Know Millets Webinars
May 2020

Session #03

Millets and Agro-bio, Food & Nutritional Diversities

Past, Present & Future

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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*

Please note slide number for easy reference during Q&A
In this presentation

- Diversity
  - What is it?
  - Why nourish it?

- Agro-bio diversity
  - Role of millets

- Millets & food diversity
  - Security & Sovereignty

- Nutritional diversity
  - What millets offer?
  - Bio fortification

- Summary

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What is diversity?

- Dynamic and multiple Resource utilization cycles
  - Oxygen
  - Energy
  - Nutrients
- Value of each determined by its interactions with the other
  - Higher significance than its intrinsic value
- More than the sum of parts
Why nourish diversity?

- Evolution
  - Natural Selection
  - Survival of the fittest

- Climate Crisis

- Anthropocentric reasons
  - Manage risk
  - Protecting an inheritance
Agro-bio diversity ... in theory

- Biological diversity
  - Flora
  - Fauna
  - Micro-organisms

- Agriculture
  - Production for human consumption (use)
  - Food (or other material)
Agro-bio diversity ... in practice

Many different philosophies
- Natural farming
- Permaculture
- Sustainable farming / LEISA

Agro-bio diversity in a farm
- Closes the nutrient loop
- Encourages thinking/planning
  - Beyond self
  - Long term
Millets in agro-bio diverse farms

- Minimal inputs
- Shallow roots – top soil anchors
- Pest Management
  - Pigeon pea + Foxtail millet system
- Fodder value
Millets & food diversity

🔺 Current staples are
  ✤ High input
  ✤ Sensitive crops

🔺 Millets are
  ✤ Low input
  ✤ Hardier

🔺 Millets are already part of contingency plans across the land
Millets: food security & sovereignty

- Wider procurement
  - Dry land farms
  - Small & marginal farmers

- Supply chain
  - Localized
  - Shorter

- Community centric approach
Nutritional diversity

- Nutrients need to be
  - Assimilable
  - Accessible
  - Sustainable

- Millets
  - Diversify cereals
  - Wide range of nutrients

### Nutritional content in 100 gms of dry Grain

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<tr>
<th>Grain</th>
<th>Protein (gms)</th>
<th>Carbohydrates (gms)</th>
<th>Fat (gms)</th>
<th>Minerals (mg)</th>
<th>Fiber (gms)</th>
<th>Calcium (mg)</th>
<th>Iron (mg)</th>
<th>Thiamin (mg)</th>
<th>Nicotin (mg)</th>
<th>Energy (kcal)</th>
<th>Threonine (mg)</th>
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Compiled from a study published by National Institute for Nutrition, Hyderabad and other sources for Czarno and Brown top millet.
Nutritional Diversity vs. Fortification

- Holistic vs. Reductionist
- Transformation vs. Tweaking
- Entrepreneurship vs. Corporatization
- Community centric vs. Product centric
- Skill development vs. Increasing external dependency
- Long term vs. Short term
Summary

🔹 Diversification is inevitable

🔹 Need to build resilience to survive disasters
  - Natural
  - Man made / Economic

🔹 Bringing back millets is one of the first steps
Thank you!

For more info...

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

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