Grain characteristics

Structural, Nutritional & Storage

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About the Know Millets Webinars

▸ Different aspects of millets
  ➕ Ecology
  ➕ Historical context
  ➕ Sustainable food systems
  ➕ Community centric
  ➕ Nutrition & Socio – economics
  ➕ Technology & Engineering

*Sustainable food systems perspective*

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In this presentation

▲ Why use characteristics?
  ➣ For deriving better value
  ➣ For intrinsic benefit

▲ How of characteristics
  ➣ Tools & Techniques
    ★ Physical
    ★ Cooking

▲ Storage
  ➣ Challenges
  ➣ Solutions

▲ Summary

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Characteristics – Why?

❖ For deriving better value
  ✦ Mapping the variations
    ★ Rainfed crops
  ✦ Varietal improvements
  ✦ Communication

❖ For intrinsic benefit
  ✦ To know them better
  ✦ Agro-bio diversity

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Characteristics – Parameters

- **Physical**
  - Size
  - Colour
  - Shape
  - Layers
  - Moisture content

- **Cooking**
  - Water
    - Hardness of water
  - Time
    - Heat
    - Pressure
Tools & Techniques – Physical

- Clear objective to characterization
- Lighting
- Sampling techniques
- Physical Characteristics
  - Magnifying glass
  - Ruler
  - Camera

Observe > Make notes > Discuss > Repeat

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Tools – Magnifying Glass

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Sample photos
Tools & Techniques – Cooking

- Even more important
  - Patience
  - Notes (and Photos)

- Design of experiments

- Compare to bringing 1 ltr of water to a boil

- Instruments to measure
  - Volume
  - Weight
  - Temperature
  - Time

Design > Trial > Make notes > Discuss > Repeat
Storage

- Extremely nutritious
  - For many species
- Pest Infestation
- Rancidity

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Storage – Challenges

⚠️ Pest infestation

- Husked
  - In storage
  - Post Hulling only
- Naked grains
  - From farm
  - In storage

⚠️ Rancidity

- Millet rice – 30 to 160 days
- Millet grits & rawa – 15 to 90 days
- Millet flours – 5 to 15 days
Storage – Solutions

- Pest Infestation
  - Design of
    - Facility
    - Machines
    - Tools
    - Process
  - Discipline & skill recognition

- Rancidity
  - Design of
    - Machines
    - Tools
    - Process
  - Discipline & skill recognition

Shorter Supply Chains > Community Centric F.S.

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Summary

▲ Characteristics - to recognize for what they are

▲ Tools
   ✤ Innovate
   ✤ Improvise
   ✤ Systematize

▲ Storage challenges can be addressed with systemic intervention

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Thank you!

For more info...

http://themillet.org
http://millets.wordpress.org
http://rainfedindia.org