Source : pressdemocrat.com

Collecting moisture

Two projects using simple containers that helps plants grow in drier climates

KENT PORTER/ PD

Pieter Hoff developed the Waterboxx, which Popular Science magazine named one of its top 10 global inventions of 2010.

By JANET PARMER
FOR THE PRESS DEMOCRAT

Published: Friday, August 27, 2010 at 1:38 p.m.
Last Modified: Friday, August 27, 2010 at 1:38 p.m.

A simple plastic container with a cloth wick is coaxing plants to grow in climates with little rainfall, and it could have a profound impact on agriculture.

The Groasis Waterboxx works by taking rain, condensation and air moisture, such as fog, and delivering them directly to the plants via the wick.

Tests are under way at two North Bay locations as part of a worldwide experiment to see if the device can provide sufficient water to spur growth in seeds and young plants. It is not intended for regions that have plenty of precipitation.

The Sonoma Ecology Center is using it to plant oak trees near the Sonoma Developmental Center. Robert Mondavi Wines installed the boxes around new grapevines in two Napa County vineyards.

These projects join experiments in the Southern California desert, Spain, France, Kenya, Morocco, Holland and Ecuador.

The Waterboxx was invented by Dutch entrepreneur Pieter Hoff and caught the attention of Popular Science magazine, which named it one of its top 10 global inventions of 2010. The publication lauded the polypropylene device's ability to solve deforestation and water scarcity problems in dry regions of the world.

Hoff was the largest lily grower in Holland until selling his business seven years ago to focus on designing a water capture method. He spent years fine-tuning the Waterboxx and is still making improvements. The containers are 20 inches in diameter, 10 inches tall and sell for $27.50, including wind protectors and nails.

Hoff's vision is to make it available to those who live in dry environments and license production to manufacturers in numerous countries.

“The end result is the Waterboxx is an elegantly simple solution. It's definitely succeeded in several places,” said Richard Dale, executive director of the Sonoma Ecology Center.

Dale described the box as resembling an elongated hat box. After assembly, it is filled with water that is released slowly by a fiber wick that extends from the box. Once a plant's roots are established, the Waterboxx can be removed and reused.

Hoff introduced the box in January to representatives from local environmental, viticulture and agricultural businesses and organizations, and recruited a few growers willing to have their properties used as test sites.

The Sonoma Ecology Center is interested in native plant restoration, which can be challenging during the many months of no rainfall.

“We're constantly trying to find ways to establish plants,” said Dale. “For us, this is brilliant. The slow release of water encourages the roots to interact with soil moisture.”

As part of an official test for the Waterboxx, the Ecology Center placed boxes around oak seeds and oak saplings earlier this month. Dale said it will take at least a year for the plants to get established. Without a device like this, water would have to be hand-carried to the site until the plants' roots have grown deep enough to access moisture below the soil.

“What's really interesting about the Waterboxx is the ability to establish perennial plants, and fruit trees could get a big boost,” he said.

Ed Fogelman of the Kelly Fogelman Group Mill Valley is assisting Hoff with “strategic reputation development” and has introduced the Dutchman to California growers, scientists and educators.

He said Hoff is still troubleshooting potential problems, such as keeping small rodents out of the box and designing stakes to keep the box from getting toppled by strong winds.

“It's very exciting. I've got children and grandchildren, and this is something for the future. It's a way to fight hunger by planting trees and supplying water,” Fogelman said.

Five hundred boxes were assembled in June at two Robert Mondavi vineyards, and so far the results have been impressive, said Matt Ashby, director of vineyard operations.

The boxes were put on dry-farmed sauvignon blanc grapevines in a vineyard first planted in 1945. The vineyard lacked an irrigation system, and a tractor carrying a water tank drove through periodically to water the plants, said Ashby.

“We installed the Waterboxx and walked away. I think it's an ingenious idea,” he said. “We don't have to pay for fuel or a driver. There's more consistent watering designed to establish deep tap roots.”

“It's like building Ikea furniture. There are six steps, and anyone who can read instructions in five minutes can do it. It's not complicated,” Ashby said.

At another Mondavi site, 100 boxes were placed in a new chardonnay vineyard where drip hoses and emitters also are being used. Ashby will collect data from both locations at the end of this season and next year to determine if the plants are as productive with the Waterboxx as conventional watering methods.

“The reason we agreed to do it is the company's philosophy about sustainability and reducing our carbon footprint,” Ashby said. “It's very simple and low tech with no moving parts and can be reused. We were very impressed with the idea.”

More information about Groasis and the Waterboxx is available at www.groasis.com.
Janet Parmer is a Bay Area feature writer. You can reach her at jhparmer@comcast.net.