

Top Ten Global Invention To Be Tested In The Coachella Valley

By Kathy Gottberg (6/16/10)



This fall the Coachella Valley will be part of a large-scale global experiment using what *Popular Science Magazine* says is one of the “Top Ten Inventions for 2010.” According to *Popular Science*, the Groasis Waterboxx is “a box that quenches thirsty plants without irrigation.” Even better, inventor Pieter Hoff believes that the box could promote reforestation on a large scale to address global problems like hunger, erosion and climate change caused by global warming. To test the validity of those claims, students and teachers from Palm Springs Unified School District and other local volunteers will plant native desert trees in both our high and low desert communities this October.

Hoff, a native of Holland, invented the Groasis Waterboxx after retiring from the lily and tulip export business in 2003. According to Hoff, his understanding of how crops and trees grow in nature helped to motivate him. He was also deeply concerned with rising populations and the lack of safe drinking water in the world. Rather than using ground water and traditional irrigation techniques, Hoff believes that natural atmospheric condensation and rainwater systems are the key to plant germination, vitality and growth. His invention mimics that natural system and he conducted an initial three-year test in the Sahara desert in Morocco to prove it. Almost 90% of the trees planted in that test thrived and survived, in contrast to only about 10% of those planted without the box.

What does the box look like? The box itself is round and about the size of a small car tire. It is made from either regular plastic with a life-use of approximately 10 years and can be reused every growing season during that period for a long shelf life. Additionally, a new biodegradable box has been designed that can be used one time only—but the box then degrades as nutrient for the soil. The biodegradable box will be most useful in areas of planting that are particularly harsh and lack natural nourishment in the soil.

How does it work? The Groasis Waterboxx imitates nature in a number of ways. It is primarily a “water incubator” that both captures and produces water from the air through condensation and rain. Even in areas with extremely low and sporadic rainfall, by design the Waterboxx eliminates evaporation and distributes a minuscule (but effective) amount of moisture to the plant inside for up to a year. Not only does it prevent evaporation, it simultaneously keeps relative humidity and ground temperature at an even level during the day or night which further benefits the plant or seeds. Finally, it protects the plant from wind, blinding sun, weeds, and common rodents; while at the same time encourages strong capillary growth of the root system.

How much does it cost? Currently the biodegradable boxes cost approximately \$26 each. Unfortunately, they are not yet available on an individual basis but it is hoped that the Palm Springs Unified School District will be able to sell the boxes individually as part of their participation in the project. Those funds from the sale of those boxes will then be used to further the experiment. However, according to Pieter Hoff, “my ideal is that the device is available to everybody, everywhere.” According to his recent interview in the New York Times, “...my focus is to create a business model that enables the world’s poor to buy the box.” His ultimate goal is to reforest the planet and feed the world by planting five billion acres of desert, eroded by mankind, in the next 40 years.

So where does the Coachella Valley come in? Hoff recognizes that in order for Groasis Waterboxx vision to be achieved he must further test them in the most parched landscapes around the world. Here in our region several projects near the Salton Sea, Whitewater and Joshua Tree National Park are planned to start in October. The City of Sonoma and the Robert Mondavi Winery in Napa Valley are also planning projects in Northern California starting in late June '10. These California experiments will join twenty other countries around the globe spanning four continents to collectively reveal the efficacy of the Groasis Waterboxx system.

An added benefit is that the seventh grade science class at Desert Springs Middle School taught by science teacher Peter A'Hearn will conduct the local waterboxx experiments. A'Hearn admitted that the first proposal for the Waterboxx was to plant trees at school sites. But after learning more about the boxes and the vision he added, "I thought it was a better idea to identify locations where habitat restoration was being done."



"As a science educator this is an experiment that could work," said an enthusiastic A'Hearn. But, he said as he continued, "If it doesn't work, that is important data too. Best of all, the results the students collect will be real—and real life decisions will be made because of them. " Another obvious advantage is that these local young people will have the opportunity to connect and learn more about our local climate, growing conditions and form a deeper relationship to Mother Earth.



But Coachella Valley participation doesn't stop with students. Adult volunteers are not only welcome, but needed. At a recent meeting to announce and explain the Groasis Waterboxxes, possible plans to sell the boxes locally, and to arrange group, family and community days for other organizations to help and participate with the "experiments" were discussed. For anyone who is interested in getting involved, please contact Peter A'Hearn at: pahearn@psusd.us

The vision for the Groasis Waterboxx is extraordinary. However, it will clearly take more than the inventor, a local educator and students from the Palm Springs Unified School District to make it a reality. Still, it gives local residents another chance to get involved and do something to make a difference. Plus, it is a great reminder that the Coachella Valley is on the cutting edge of the many possibilities and opportunities related to a new clean energy future for our country and our world.