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SolarRain Water—Water Like Mother Earth Makes It

A Conversation with B.J. Kjaer

by Sydney L. Murray

We have so many opportunities in this country to live a healthy life, and many people can make the right choices to live a healthy and fulfilled life. Many others worldwide do not have the same opportunities. Over 1000 children will die today from unsafe drinking water.

Today over a decade into the 21st century, we still find that humanity's most pressing health concern is the access to safe fresh water. It sounds like such a simple thing, but up to 2.6 billion people live in very difficult conditions, without access to even basic sanitation. What is the solution to this global peril? One might be through an amazingly innovative company called SolarRain Water that creates great tasting water from ocean water. I had the opportunity to speak with B.J. Kjaer, Co-founder and CEO of SolarRain.

(edited by Max King)

How do you create solar rainwater from ocean water?

We start with locally sourced (extracted) ocean water. We heat the water at low temperatures using solar-generated thermal energy or evacuated solar tube technology. When the water heats it makes clouds, which get blown into a vapor room and when cooled, it rains. You can actually hear the rain falling in one of the tanks. We like to say that we are making rain, just like Mother Nature makes rain.

I first became involved in the idea when walking through my avocado groves. As the sprinkler's were going, there were droplets everywhere, and rainbows, and water glistening

on the leaves of the trees. It was a beautiful scene, except that there was a strong smell of chlorine. I'm an organic farmer. There was definitely something wrong with that picture.

I began talking with two gentlemen, a solar energy expert and a chemist who had been working on a saltwater conversion technology for several years. We developed three different prototypes and have refined the process into what we use today.

SolarRains's process doesn't remove the minerals naturally found in ocean water, which is similar to fluids found in the human body. The proportion of minerals and salts in human tissue is very similar to the composition of seawater, namely Potassium, Magnesium and Calcium. That's a big health benefit. I compare it to key. When you put a key into a lock and it has a proper cut, it will open the door. In other words, the body recognizes this mineral composition and can therefore better absorb them. We actually have every batch of water we produce tested by an independent lab in San Diego. People can visit our website and by entering the date code on the bottle, they can see what's in our water.

I have heard that "water is the next oil." What does that phrase mean to you?

I think that is the most important and number one reason that I have worked on this new product.

Again, I am a farmer and my water was cut back 30 percent a few years ago and I basically lost about 30 percent of my income. My trees need a certain amount of water and if I get 30 percent less, my trees cannot survive on 30 percent less—they don't produce fruit. I had to cut one third of my trees out because I had one-third less water.

And the fact of the matter is that 97 percent of all of the water on the planet is ocean water and less than 1 percent of the water on the planet is available for drinking water. We have a tag line that says, "97 percent of all of the water on the planet is ocean water—where do you think your water should come from?" We really feel that is important.

Some might say tap water is plentiful, but let's face it, in San Diego we are getting our tap water from the Colorado River and it travels thousands of miles and costs millions of dollars to pump it up over the mountains. A lot of it is lost just purely in evaporation, and [because of] getting from Colorado to San Diego from open rivers and canals, it goes through the desert at 120 degrees. The San Diego water department loses billions of gallons of water every year [due] to leaky pipes and for other

unknown reasons. The other aspect is that the aquifers are being depleted by water, and beverage companies [are] going into small towns and buying up the aquifers and pumping them dry so the farmers downstream don't get the water.

Do you see your technology going worldwide?

Our basic goal is that this could help people all over the world where there is no water. I think it is a system we could put in place in countries where there [are] certainly water needs, such as Mexico, Africa, or the Middle East.

Right now we are producing on a small-scale model [but the applications could be much larger]. You could provide water to a whole town. With our system we have about an 80 percent success rate. So our "waste" is 20 percent versus 50 percent in conventional reverse osmosis operations. And we have a 'by-disposal plan' of our brine. We are working with a guy in San Diego who "grows" coral and is working on a formula to use it for concentrated ocean water aquariums. He would have to haul less water around because he uses this concentrate [from our product]. And some day we hope to be able to produce sea salt, so there would be nothing going to waste. Again, we are importing sea salt [from all over the world, such as] the Mediterranean, Hawaii, and the Himalayans, when we should be making it right here in San Diego.

And if you had one, what would be your greatest passion?

I would love to see this county, this town, this state to be self-sufficient. I would love to do everything I can as an organic farmer and sell our products locally. I really believe in that. I would love to help everyone have a little piece of earth so they could grow their own food and get in touch with that. I don't want to see any food or water imported. I don't think we should leave it up to other nations to provide us with the essentials that the human body needs to survive: water and food.

Please tell us about your bottles.

We have this incredible product that tastes really great and we asked, "How do we get it to people?" And personally, I have always been a glass person. I love glass. But I found that glass is not economically feasible unless you import the glass from China. And of course I thought, how 'green' is that? We are trying to do everything local—how would that make sense? We have a low carbon footprint and then we are shipping glass from China to San Diego.

So then we considered [a] plant-based bottle. And then we found out you couldn't put the plant-based bottles in the regular recycling stream. Most of these bottles are made from corn, and in this country corn has been completely polluted and it is all GMO. It is very difficult to find organic corn and certainly no organic corn plastic.

And then we thought, what else can we do? How about recycled plastic? I went to our Chief Research Scientist, David, and he said, "That is a bad idea." He said recycled plastic is good, but to please make lawn chairs or car parts out of them, not put water in recycled plastic. When you grind up plastics to recycle you break down the long polymer chain, and when you break this chain it becomes porous which means it can leach into whatever you put into it.

We then found a company that has developed a biodegradable product. They add an enzyme to the plastic which acts as a catalyst for microbes to digest the plastic. So once the bottle is exposed to a microbial environment like a compost pile or a landfill, these microbes start attacking this bottle because they see food. It ahs been tested and it biodegrades between nine months and five years, depending on the microbial environment. But the tests done on it—an ASTM D5511 is a test that they do—show that it biodegrades in 280 days. Compared to thousands of years, even nine months to five years is a huge difference.

So that is what we ended up doing after all of the research for containers. We thought for now this is our best option. Yet we are constantly looking for better ways.

Where can consumers find it?

It's at Jimbo's Markets, Seaside Market in Cardiff, and it will be at Whole Foods Markets, OB People's Co-Op, a few restaurants and hotels.
I am out there pounding the pavements trying to tell our story. A lot of people hadn't tasted the water, said they loved the idea, but wanted to try it. We exposed [the water to] a small group of people and they loved the water and they loved the idea. I spent all day in La Jolla yesterday handing out samples to restaurants and stores. Everyone loved the water and thought it tasted very clean and couldn't believe it was from ocean water.

I think it is important that people put good healthy food and water into their bodies. By doing this I think our brain is healthier. You are what you eat. People are talking about organic food being better for you. There are studies out there, and it's proven

that organic is higher in nutrients. And it is certainly proven that chemicals and nutrient deficiencies cause problems in the human body. It is important to put healthy water in your body. San Diego city water is on the EWG's 10 Worst water list of all the cities in the US.

You are what you eat,
you are what you drink.
Do something healthy.