



# PHILADELPHIA CACTUS & SUCCULENT SOCIETY

founded 1942

[www.philacactus.org](http://www.philacactus.org)

## 4TH MEETING OF 2022

APRIL 10

11:00 AM (PLANT SET-UP)

11:45 (MEETING)

[THE DISCOVERY CENTER - PHILADELPHIA](#)

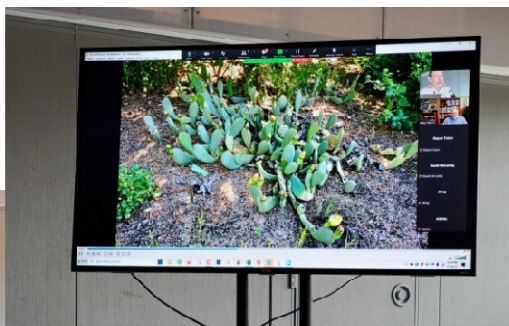
**you can also join us virtually!!**

Zoom Link

<https://us02web.zoom.us/j/83982621021?pwd=OTA3Lzh1R3lIZGJNeWw1ZW44SEZldz09>

Meeting ID: 839 8262 1021

Passcode: 558984





COMING ATTRACTIONS  
**COMING ATTRACTIONS**  
COMING ATTRACTIONS  
COMING ATTRACTIONS

# ANNUAL PLANT AUCTION

**MAY 1**

**AUCTION TO START AROUND NOON**

**ACCEPTING AUCTION PLANTS STARTING AT 11AM**

# APRIL PLANT OF THE MONTH

The categories can be found here: [www.philacactus.org/plant-of-the-month/](http://www.philacactus.org/plant-of-the-month/)

If competing, please try to arrive at 11 to set-up ..

## CACTUS

### **Echinopsis-Gymnocalycium-Rebutia Group**

**subfamily** Cactoideae, **tribe** Echiopsideae

**examples** Echinopsis, Lobivia, Cleistocactus, Matucana, Oroya, Rebutia, Sulcorebutia, Gymnocalycium

## SUCCULENTS

### **Other Succulents 1**

Only the following families: Bromeliaceae, Asteraceae (Compositae,) Cucurbitaceae, Didiereaceae, Dioscoreaceae, Geraniaceae

**examples** Dyckia, Senecios, Othonnas, Ibervillea, Alluaudia, Didierea, Dioscorea, Sarcocaulon, Pelargonium

## SPECIAL CATEGORIES

### **Parent & Offspring**

Two specimen plants, one propagated from the other, in two separate pots, (counted as one entry)

**WE ARE COLLECTING DUES  
FOR 2021-2022  
\$20 PER HOUSEHOLD**



## **Growing in the Desert Series:** **Coir (Coconut Husk Fiber): A Universal** **Potting Medium?** *by Mark Dimmitt*

What is coir?

Coir (pronounced "koy-er") is the fiber from the husk of the coconut, the part between the hard inner shell and the outer coat. It has long been used to make doormats, mattress and upholstery stuffing, rope, and fishing nets. But mainly it is a waste product of the coconut industry; mountains of the stuff have accumulated in tropical countries where coconut palms abound.

Coir has been used in the USA as a potting medium for a variety of plants for at least two decades, especially in Florida. Until recently its availability has been undependable and the quality highly variable. These problems have been solved, but few horticulturists are aware of recent developments.

### **Dispelling coir's bad rap**

#### **1. Coir is soggy muck that drowns plants.**

Until a few years ago the main coir product sold in the USA was "cocopeat", a fine dust that looks much like horticultural peat moss. This product holds even more water than peat, and because of its fine texture, it remains saturated for days after irrigation. I have tried it, and even when mixed 1:3 cocopeat:pumice or perlite, it killed nearly every plant that requires good drainage. This stuff is indeed deadly.

The product discussed in this article consists of fiber and small chips, with almost no dust. Even when it's saturated, it contains abundant air pockets and therefore roots will not suffocate.

#### **2. Coir is dangerously salty.**

Coir used to be washed in seawater, and was therefore quite toxic to most plants. It had to be thoroughly leached before use, especially the larger chunks used for growing orchids. Modern coir processed for horticultural use has been fresh water washed, and is very low in salt. Tucson tapwater is five times more salty than today's coir.

#### **3. Coir comes in hard bales that must be laboriously broken up by hand.**

Cocopeat was usually sold in compressed bales. The bales were very difficult to moisten, and even after soaking for several days they had to be physically broken up. This was difficult and time-consuming. The newer fiber and chip products often come in compressed blocks of one-half cubic foot. When a block is submerged in water, it saturates and falls apart in a few minutes, expanding to two cubic feet (15 gallons). It's very easy to use.

### **My experience with coir**

Potting medium is a common topic of discussion whenever and wherever horticulturists gather. A huge variety of ingredients have been used, with varying degrees of success. I've been growing plants since the 1960s, and have spent most of that time experimenting in the hope of finding the ideal medium for my growing conditions and the plants I like. For the past 15 to 20 years most of my media have used peat moss as the primary organic component, amended with different proportions of pumice or perlite for aeration and drainage. (The product is Sunshine Mix, which is about 90% peat with some perlite and pH buffers.) I had good success with these ingredients, but I was never completely satisfied. One of my two main complaints is that the peat retained moisture too long during cool weather, encouraging root rot of sensitive plants. The other complaint is that peat breaks down in a couple of years in our hot climate, so plants needed to be repotted regularly even if they had not filled the pot.

Now I have found a product that thrills me. I discovered good coir in 2008, when I visited Tropical Nursery near Mumbai, India (with Kevin Barber). The nursery covers many acres and produces a wide range of plants, including tropical foliage and flowering plants, succulents, food plants, and orchids (Figure 5). All of them are grown in 100% coir. Owner Dr. Ashish Hansoti has been a pioneer in developing coir as a growing medium. One of his contributions is his research to determine the nutritional needs of plants grown in coir.

I began experimenting with coir when I returned home the same year. After one growing season I was so pleased with the results that I began repotting almost my entire plant collection into coir-based mixes. After four years' experience with it, I have concluded that coir is by far the best all-around organic potting medium that I have ever encountered. Succulents that have performed superbly in media consisting of from 30% to 100% coir include: Adenium, Pachypodium, Plumeria, Aloe, Agave, Sansevieria, Trichocereus, Mammillaria, Stapeliads, Caralluma, Bursera, Boswellia, Fouquieria, Haworthia, terrestrial and epiphytic bromeliads, terrestrial orchids, and some Euphorbia (I have only a few). Nonsucculents have done excellently too, such as citrus, figs, peaches, blackberries, melons, tomatoes, corn, Asclepias, Hibiscus, and many bulbs including Gladiolus, Lachanalia, Scadoxus, Hippeastrum, and Boophone.

I have been using 2/3 to pure coir for tropicals, including tropical succulents such as adeniums. For more xerophytic species I use 25-30% coir, with the rest being perlite and/or pumice. The only plants that have not done well are some extreme xerophytes such as Mohave Desert cacti, Ariocarpus, many mesembs, and Caralluma socotrana. But I have never had much success with these plants in any medium.

### **Horticultural properties and availability of coir**

I have found coir to have numerous advantages over all other organic components of potting media that I have ever used, and few drawbacks. The main ones are summarized in Table 1. The number one best trait is that it has both high water-holding capacity and simultaneously retains plenty of air. This means that it's nearly impossible to overwater most plants during their growing season – you simply cannot suffocate the roots. It is highly resistant to oxidation and microbic breakdown; it lasts at least four years with tropical plants when it's kept continuously moist, and longer for more xerophytic ones. Unlike peat, it does not shrink when dry, and is easy to rewet when it's time to awaken a plant from dormancy. Since I eliminated peat-based media, I have had almost no problem with fungus gnats, although others have reported that these flies can live in coir.

In my four years of experience with coir, loss from root rot has fallen to a small fraction of that with peat media. In fact, I have had almost no root rot of most plants including adeniums, cacti (except extreme xerophytes), aloes, and agaves. Research indicates that coir suppresses the growth of several pathogenic fungi.

Coir lasts two to four times longer than most other organic potting components. In our hot desert climate peat will break down into muck or oxidize to nothing in only a year or two. I have had adeniums in the same pot for four years so far, and the coir is still largely unchanged after all this time of being watered three times a week during the hot season.

Another result I and some others have noticed is that one can grow larger plants in smaller pots. The apparent reason is in the root distribution within the media. With peat-based and other tight media, the roots are concentrated around the inner surface of the pot, especially of clay pots. In coir the roots are abundant throughout the volume of the medium; this is most likely a result of the superior aeration provided by coir.

The disadvantages I've encountered so far are minimal. Small pots (up to about 7 inches) need more frequent watering than in peat-based media. This has not held true for larger pots. Coir

is so loose that it exhibits little capillary transport; therefore the center of a mass of it tends to remain moist until roots absorb the water.

Coir is also very low in nutrients. It's even more important than with other media that plants are fed regularly with a complete fertilizer containing all macro- and micronutrients. And because it's organic it has low cation exchange capacity, so cations leach rapidly. For that reason I add a small amount of vermiculite (expanded clay) to provide cation exchange. I also add dolomite limestone to provide the macronutrients calcium and magnesium (or gypsum for plants that need a neutral to acid medium). Plants that have not been repotted into new medium for more than a year get topdressed with gypsum annually. (I do this with all plants in all media; calcium depletion results in root death.)

The best news is that coir is now readily available in several grades of uniform quality, from fine granules for seeds and seedlings (this product is much better than the old cocopeat) to large chunks for orchids. Riococo ([riococo.com](http://riococo.com)) has eight large production plants in Asia, all with the same equipment that produces identical products that are OMRI-listed ([omri.org](http://omri.org)). These products are distributed by Eco Gro in Tucson, in quantities from single blocks to containers.

My experience so far is anecdotal, although the variety and number of plants I grow is very large. I have just begun controlled experiments to precisely measure the performance of adeniums and several other succulents in coir. Dave Palzkill and hopefully others are doing the same. But I already have enough confidence in this product to wholeheartedly recommend its use for a wide variety of plants. Most will perform superbly in it.

**Table 1. Comparison of some common characteristics of coir- and peat-based media.**

TRAIT	PEAT-BASED MEDIA (30-50% PEAT)	Coir-based media (50-100% coir)
<b>Water-holding capacity</b>	Very high	Extremely high
<b>Air content (drainage)</b>	Low to moderate	High, even immediately after saturation
<b>Drying response</b>	Shrinks	Does not shrink
<b>Wetting after drying</b>	Hydrophobic; very difficult to rewet	Rewets quickly
<b>Longevity in hot climate</b>	1-2 years	At least 4 years, probably longer
<b>Sustainability</b>	Mined from ancient peat bogs overexploited	renewable
<b>Biological activity</b>	Fungus gnats and water molds thrive in it	Fungus gnats seldom colonize it. Coir suppresses the growth of several pathogenic fungi.
<b>Chemical reaction</b>	Neutral pH	Very acidic (Sunshine Mix is buffered to be slightly acid)

\* Acme Sand and Gravel (Tucson) PotB potting blend, a 1:1 mix of compost and 3/8" pumice. It's used by several area nurseries.

Check us out on FACEBOOK!!



Check us out at:

[www.facebook.com/groups/202733996526503](https://www.facebook.com/groups/202733996526503)

It's a way to share photos and ask questions about all things cactus and succulents!

## PHS FLOWER SHOW 2022 SIGNUPS

STAY TUNED!!

## PCSS OFFICERS

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**Treasurer:** Renee Thompson

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