



Coir washing bins. (Photos courtesy of Millenniumsoils Coir)

Counting on Coir

In a constantly changing world, it's hard for anything to remain static — even growing media. For many growers, coir has been an attractive component. But how well does it really work?

By Joseph B. Hanson

Growing media can be a mixed bag, so it's important to keep an eye on your options. You never know when something new might burst on the scene or when something about your current growing media will change. For example, according to the Canadian Sphagnum Peat Moss Association, some Canadian peat companies will be raising their prices 7-15 percent this year, due to the declining value of the dollar and the ubiquitous rain season. While this certainly does not affect all growers, it does highlight the importance of knowing about alternative growing media.

One component that may be worth experimenting with is coir. Manufactured from the

fibrous husks of coconuts in exotic places such as Sri Lanka and India, coir has emerged as a relatively new growing medium. But the question is, how well does it work? Growers from all over the United States shared with *GPN* the advantages and disadvantages they've experienced in using coir.

HISTORY

When you see coconuts at your local grocery store, you are actually seeing them naked. Immediately after they are plucked from trees, the coconuts' extremely fibrous husks are stripped and jettisoned into piles of composting waste. After being soaked in water for at least six weeks, the tough fiber, known as coir, is extracted mechanically and

spun into yarn. These thin fibers are immensely tough and can be coiled, stretched and compressed without losing any of their strength. For many years, coir was primarily used for ropes, mats and other forms of carpeting.

But the environmental benefits of coir have been gradually illuminated, creating a larger market. Composed of strong cellulose fiber with high lignin — which hardens and strengthens cell walls — content, coir displays a strong proficiency for holding air and water. The golden, 100-percent organic fiber has been found to be an excellent deterrent against erosion and could facilitate vegetation in slopes by being spread out in vast nets. ♦

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Coir drying in the sun.

Coir's benefits were quickly realized in growing media as well. Initially beginning in the Far East, the trend of using coir in media quickly made its way through The Netherlands and Canada before finally becoming a staple of hydroponic rose growers in the United States. Ron Ferguson, a horticultural consultant and representative for Millenniumsoils Coir, St. Catharines, ON, Canada, estimates coir has been used by U.S. growers for six or seven years and is being used more all the time. Today, coir is used not just for hydroponics, but for annuals, perennials, vegetables and more.

ADVANTAGES

There are several advantages to using coir. First and foremost is its excellent wetability and overall consistency. Whether it is 6 percent or 100 percent of a mix, growers seem to experience the same satisfactory results. John Roue, of Frey Brothers, Inc., Quarryville, Pa., uses 6-15 percent coir in his soil mixes and says, "It acts as a natural wetting agent within the mix. It also gives improved physical properties...reduces shrinkage and compaction of the mix and...allows [for] better air space."

A tangible result of this improved aeration is the encouragement of larger, healthier roots. "It initiates roots faster than anything I've ever seen," says Ferguson. "[With bag roses], in 20 percent coir compared to none, plants in coir had roots starting [to grow]...with 50 percent coir, we had roots going into and throughout the bag. And with 100 percent coir, there was a complete root ball in the same period of time!" Virtually all growers using coir experience improved root growth. "I don't know if I can exclusively attribute it to coir, but we have phenomenal results propagating now, with very few losses," says Ted Biernacki of Ted's Greenhouse, Tinley Park, Ill. "The rooting is just unbelievable."

The cost and handling of coir has also shown improvement. While it has been more expensive in the past, the price is no longer a problem. Cost is often dependent on how the product is shipped: Stringy, rope-like coir is more expensive because it is ready for use immediately, while coir compressed into the form of bricks or a pallet is cheaper because it needs to be expanded before use. "I get it by the seat container, so it's a lot cheaper," says Andy Pierce, Montgomery Roses, Hadley, Mass. "It's compressed more than peat moss. If you buy a brick-sized [portion], it's compressed like 9:1...so when you add water, it expands."

The resiliency of coir is also very impressive but differs depending ▶

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on age and form. "I've seen coconut with four years or more on it...and watering each day with liquid fertilizer," says Ferguson, "that hasn't dropped an inch in the bucket...There's a secret to that, though, in that it's pre-composted." Newer coconut husks, however, haven't had the opportunity to linger for years, so its lifespan is shorter — usually up to two years. Coir that has a lower amount of fiber, containing more pulp, also has a shorter lifespan. "It all depends on the condition of the material and the type of coconut you're using," says Bill Young of Aspen Nurseries Watsonville, Calif. "The finer it is, the faster it decomposes; the coarser it is, the longer it lasts."

Another important advantage of coir is that it is environmentally sound. True or not, many argue that sphagnum peat moss is a depleting resource and have obtained strict regulations on it in order to protect the bogs it is extracted from. Coir, on the other hand, is essentially a waste product, accumulating in biodegradable heaps in Sri Lanka and India. For many growers, using a surplus product is an additional plus — yet many of them view coir as more of an amendment to peat than a replacement for it.

"It's like a synergy effect," says Roue. "Coir actually improves peat by allowing the water to be taken in more readily, without the aid of a wetting agent." Roue goes on to say that peat improves coir by providing a particle size that is very suitable to container production. Doug Cole, of DS Cole Growers, Loudon, N.H., uses a similar mixture called CocoPor from Stender, and he also attests to the synergy. "Now [our media] mixes more consistently," says Cole. "So when we get our bags, open them up and mix [the media], we don't find furballs of coir."

DISADVANTAGES

The most common problem involving coir is that growers order a batch and discover its EC is through the roof. They then decide to leech it in order to alleviate its high salt content. What they might not realize, though, is that the coir is salty because the supplier washed the coconut husks with salt water instead of freshwater. This problem could easily be resolved. "Make sure you're buying from a reputable dealer," Ferguson warns. "There could be some cheap stuff out there that is no good." Cheaper coir requires the additional labor of leeching, while more expensive coir is already at an acceptable EC level. Ultimately, it is up to the grower to decide which is more profitable.

Another disadvantage of coir is its clumpy form, which may not move smoothly through all pieces of automated equipment. Though



Greenhouse peppers growing in a coir log.

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there are other, more pulpy forms that may be better, growers might still object to some of the changes that coir necessitates. "Coir has a lot less cation exchange capacity, [and] you'd have to change your fertilizing practices," says Martin Stockton, First Step Greenhouses, Temecula, Calif. "It's [also] a lighter brown color, and as a grower, you tend to use color as an indicator of how moist the soil is...basically, you'd have to reeducate your growing staff."

Reeducating your growing staff is a decision based on personal preference of the grower. Similarly, there are some indirect effects of coir, such as minimizing labor cost and preventing the spread of algae and fungus gnats, that fluctuate greatly depending on personal growing habits and environment. Growers that do not experience these results may find themselves at a disadvantage; however, it is only because so much is contingent on circumstance.

Minimizing labor cost is a possible result because coir has a high wetability and, therefore, could be watered less, saving labor. Yet many growers actually water more, albeit in smaller amounts. Roue offers an explanation: "If you had the capability to measure the actual volume of water, then the volume is probably less. The frequency should be a longer interval between waterings, but then again, there are different types of growers." The indirect advantage of saving labor is directly related to the personal watering habits of the grower.

The possible prevention against the spread of pests is also related to habit. "There have been reports saying, 'Oh, well, fungus gnats will still go in there.' Yes, they will," says Ferguson. "But I have not seen an outbreak occur as fast with coir." Cole agrees, "I would never say, with 7 percent coir, we're in some way deterring fungus gnats...[but] I would say it helps dry out the top surface, meaning it's not as desirable to a fungus gnat to come lay its eggs." Since the spread of fungus gnats is directly related to the wetness of topsoil, then how well they are controlled depends on the grower's watering preferences. Similarly, algae also thrives when the topsoil is wet and, therefore, may also be prevented in some degree based on watering frequency. However, for both algae and fungus gnats, one of the most important factors is the environment, which can be unpredictable and differ greatly from location to location.

FINAL THOUGHTS

Coir certainly has its advantages — increased wetability, improved root growth, good resilience, environmental friendliness — but the trend is to mix coir with other components such as peat in order to reap the benefits of all the elements in the media instead of just one. As for coir's disadvantages, some are preventable; talking to your supplier can easily deter imported amounts of coir that are too salty, chunky or fresh. Other disadvantages largely depend on how comfortable the individual grower is; minimizing labor cost and the spread of algae depends largely on personal growing habits, and spending time reeducating your growing staff may not always be a workable option.

However, if you decide to try coir, it's important to understand the pros, cons, conceptions and misconceptions. After all, it is only by doing so that you can really decide whether or not coir is right for you. GPN

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