



# Seed Harvesting and Storing

## About Seed Quality

The potential yield and quality of any crop greatly depend on the viability, vigor and quality of the seed planted. Quality components include physical and genetic purity, germination, vigor and viability.

### Seed harvesting

- Seed moisture content is a good indicator of seed maturity. Suggested harvest moisture contents for various seeds:

Crop	Harvest moisture content %
Corn / maize	30-35
Bean and pea	14-20
Rice	20
Small grains	14-24

Simple grain moisture meters are available.

### Seed drying

- Heat is used to dry seeds because it increases the water-holding capacity of the drying air
- The relative humidity (RH) of the air decreases approximately one-half for every  $10^{\circ}\text{C}$  increase in temperature. Therefore it is easier to dry grain during the hotter part of the day.

Temperature °C	Relative Humidity %
15	100
25	50
35	25

### Seed storage

- The moisture content at harvest is higher than needed for good seed storage.
- Lower temperatures reduce damage from high respiration, mold, and insects
- Use sealed airtight storage if possible.

### Seed storage (continued)

- Suggested storage for high seed quality

Seed Type	Storage Moisture Content %
Starchy seeds (beans, cereals)	<12
Oily seeds (soybean, Brassicas)	<9
Sealed storage (most vegetables)	6-8

### Seed longevity/viability

- Seed viability during storage decreases by around one-half for every
- 1% increase in moisture content
  - $5^{\circ}\text{C}$  increase in temperature
- Loss of seed viability starts as soon as seeds are mature



### Seed packaging and long-term storage

- In open storage, seed moisture content varies with the relative humidity. Seed in sealed packaging maintains low relative humidity
- Seed storage is best with airtight sealed storage with both low moisture content and low temperature; e.g. store seed long term at 25% RH and  $-20^{\circ}\text{C}$
- Rule of thumb: store seed such that  $\text{Temp } (^{\circ}\text{F}) + \text{RH\%} < 100$

## Summary: Seed Storage, Longevity and Deterioration

- Seeds have a finite lifetime
- Seeds absorb and lose moisture in response to the humidity of their environment
- Seed longevity is very sensitive to moisture content and temperature
  - Sealed airtight storage to prevent moisture absorption extends storage life
  - Low temperatures extend storage life

Reference: <http://www.knowledgebank.irri.org/qualityseedcourse/index.php>

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