

# INVENTING A LOW-COST SOLUTION TO REDUCE MOLDY FOODS

## ‘DryCard’ wins Africa postharvest prize, takes guesswork out of drying

How do you see dryness? Drying food is one way many farmers preserve their harvest, but knowing when food is dry enough to store can be difficult — and mold growth on dried foods is a pervasive problem. For farmers, mold growth can mean postharvest losses and lowered market value. For consumers, aflatoxins from moldy foods can suppress the immune system, increase disease rates, and cause lifelong stunting in children.

To that end, researchers Michael Reid and James Thompson at the University of California, Davis, invented a low-cost, easy-to-use tool that farmers can use to measure food dryness, called the DryCard™.

The DryCard is the size of a business card and combines cobalt chloride paper, which indicates dryness by changing color, with a color guide on a laminated piece of paper. Repackaging the cobalt chloride paper with the color guide increases the usability of the strips and allows farmers to access this dryness indicator at just pennies per card.

To check that food is dry enough for safe storage, farmers can seal a DryCard and a sample of dried product in an airtight container. After a brief wait, the card indicator changes color based on relative humidity within the container. Matching the color of the indicator with the guide on the card shows whether food is dry enough to prevent mold growth. The DryCard is reusable as long as it is stored safely away from water.

In March, the DryCard was selected as a top emerging technology for improving postharvest practices in Africa — beating more than 200 technologies to win the grand prize at the All Africa Postharvest



By combining a strip of cobalt chloride paper with a color index, the DryCard indicates by color whether dried foods are dry enough to store safely, reducing the risk of mold growth. (Horticulture Innovation Lab photo by Brenda Dawson/UC Davis)

Technology and Innovation Challenge. Top technologies and innovations were invited to pitch to an audience of about 600 participants, including researchers, investors, extension agents, government executives, and farmers.

“I have never seen such strong interest in a technology like this,” said Elizabeth Mitcham, director of the Horticulture Innovation Lab, who represented the card during the competition. “This technology has high potential to make an impact — and not only with dried produce and vegetable seeds, which was our original intent. A lot of the interest we have seen is from organizations that work with staple crops too.”

In the wake of the competition and resulting publicity, interest in the DryCard has been high. In response to requests for samples, the Horticulture Innovation Lab has distributed more than 1,400 cards to

organizations in 17 countries. The team is also in talks with local entrepreneurs who are interested in manufacturing and marketing the cards in their own countries.

Bertha Mjawa is one of the first researchers to test out and promote the DryCard in Africa, with her Postharvest Consult and Capacity Building Company in Tanzania. Over the course of 5 months, Mjawa and her team sold 2,500 DryCards to 500 local farmers and organizations.

“The DryCard makes a promising solution for African farmers due to its cost effectiveness, clear indicators and ease of use,” Mjawa said. “Both farmers and agricultural experts can benefit from this technology.”

For updates, samples and more information about the DryCard, visit <http://drycard.ucdavis.edu>.



**USAID**  
FROM THE AMERICAN PEOPLE

**HORTICULTURE  
INNOVATION LAB**

**UC DAVIS**  
UNIVERSITY OF CALIFORNIA