TECHNOLOGIES FOR HORTICULTURAL DEVELOPMENT

CoolBot provides inexpensive, effective cooling

In many developing countries, the rate of postharvest loss for fruits and vegetables exceeds 50 percent. Cool storage can greatly reduce these losses, increasing income for farmers. Cool storage is virtually non-existent due to the high cost of equipment and lack of knowledge about the benefits of cooling produce. Temperature control alone can extend shelf life by weeks or even months. Farmers who can store their produce longer can take advantage of better prices, as market prices can fluctuate dramatically over time.

How the CoolBot works

The CoolBot was developed by Store It Cold as an affordable way for small-scale producers to cool products on their farms. The Horticulture Innovation Lab has tested cool rooms equipped with the CoolBot on three continents.

The equipment:

- Overrides an air conditioner's temperature gauge, tricking it into working harder while preventing components from freezing.
- Converts an insulated room and an inexpensive, readily available, window air conditioner into a cool room.
- Substantially reduces the cost of a cool storage environment for fruits, vegetables, flowers and other products.
- Makes cool storage a viable option for farmers, cooperatives and market groups in the developing world.

Neeru Dubey, of Amity University, shows a CoolBot working in India during a Horticulture Innovation Lab project testing local installation in multiple countries, including India, Honduras and Uganda.

Benefits

- Farmers can store produce to sell in the off-season when prices are higher.
- Improved cold storage possibilities will stabilize fruit and vegetable prices, giving consumers access to nutritious fresh produce all year.
- Farmers are better protected from erratic market prices.

Basic costs

- $299 CoolBot
- $700 Air conditioner
- $2,000 Insulated room
- $200 Electricity costs/month

These costs are subject to local variation. Identifying local, effective options for insulated rooms is one objective of a related Horticulture Innovation Lab project.

What's next? Scaling up

- **Education:** Increase postharvest training and direct farmer outreach.
- **Adoption:** Work with industry, farmer cooperatives, local and regional markets, and bulk purchasers to adopt the CoolBot.
- **Investment:** Research innovative investment options for farmers and groups. Identify entrepreneurs eager to promote the CoolBot.

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