

# Millet Rice: Quality Tests & Consumer price concerns

a short presentation by  
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At the  
National Seminar on Emerging Trends in  
Processing & Value Addition of Small Millets  
organized by the  
Scaling up Small Millets & Nutritious Foods Project  
DHAN Foundation  
As part of  
The Building Resilience for Sustainable Development

Please note slide number  
for easy reference

# Today's presentation

- **What are small millet rice?**
- Quality expectations
- Quality Tests
- Price Concerns
- Some answers & Calculations



Kodo millet rice - pressured cooked

# Cereal grains

## ➤ Husked cereal grains

- ◆ Paddy, Foxtail M., Little M., Kodo M., Proso M., Barnyard M., Browntop M., etc.

## ➤ Naked cereal grains

- ◆ Wheat, Finger M., Sorghum, Pearl M., etc.

# Staple forms of husked grains

- Rice, అరిశ్శ, బియ్యము, चावल, Arisi
- Grits / Broken, నుళ్ళు, సోక, दलिया
- Semolina / Rava, రవే, రవా, Ravi
- Flour, ఓట్టు, పిండి, आटा, Maav

# Small millet rice

- Foxtail millet rice
- Little millet rice
- Kodo millet rice
- Proso millet rice
- Barnyard millet rice
- Browntop millet rice

# Today's presentation

- What are small millet rice?
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# Desired Qualities in Rice

- Clean
  - ◆ No stones & pebbles
  - ◆ No straws & sticks
  - ◆ No weed seeds & other objects
- Minimum unhulled grains
- No pest infestation
- Uniform sized rice kernels
- Minimum broken / shattered rice kernels
- (some) bran retained
- Low bran damage



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# Desired Qualities in Rice

## ➤ **Clean**

- ◆ **No stones & pebbles**
- ◆ **No straws & sticks**
- ◆ **No weed seeds & other objects**

## ➤ **Minimum unhulled grains**

- **No pest infestation**
- **Uniform sized rice kernels**
- **Minimum broken / shattered rice kernels**
- **(some) bran retained**
- **Low bran damage**

# Quality tests for clean rice

## 1. Observe visually

- Spread a thin layer over a surface
- Use a magnifying glass

## 2. Use a winnowing pan

- ◆ Toss up the material
- ◆ Straw, light sticks, dust, husk, etc. separate out

## 3. Add to a bowl of water

- ◆ Lighter objects and grains float up
- ◆ Heavier objects and grains settle down
- ◆ Agitate and pour into another bowl

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# Tests for pest infestation

## 1. Observe visually

- Creepy crawlies !
- Nests & clumps
- Dust

## 2. Use a winnowing pan

- ◆ Hollowed out grains
- ◆ Nests and clumps

## 3. Add to a bowl of water

- ◆ Worms and hollowed out rice grains float

## 4. In<sup>up</sup> a packet

- ◆ Air sucked out
- ◆ Cob web like inside the packet
- ◆ Dust / sediment

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# Tests for bran retention

## 1. Observe visually

- Colour not white
- Dull not bright

## 2. By touch

- ◆ Hold a fistful & drop it after 10/15 seconds
- ◆ Feel the contrast in oiliness

## 3. Wash in a bowl of water

- ◆ The bran sediments

## 4. While cooking

- ◆ Oil film on the top
- ◆ Residue on the inside of the lid cooker / utensil

# Desired Qualities in Rice

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  - ◆ No stones & pebbles
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- **Low bran damage**



# Tests for bran damage

## 1. Observe visually using a magnifying glass

- Minimum scratches on the rice kernel surface
- Residual dust on surfaces the material has come in contact with

## 2. Change in the odour as the bran on the millet rice kernel goes rancid

**Need to come up with ways to objectively quantify extent of bran damage**

# Quality of small millet rice

- Look for clean small millet rice that ...
- Is Clean with
  - ◆ no stones & pebbles
  - ◆ no straws & sticks
  - ◆ no weed seeds & other objects
  - ◆ minimum grains (husk still on)
- Is Free of pest infestation
- Has Uniform sized rice kernels
- Has Minimum broken / shattered rice kernels
- Has (some) bran retained
- Has Low bran

# Quality of small millet rice

➤ Cook a sample

◆ Check for bran content

◆ Check for cooking quality

✓ Satisfied? Great ! Let the vendor know

✗ Not happy? Try a different source

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# Consumers' price concerns

If its a hardier crop and grows without input why is it more expensive?

Polishing involves additional steps in processing, even after that why are polished millets cheaper?

We agree millets are healthy and good for the environment, but its too expensive!!

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# 1. Hardier crop, yet more expensive?

- Millet supply chain is weak
  - ◆ Gaps lead to buffering and an increase in cost
  - ◆ Inefficiencies in production, storage, processing
- Millet rice are good food for pests too
  - ◆ Protection from pests is a challenge
  - ◆ Especially when not using chemical agents



## 2. Why are polished millets cheaper?

### ➤ Polishing

- ◆ reduces the grains to their lowest common factor
- ◆ Allows for use of color sorters
- ◆ Larger scale processing is possible

### ➤ A brazen display of market inclination for

- ◆ short term individual financial benefit
- ◆ over a long term societal benefit



### 3. Millet rice are too expensive !

#### ➤ Per kg cost

- ◆ ~ Rs. 100/kg of unpolished millet rice
- ◆ ~ Rs. 40/kg of polished paddy rice

#### ➤ Per meal cooked Qty for a family of 3

- ◆ 300 to 400 gms of cooked unpolished millet rice / meal
- ◆ 600 gms of cooked polished paddy rice / meal

# Are millet rice too expensive?

## ➤ Qtty used for cooking a meal

- ◆ Unpolished millet rice typical takes 1:3 water
  - For 400 gms cooked unpolished millet rice, 100 gms of dry rice is needed
- ◆ Polished paddy rice typical takes 1:2 water
  - For 600 gms cooked polished paddy rice, 200 gms of dry rice is needed

## ➤ Cost per meal

- ◆  $(\text{Rs. } 100 \times 100 / 1000) = \text{Rs } 10 / \text{meal for unpolished millet rice}$

- ◆  $(\text{Rs. } 40 \times 200 / 1000) = \text{Rs. } 8 / \text{meal for polished paddy rice}$

# Are millet rice too expensive?

## ➤ Per day cost

- ◆ One feels full longer after an unpolished millet rice meal
- ◆ Expenses on snacks goes down

## ➤ This does not take into account

- ◆ Health benefits
- ◆ Better Comfort between meals
- ◆ Improved Efficiency, productivity, etc.

# Conclusions

- ▲ Quality Checks: very very important
  - ✦ Cannot sell philosophy, product has to talk
- ▲ Need to address consumer concerns
  - ✦ Price
  - ✦ Authenticity
  - ✦ Reliable supply
- ▲ Consumer engagement is the crux

# *Thank you !*

For more information

**<http://themillet.org>**

**<http://millets.wordpress.com>**