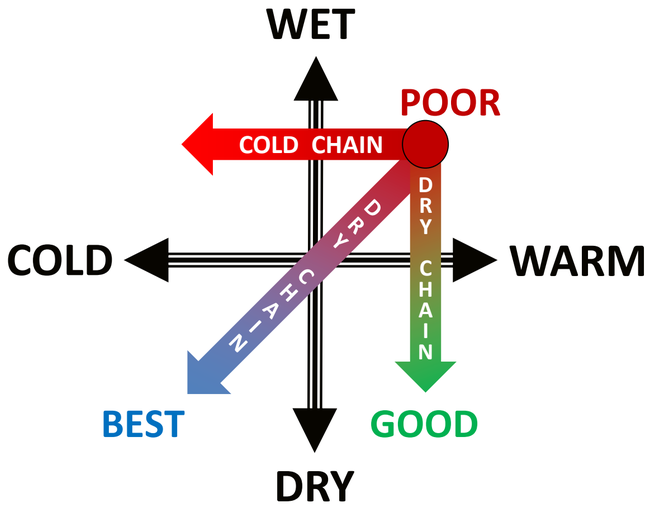
The Dry Chain Can Maintain Seed Quality in Humid Regions

Peetambar Dahal[1], Pedro Bello[1,2]; Johan Van Asbrouck[2], Keshavulu Kunusoth[3], Indra Raj Pandey[4], Luke Colavito[5], Kent J. Bradford[1]
[1]University of California, Davis, **USA**; [2]Rhino Research, Phitchit, **Thailand**;
[3] Acharya NG Ranga Agricultural University, Hyderabad, **India**; [4]CEAPRED, **Nepal**; [5]IDE, **Nepal.**

In humid regions, the major factor contributing to loss of seed viability is lack of adequate drying. Seeds (and other dry commodities) must be dried soon after harvest to preserve quality. Once dry, they must be packaged to prevent reabsorption of water due to ambient high humidity. We have termed this the “DRY CHAIN” in analogy to the cold chain for fresh produce. However, once dry products are hermetically packaged, they do not need to be refrigerated and no further energy input is needed to maintain their quality during storage.

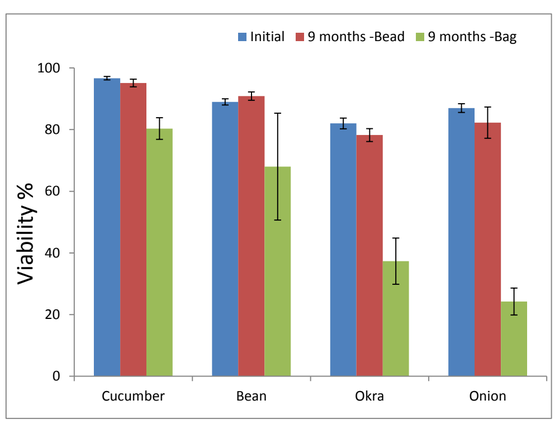


Sun or air-drying is generally unable to dry seeds sufficiently in humid climates.

Seeds are harvested at moisture contents that are too high for safe storage, so further drying is required before storage.

Drying Beads (desiccant) can dry seeds to low moisture contents for safe storage.

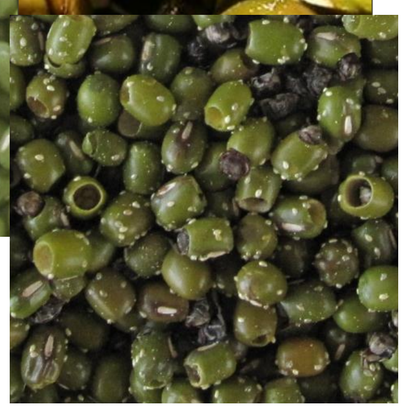
Simple, low-cost methods are available for monitoring seed RH.



Drying beads and hermetic storage maintained vegetable seed viability at multiple locations in Nepal.

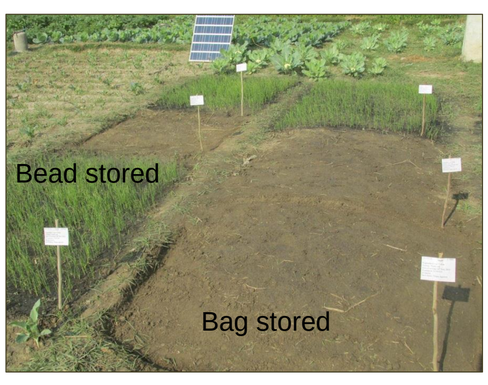
Dry seeds should be packaged in water-proof containers.

Bead stored



Bag stored

Drying seeds below 40% RH prevents damage from storage insects.



Field trial following onion seed storage.

hortcrsp.ucdavis.edu USAID FROM THE AMERICAN PEOPLE HORTICULTURE INNOVATION LAB UCDAVIS UNIVERSITY OF CALIFORNIA www.dryingbeads.org

This report is made possible by the generous support of the American people through the United States Agency for International Development (USAID) under Award No. EPP-A-00-09-00004. The contents are the responsibility of the coauthors and do not necessarily reflect the views of USAID or the United States Government.