

PROPAGATION OF CACTUS

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Cactus are propagated by three major methods: seed, offsets, and cuttings.

SEED PROPAGATION

The majority of cactus species are propagated by seed. The seed is acquired from nursery stock or imported from Latin America. Seed propagation is the slowest method as most species are ready for market in not less than 14 months.

Special conditions must be met to be successful in seed germination:

Soil. A light soil mix that drains quickly is best. A commercial planting mix is preferred as it supplies all necessary nutrients as well as being of constant makeup.

Heat. Under-bench heating is needed to keep the soil temperature in the optimum range of 70° to 75°F. The greenhouse temperature should not exceed 100°F or drop below 46°F.

Benches. The benches must be sterile. Most any disinfectant can be used but longer lasting results are obtained by the use of copper compounds.

Shade. A greenhouse shade of approximately 50% is suitable for most cactus species.

Planting Method. Sterile flats are filled with sterile soil mix to 1/2 inch from top. The mix is then watered thoroughly, preferably the day before the seed is to be sown.

When flats are ready 2000 to 2500 seeds per flat are planted. Even distribution of seed is obtained by mixing the seed with gravel of equal consistency as the seed and applying this mixture to the flat with a shaker. The seed is then covered lightly with #10 gravel. All flats are then treated with a solution of Captan to further reduce possible damping-off problems.

Watering. Uniform soil mixture is the single most important factor for even seed germination. Seed flats should be watered 3 to 4 times daily or as needed to keep the soil moist.

Germination. When the proper growing conditions are met viable seed should germinate between 3 and 21 days. Fresh seed is important as seed of some cactus species lose viability within 2 to 3 weeks after harvesting.

OFFSETS AND CUTTINGS

The difference between offsets and cuttings is that offsets are broken at natural points from the parent plants while cuttings are cut to a desired length. It is important that all cuttings are taken with a sterile knife.

Soil, light, and heat. Both offsets and cuttings require a very light, well-drained soil. They both need about 50% shade and a greenhouse temperature of 56° to 100°F, preferably on the warm side.

Healing. Healing is required on both offsets and cuttings to greatly reduce possible loss to fungus. Offsets require 2 to 4 days to heal while cuttings need 2 to 3 weeks.

Rooting. Offsets and cuttings can be rooted in the same manner although offsets have an additional method that can be employed.

1. General rooting of offsets and cuttings: Healed plants are planted directly into flats. The soil should then be kept damp but not wet.

2. Air rooting of offsets: The offsets are stood in a flat, side by side and left until air roots form. They're then planted and watered lightly, increasing the water as roots develop.

PESTS AND DISEASES

Insects. Spine mealy and root mealy bugs are the major insect problems of seedlings, offsets and cuttings. Treatment consists of 1 tbsp/gal of 50% Malathion. Offsets and cuttings taken from the field must be watched carefully for scale.

Damping-off. Nearly all cactus are very susceptible to damping-off fungi, particularly as seedlings and when rooting. Damping-off is treated by reducing drastically the amount of water the plants receive and applying a suitable fungicide. Captain, Benlate, and Truban are effective choices of fungicides.

PROPAGATION AT MONROVIA NURSERY COMPANY: SANITATION

DENNIS CONNOR

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CUTTING PROPAGATION

At Monrovia Nursery, we employ specific sanitation procedures in our propagation department to produce as healthy a plant as possible. I will discuss the propagation department at Monrovia with emphasis on our disease control program.