

New, low-cost indicator of food dryness: DryCard

In developing countries, mold growth on dried foods can result in postharvest losses for farmers and unsafe foods for consumers. Food will not mold if it is properly dried, but smallholder farmers do not have access to a cost-effective way of assessing food dryness. Farmers who are able to assess dryness before storing can reduce postharvest losses and better provide consumers and their families with safe, higher quality foods.

How the DryCard™ works

The DryCard incorporates a cobalt chloride humidity indicator strip that changes color depending on the level of relative humidity. In an airtight container, the relative humidity of air around a product reflects the dryness of the product (this concept is called equilibrium relative humidity).

To use, place the DryCard and a sample of the dried product in an airtight container, such as a sealed plastic bag or a jar. After approximately 20-30 minutes, the card indicator displays a measure of the equilibrium relative humidity. Match the color of the strip with the scale on the card. If the indicator strip turns pink, then the product is too wet for safe storage. If the strip turns blue or grey, then the product is adequately dried. Store the card in a plastic bag to prevent contact with water. If cared for properly, the DryCard can be reused many times.



The indicator strip on a DryCard turns pink if product is too wet for safe storage. Blue or grey indicates product is adequately dry (shown here with drying beads).

Benefits

- All participants in the dry chain can more confidently store, exchange, and consume dried products.
- Farmers maintain quality and quantity of goods, allowing them to sell more product at higher prices.
- Consumers have increased access to safer, better tasting dried foods.

Basic costs to manufacture

- Cobalt chloride strips (approximately \$4 for 100 strips)
- Printed paper
- Plastic lamination (about \$12 for 500 cards)

The DryCard is inexpensive to make and is currently available in sample quantities from the Horticulture Innovation Lab. Visit <http://drycard.ucdavis.edu> for details.

What's next? Scaling up

- **Partnership:** The Horticulture Innovation Lab is working with researchers and development organizations to test usability and perceived value of the DryCard.
- **Education:** Increase awareness about relationship between equilibrium relative humidity and food safety. Train farmers and traders on how to use the DryCard. Collaborate with local organizations to raise awareness of the DryCard.
- **Scaling:** Identify local entrepreneurs interested in manufacturing and marketing the DryCard.

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For more information, visit <http://horticulture.ucdavis.edu>.

This fact sheet is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of the Horticulture Innovation Lab and do not necessarily reflect the views of USAID or the U.S. Government. Updated 03/17.