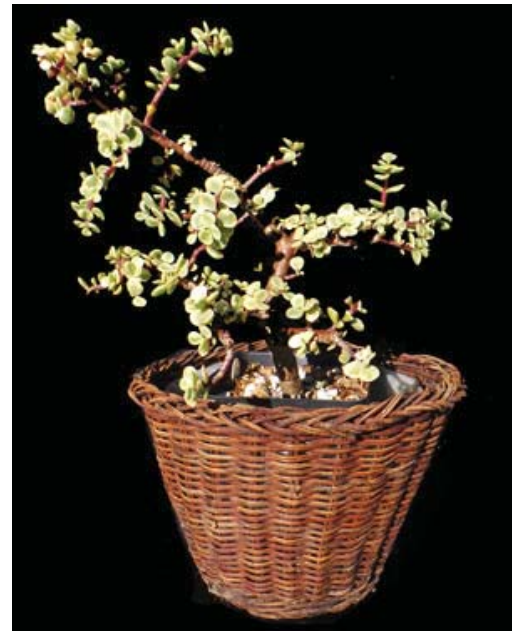


Elephant Bush, *Portulacaria afra*



Portulacaria afra, at the Karoo Desert Botanical Garden, Worcester, South Africa. *P. afra* is an excellent 'carbon sponge', with the ability to efficiently use more carbon from the air than most other plants (since it can use both normal and CAM pathways to grow despite adverse climatic conditions) and can therefore remove more carbon from the atmosphere than an equal amount of deciduous forest.

Elephant bush, *Portulacaria afra*, is a perennial succulent shrub from South Africa that is a popular succulent garden plant around the world. It is easily grown as a seasonal accent plant or low maintenance houseplant in our part of the world. Also sometimes called elephant food or elephant plant; dwarf jade, miniature jade or small leaf jade (but not related to jade plant, *Crassula ovata*); porkbush; or *spekboom* (in Afrikaans) or other common names in Africa, it is found on rocky outcrops and slopes from the Little Karoo in the Western Cape to the Eastern Cape northwards into KwaZulu-Natal, Swaziland, Mpumalanga and the Limpopo Province and further north into Mozambique. Although it is considered to be in the purslane plant family (Portulacaceae), molecular phylogenetic studies suggest this genus should be in the Didiereaceae, a group otherwise found only in Madagascar. Recent research has shown



Elephant bush as a houseplant.



The rounded to oval leaves are nearly sessile on the reddish stems.

This is a soft-wooded, semi-evergreen upright multi-stemmed shrub or small tree that can grow 8 to 15 feet tall in the ground in mild climates (hardy in zones 9- 11). The fleshy, flattened, $\frac{1}{2}$ - $\frac{3}{4}$ inch long nearly sessile (without a distinct petiole) leaves are round to oval in shape. The glossy emerald green, opposite leaves are borne on brittle, fleshy reddish-brown stems and tapering branches that mature to a grayish color. Although succulent, the trunk



The stems are brown when mature.

and branches have a woody inner tissue. The stiff, irregularly arranged branches will grow into a thicket if left unpruned. Heavy branches may break off, often rooting where they fall and beginning new plants. It looks superficially similar to jade plant, but has much smaller leaves that tend to be closer together on thinner stems.



The foliage is edible – and is commonly eaten in southern Africa, usually in salads or soups to add a sour flavor – and was traditionally used medicinally for a variety of minor ailments. It is widely browsed by domestic and wild animals because of its ability to remain succulent despite periods of searing heat and drought, and is a favorite food of tortoises. Elephants do eat the plant, leaving the lower, spreading branches and a lot of broken twigs as they strip the branches of the leaves, which later root to expand and thicken the colony, creating new thickets known as “spekboomvelds”. Other animals, such as goats, eat the plant from the ground up preventing the plant from surviving. Overgrazing and poor regeneration is causing a decline in elephant bush populations, except in areas such as in parks or reserves where

The foliage of elephant bush is edible.

non-native browsers are limited, as *P. afra* seed has great difficulty germinating in its native habitat.

Plants produce a myriad of tiny, inconspicuous pink or white flowers in late spring or early summer in its native habitat (or in places like Southern California where they can be planted in the ground) after a dry winter where plants are not irrigated. The flowers are rare in cultivation. Flowers are produced in clusters at the ends of the branches. The star-shaped flowers have 5 pointed petals and prominent stamens. Pollinated flowers are followed by tiny transparent to pink, berry-like dry fruits, each with a single seed.

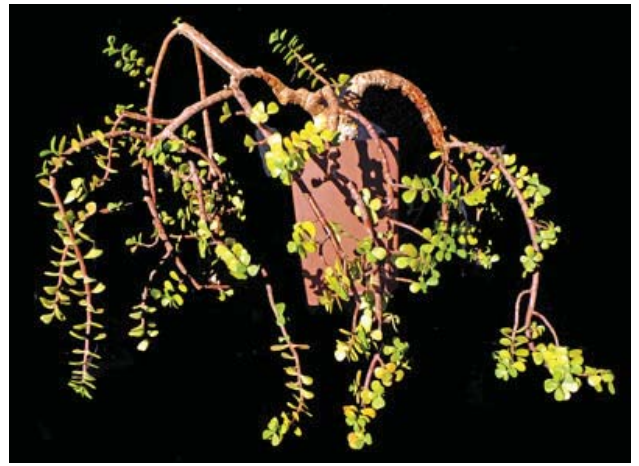


Elephant bush generally only flowers when grown in the ground in mild climates (L), with very tiny pink flowers (R) on the ends of the succulent stems (LC and RC).

In the Midwest elephant bush is best grown in a hanging basket, as part of a mixed succulent dish garden, or as a tender bonsai specimen as the dense branching gives even young plants a venerable look. The plant readily produces buds wherever branches or even leaves are removed, so it is easily kept almost any size or shape by pinching or cutting just above a pair of leaves pruning. The small root ball adapts well to typical shallow bonsai containers, and being succulent it is more tolerant of drying than more traditional bonsai subjects such as maples or evergreens so requires less constant attention. Plants in containers alone can be staged with other potted plants to provide contrast in color and

texture. But even though they can grow in very little soil, their succulent leaves and stems make them top heavy, so plants may need to be stabilized with a rock or stake to keep it stable until well established. The medium fine texture of the foliage is a good contrast to wide-leaved annuals or perennials such as coleus or heucheras, and the reddish color of the stems coordinate well for a color echo with plants with red, purple or dark foliage.

Portulacaria afra needs bright light and very well-drained soil to thrive. Use cactus mix or a custom potting medium with generous amounts of small pea gravel, poultry grit, pumice, or other non-porous materials (avoid using a lot of sand as the particle size tends to be small and will fill pore spaces more readily than other materials) and a container with large drainage holes. Unglazed pottery is best to allow for better evaporation of excess moisture. The ideal indoor location is usually a south-facing window, but eastern or western exposures are acceptable, too. Too much direct sunlight can cause the leaves to turn yellow or red at the tips – which some people prefer – or may even burn the leaves. It may require some experimentation with locations to find the right spot for optimal growth. Potted plants can be moved outside for the growing season after all danger of frost has passed. Gradually acclimate the plant to the new conditions; the leaves are likely to be sunburned if a plant is abruptly moved from inside a house to full sun outdoors. Move back indoors when night temperatures drop below 40F. It may lose some leaves when transitioning to its winter home if it receives less light than where it was outdoors.



Elephant bush is well suited to growing in a hanging or elevated container.



Elephant bush responds well to bonsai training techniques.

Although elephant bush is very drought tolerant it grows more quickly and the foliage is lush with adequate water. Be careful not to overwater, as it is susceptible to root rot in consistently moist soil. Restrict watering in the winter. Unless the indoor environment is unusually bright and warm, withhold water until the lower leaves begin shriveling, which could be several months. Resume watering sparingly once daylength increases in spring, allowing the soil to dry to a depth of an inch before watering again. Fertilize plants in containers monthly during the growing season (or more frequently if pruning a lot to grow a dense plant in a small container). Repot when the plant has filled the container or roots are growing out the drainage holes. This plant has few pests, but mealybugs can be a problem, especially indoors. Like many succulents it does not tolerate some pesticide sprays. Petroleum-based chemicals should be avoided, or test first on a few leaves to be sure the material will not damage the leaves.

Although it can be grown from seed, this plant is most often propagated from cuttings. Stem cuttings are easily rooted within 4 to 6 weeks in any type of potting medium in warm temperatures. Cuttings are best taken in spring or summer, allowing the cut portions to dry and callus for a couple of days before putting in the rooting medium. They may also root in water. Even leaves that are knocked off while pruning or doing other activities may root on their own.

There are several varieties, although most of these are not readily available, other than perhaps from specialty nurseries. It is likely that some mislabeling goes on, so identical plants may be sold under different names. Variegated types tend to be smaller and less robust than the green ones.

- 'Aurea' is a compact form with the new leaves a bright yellow in full sun.
- 'Cork Bark', selected by a bonsai practitioner, is prized for bonsai because of its fissured, corky bark.
- 'Foliis variegatus' is a slow growing variegated form well suited to container culture.
- 'Limpopo' has much larger leaves. It is the natural form (*P. afra* forma *macrophylla*) from the far north of the species' range.
- 'Medio-picta' is a variegated type with green leaves with whitish markings spreading from the center and especially bright red stems.
- 'Prostrata' or 'Low Form' are low-growing types that works well as a ground cover.
- 'Variegata' has a more compact, upright form with white or cream edged, pale green leaves with pink highlights that does not tolerate bright sun as much as the species.



The leaves of a variegated form.

– Susan Mahr, University of Wisconsin - Madison

Additional Information:

- *Portulacaria afra* – on Plantzafrica.com, the South African National Biodiversity Institute's plant information website at www.plantzafrica.com/plantnop/portulacarafra.htm