

# From the Corners of the World: The Coconut Hunter

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**By Paul Altaffer & Grant Washington-Smith**

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Picture a beautiful tropical island in the South Pacific, with pristine beaches and a warm tropical breeze. Behind the beach sits a lush, green forest filled with tropical treasures. There are very few people around you and there is a cool drink in your hand... Going by this description, many of you are probably imagining some plush, expensive resort where money and wealth abound. However, for much of South Pacific's island nations, this couldn't be farther from the truth.

While beautiful, many of these islands lack the infrastructure for significant tourism, have little industry or trade, and, as a result, suffer from extreme poverty. For many of these islands' natives, though, hope is on the way in the form of coconuts.

One might reasonably assume that the coconut trade is one of the more exploitative and least valuable among the tropical commodities. But thanks to people like Dan Etherington, PhD, and a product he is actively promoting—virgin coconut oil (VCO)—hope is springing in a multitude of people throughout the South Pacific.

### The Man Behind VCO

Dr. Etherington, who is originally from Kenya, is an agricultural economist with a Masters degree from Cornell and a PhD from Stanford—his original interest was in tropical agriculture. He first learned about the coconut and the coconut industry while in Sri Lanka, where he became fascinated with their incredible utility.

His work with coconuts evolved over time, often as a minor part of his research and work as a graduate professor at Australian National University (ANU). He was inspired, though, by his faith and a sense of duty to the people of the Solomon Islands. The result of this inspiration was the development of technologies, which permit small scale producers to convert coconuts into VCO. Once this discovery was made, it wasn't long before he and his family became devoted to the development of micro businesses throughout the South Pacific, particularly the Solomon Islands.

### The Many Facets of the Coconut

Most of the coconut trade in the South Pacific is in copra, a dehydrated form of the coconut flesh that is later industrialized into oil, but which has little value for the farmers/harvesters. The processors aggregate all the value, while the farmers are left to live on subsistence incomes.

Through his research, Dr. Etherington was astonished to learn how rich the tradition around coconut is, but how poor the trade is (almost all in copra). Coconut has been a staple crop for traditional tropical communities for thousands of years, where it is used as food, medicine, fuel, fiber and tools. Traditional people, for example, use palm fronds as thatching, and fiber and shells for fuel. Coir fiber is used to make mats and many other fiber products. Coir dust is similar to peat moss and is used in horticulture. Toddy, the nectar taken from the flowers of

the coconut palm can produce a sugar substitute that can be fermented into alcohol.

The coconut is a perennial plant that will live as long as 80 years and produce coconuts year round. Every month the tree produces a new crown and a new batch of coconuts. Young trees will begin producing in two to five years.

Early on, Dr. Etherington felt it was essential to maximize the benefits and use of coconut. In his view, many traditional communities had become so dependent on copra that they ended up producing nothing else, using the little cash they earned to buy back fuel, soap and cooking oil, which could all be made from the coconut. He understood immediately that producing one's own oil would permit communities to have greater autonomy, allowing them to capture greater value and utility from their product.

During colonial years, Europeans used coconut oil as cooking oil (prior to other cooking oils like soybean and corn). In fact, for many generations they maintained their own coconut plantations around the developing world. During this time, natives were paid very little to remove and dry the flesh (copra), and then have it shipped to Europe where oil was extracted. Spoilage and rancidity were common, so the oil had to be refined, bleached and deodorized. This basic technology and subsistence trade mechanism has not changed in hundreds of years.

During and right after World War II, and in large part due to interrupted supplies of coconut oil, the U.S. and Europe began producing soybean, corn and other seed oils. Once supplies normalized, it was difficult to get people to return to coconut oil. In time the soybean lobby would start promoting the concept that coconut oil was bad for people. As a result, coconut oil was obscured for 60 years, until now.

It is interesting to note that consumption of processed seed oils has been going on for 60 years, which is coincidentally the same time during which obesity has become such a major health issue. Now, with the onslaught of research-driven demand for natural oils and essential fatty acids, the market stands poised for the reintroduction of coconut oil.

## **Direct Micro Expelling (DME)**

Eventually, Dr. Etherington moved to Australia to run a Masters program in agricultural economics (mostly dealing with tropical perennial crops such as coconut). He began writing papers and presenting at conferences in order to point out the market failures in producing better coconut products with greater value. He made the case for shifting the industry, especially for small holders, away from the manufacture of copra, to higher valued products that had greater impact on the small holders' lives. His solution was developing a process for producing oil at a relatively small scale.

He came upon some anthropological data from the South Pacific country of Tuvalu, which demonstrated a technology to dry coconut flesh—drying it and pressing oil from the flesh. Since few people were interested in developing such a process, he developed his own Direct Micro Expelling system, also referred to as DME. This led to the founding of Kokonut Pacific in 1994.

Today, the DME systems are sold and distributed throughout the South Pacific, as well as in Central America, South East Asia and Africa. For an investment of less than AU\$10,000, communities can begin producing their own high quality oil for their use and for generating income opportunities. The systems are entirely contained and use the coconut as its input material. In less than one hour, the process will dehydrate and expel the coconut flesh to produce the oil. Coconut shells are used to fire up the dehydrator. Four or five people can now produce up to 50 liters of oil per day, using 500 coconuts.

Once communities were producing oil and had excess capacity, the issue then became establishing trade and logistics. To answer this need, Kokonut Pacific set up a facility in the Solomon Islands to handle research, technical support, trade, quality and logistics. Kokonut Pacific has become a vertically integrated enterprise that runs a cooperative of 20 producing units, serving 12 communities throughout the Solomon Islands. And the numbers are growing.

Several hundred direct jobs (mostly with young people who stay in communities) have been created, and thousands in the wider community are benefiting from this activity. It is also estimated that the flow through benefit to the communities from the production of VCO is more than five times that of producing copra.

For his work, Dr. Etherington has received an award from the Asia Pacific Forum for Environment and Development (APFED) for rehabilitating traditional communities and their economic platform. He's also received an award from

the Order of Australia.

## The Properties and Uses of VCO

VCO is comprised of 50% lauric acid, which is fairly rare for food oils. Lauric acid is a medium chain fatty acid (12 carbons)—also known as medium chain triglycerides, or MCTs. The overwhelming majority of seed oils (96%) contain primarily long chain fatty acids (14 or more carbons).

According to Dr. Etherington, the body digests fats in different ways. The shorter the fatty acid chain, the quicker it is metabolized. As a result, lauric acid is metabolized much more quickly than other fatty acids, similar to a carbohydrate. About two-thirds of VCO is made up of MCTs, which are digested very easily by the body. The only other place where there is a considerable quantity of MCTs is in breast milk, which is why children are able to digest it so easily.

Lauric acid becomes monolaurin in the body. Monolaurin is considered to be antimicrobial, antiviral and antifungal, and is purported to protect the immune system from a variety of infectious agents. Lauric acid may also increase metabolism.

VCO is also used quite a bit in cosmetic and skin care formulations. This is because the composition of fats in coconut oil offers emollient, soothing and protective properties. At room temperature the oil is solid, which makes it ideal for use in salves and other applications. VCO can also be used in cooking and is claimed to bring health benefits as well as flavor and functionality to a variety of dishes.

There are many potential uses for VCO for the product developer interested in novel ingredients for applications in nutraceuticals, functional foods and skin care. And the science on coconut oil, more specifically lauric acid and its byproduct monolaurin, continues to grow. VCO is also certified organic and fair traded, which supports a story of sustainability. And, don't forget, the human interest and economic development side of the story is also very appealing. NW



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