

Sustainably Harvested Tree Fern

Text by Alan Ford



TREE FERN HAS a long history as a growing medium for orchids. Orchids grow beautifully in tree fern, as it has excellent moisture-retaining qualities and allows for great air circulation. Over time, tree fern has fallen out of favor — primarily because of issues with availability. In some parts of the world, overharvesting has threatened forests and landed certain species of tree fern under the protection of CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora), making it difficult, if not impossible, to import into the United States. Roughly 30,000 species of plants are protected by CITES against overexploitation, and several tree fern species native to the tropical Americas are now protected — including all *Cyathea* and *Dicksonia* species.

The good news is that not every tree fern product is created equal. New Zealand's *Dicksonia fibrosa* is not CITES listed. *Dicksonia fibrosa* is very closely related to *Dicksonia sellowiana*, a South American species that is now endangered. The trunk fibers are almost the same in structure, color and appearance. There is an abundance of tree ferns on both private and public land in the central North Island of New Zealand. Most of New Zealand's native forests are found in National Parks and those are fully protected. Even on private land, the government of Aotearoa, New Zealand is serious about protecting its natural resources, and the regulations around tree fern harvesting and processing on private land are tight.

Fernwood Products (NZ) Limited has exclusive licenses with private landowners to harvest this abundant resource and have exported their products to Japan, Europe and the United Kingdom for many years. New Zealand tree fern is just now becoming available in the United States. Over the past 25 years, Fernwood NZ has developed a robust system that ensures all harvesting of tree fern in New Zealand is managed sustainably. The environment is left as it was found — intact and undisturbed. Commercial growers Jacob and Anja Wassink from the Bay of Plenty have been using Fernwood NZ's tree fern fiber exclusively for about two years. Not only do they recommend the product, they are also most impressed with the company's harvesting process. "They do not use bulldozers, and no damage at all is done to the forest floor. They go in on foot, selectively cut the logs, and a helicopter is used to lift them out. It is environmentally responsible and entirely renewable," Jacob says. On any given piece of land there may be thousands



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- [1] Harvested tree fern trunks ready for extraction. Photograph by Alan Ford.
- [2] Tree fern in its native New Zealand habitat, interspersed with Manuka.
- [3] Extraction of harvested trunks occurs via helicopter to avoid damage to the forest floor and canopy.
- [4] An oncidium plant mounted on a *Dicksonia fibrosa* panel.



of tree ferns. Fernwood NZ's harvesting approach would typically only impact a few hundred of these. The company is committed to sustainable harvesting and following the strict standards and regulations as set by the New Zealand government.

Dicksonia fibrosa tree fern sourced from New Zealand is distinctly different from that harvested from *Cyathea* species traditionally found in the United States market. It is softer, porous and spongy, long lasting and has excellent moisture-holding abilities. The resulting natural products, both loose fiber and mounting panels, have a much larger surface area. This means its capacity to retain moisture is greater, but at the same time, it keeps the roots well aerated. Because of New Zealand tree fern's unique properties, there is no need to choose between a coarse-, medium-, or fine-grade product. In a pot, it acts as if it was on a tree fern trunk in the wild and fulfills the plant's every need.

The Wassinks grow phalaenopsis commercially. After a few years of trial and error, they thought they had found the perfect bark mix for their growing conditions and environment.

"We tried all sorts of products. Pumice because of its capillary property, pumice mixed with bark, straight bark, and bark mixed with sphagnum moss," Jacob says. "The mix with sphagnum moss, which took us six years to find, seemed perfect. We were in no hurry to try anything else, but when Fernwood NZ approached us to test their tree fern products, we were willing to give it a go. Tree fern trunks are a natural host for epiphytes," he explains. The couple decided to trial tree fern with a few hundred plants to get a good indication. The superior water-holding capacity was apparent straightaway, and they also noticed that the humidity in their greenhouse improved. "When watering plants that are in bark, humidity can be hard to maintain. But the plants growing in tree fern stay moist no matter what. The roots are looking great. A better root system means a better plant with a better flower. For us, this is a superior medium. It provides us with a superior product which fetches a premium in the market which in turn pays for the higher cost of this medium and gives us a good position in the market," Jacob says.

Another avid orchid grower, Selwyn Hatrick from Rotorua, agrees. He has been growing paphiopedilums for more than 40 years and is impressed with both the root development and growth



6

response of his plants since growing them in tree fern fiber. "Paphiopedilum orchids are not the easiest to grow. They only thrive in the right conditions. I used to grow them in bark, which was okay. But since I found out what fern fiber does for them, I had to have it," he says. "It is less coarse than any other medium, which means a greater surface area is in contact with the roots. It also contains a lot of air and decomposes very slowly. Not all orchid growers realize that the nitrogen in fertilizer feeds the bacteria that causes potting media to decompose. With tree fern fiber, there is no need to fertilize to the same concentration as with bark." He explains. "I tell people a good starting point is half the recommended rate." It has natural antibacterial and antifungal properties, which further reduces the rate of decomposition. Selwyn says the only challenge he can think of for people new to using tree fern fiber is that they will need to water their plants less often. "Tree fern holds moisture extremely well, so it is important to get that right," he says.

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7

- [5] *Dicksonia fibrosa* (left) fibers are covered with fine, spongy hairs that hold moisture evenly without becoming waterlogged. They are softer and distinctly more spongy than the typical *Cyathea* product (right). Photograph by Alan Ford.
- [6] *Paphiopedilum* Tree of Beauty potted in loose *Dicksonia fibrosa* fiber exhibiting an excellent, healthy root system.
- [7] Hybrid phalaenopsis grown in New Zealand tree fern fiber exhibiting an outstanding root system.