

Plant the IDEA

String of pearls



Plant, the IDEA (Identifying Details of Educational Assets)

Encouraging interest in all things GREEN

Senecio rowleyanus

H. Jacobsen

Plant family

Asteraceae

Common names

String of beads, string of pearls

Origin

South Africa

Caution

All plant parts are potentially toxic if ingested, especially to pets

String of pearls has been widely popularized as an easy-to-grow house plant. True to its reputation, it is a succulent and therefore, less susceptible to a lack of water due to forgetful caretakers.

It has small, spherical leaves that range in size from $\frac{1}{8}$ to $\frac{1}{4}$ inch in diameter. Its stems are thin and often have adventitious roots to anchor the trailing dense mat of round leaves. Blooming in mid-fall to winter, the small, insignificant (well, beauty is in the eye of the beholder) white flowers smell like cinnamon.

Plant this IDEA in a well-drained, sandy soil mix and repot every 18 months or so due to overcrowding. Give the babies away to friends! During the spring and summer, dry this plant out completely between waterings, but don't allow the leaves to shrivel. Otherwise, water it minimally. Grow this indoors in a well-lighted room or outdoors during the warm months (be watchful for drying out).

Senecio rowleyanus is adapted to life as a desert-dwelling plant. Its xeromorphic leaves exhibit morphological and anatomical modifications designed to conserve water while not compromising photosynthetic capacity. Some of the features that desert-dwelling plants,

including this one, have to 'beat the heat' are: a low surface area to volume ratio of the leaf, large numbers of stomata, well-developed palisade parenchyma layers (where most of the photosynthesis takes place) and unusual water storage tissues (succulence).

The rounded leaves of *S. rowleyanus* are shaped to reduce leaf surface area. Geometrically speaking, the sphere has the least possible surface area per unit volume. In addition, the chlorenchyma (photosynthesizing parenchyma) tissue, is distributed circumferentially in the leaf around a core of water storage tissue, minimizing the internal resistance to water flow. This feature may be more important to survival than surface area reduction. Perhaps the most unusual feature of this plant is the 'window', seen above as a light-colored strip in the leaf. From a functional perspective, the window admits light into the inner layers of the leaf where it strikes the core cells. From here, the light is reflected in all directions, thus increasing photosynthesis in buried chlorophyllous tissues. In this way, the plant is able to increase its photosynthetic activity, despite having a reduced surface area. By combining this with its numerous stomata and minimal resistance to water flow, the plant can vary its photosynthetic activity according to available water.

Hillson, C.J. 1979. Leaf development in *Senecio rowleyanus* (Compositae). Amer. J. Bot. 66 (1):59-63