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# Propagation of Cactus and Agave Made Easy©

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## INTRODUCTION

This paper is designed for plant enthusiasts who wish to propagate their agaves and cacti through vegetative means. Although there are many methods used by commercial growers who mass produce these plants including in-vitro propagation, grafting, cuttings and seed, this paper will focus on low-tech, easy-to-follow protocols utilizing cuttings of cacti, vegetative divisions, and bulbils of agaves.

## CACTUS PROPAGATION

**Cuttings.** Many genera of cacti, e.g., *Opuntia* sp. (prickly pear), *Cereus peruvianus* (see *C. repandus* or *C. hildmannianus*) (Peruvian apple cactus), and *Cereus repandus* (hedge cactus, apple cactus) are easily grown from cuttings if taken at the appropriate time of year and root in as little as 28 days. Species such as *Stenocereus thurberi* (organ pipe cactus) will take 2 to 3 months to root. As a general rule, most commonly grown columnar cacti root in 4–6 weeks.

Only the highest quality propagation material should be selected. All cutting material should be well-hydrated and free of disease, blemishes, and insects. Periods of rapid growth (spring through summer) are the best times to propagate these plants.

The first step in propagation of a columnar cactus is to remove the cutting from the stock plant. Since the cut area will be unsightly after the cutting removal, taking the cutting from the back of the plants will help in maintaining the aesthetic value of the stock plant. Make all cuts at a 45° angle. As the cut area of the stock plant dries, a cupping of the vascular bundle may occur. Unless cut on an angle, the stem will collect water during irrigation or rain and cause unnecessary decay. To avoid pathogens entering the cut portion of the cutting, it is mandatory that they be air-dried until a callus forms over the cut area. Callusing may take from 5 days to several weeks depending on relative humidity and temperature. The cutting should be stored in a very bright area and placed upright. Compartmentalized boxes in which wine is shipped work well for this purpose.

Cutting length can vary from several inches (cm) to several feet (m) depending on the species, the propagator, and the availability of cutting material. Prior to callusing, the base of the cuttings should be carefully squared off. This minimizes the area exposed to the rooting medium and lessens the area that may potentially be invaded by a pathogen. The cutting may be dusted with powdered sulfur prior to sticking as added insurance against disease. Talc formulations of rooting compounds which are available at most garden centers are optional.

Another method used by some propagators is to place the sulfur-dusted cutting upright in a bright area for about 3 to 4 weeks. During this time, species such as *Echinopsis pachanoi* (syn. *Trichocereus pachanoi*) (San Pedro cactus) and others will form adventitious roots on the cut portion of the cutting and then can be stuck