

Review of WHO meeting outcomes

**Highlights from Technical Consultation meeting
organized by WHO in collaboration with GAIN for
Rice Fortification in Public Health, September
2012, Geneva**

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Technical Consultation Meeting

❑ Objective:

To provide additional technical inputs to the guideline development process

❑ Specific objective:

To review the industrial and regulatory technical considerations in rice fortification; as well as the considerations for implementing it as a public health strategy and assuring equitable access and universal coverage

Participants

- Academia (researchers in public health and food fortification)
- Private sector (rice producers/manufacturers; premix suppliers; retailers)
- Civil society (NGOs working on food fortification)
- UN agencies
- Donor agencies

Technical Consultation Meeting

Topics of Background papers commissioned:

- Different technologies used to produce fortified rice
- Worldwide rice consumption
- Stability of micronutrients in fortified rice and rice products
- Bioavailability of specific nutrients, i.e. iron, zinc
- Methods to estimate appropriate fortification levels in different types of rice
- International experience with legal frameworks
- International experience with norms and standards

Technical Consultation Meeting

□ Outcomes:

- Hard copies of the special supplement of the *Annals of the New York Academy of Sciences* will be distributed at this workshop.
- Electronic copies are available on the memory stick distributed.

Papers

1. Considerations for rice fortification in public health: conclusions of a technical consultation

- There is no one model that would increase the micronutrient intake for all populations and population groups
- Various approaches need to be combined to be able to affect most, if not all segments of the population and more importantly, population groups with relatively limited access to a nutritious and diverse diet
- Nutritional needs of population, rice consumption profile of target groups, current programs and their coverage and existence of effective delivery platforms set the benchmark for which nutrients and quantity of nutrient for fortification.

2. Fortification of rice: technologies and nutrients

- Both warm and hot extrusion can be recommended;
- Dusting is not a suitable technology where wash-stable fortified rice is required
- Coating technologies require wash-stable coatings.

3. An overview of global rice production, supply, trade and consumption

- International reference prices for long grain white rice have declined significantly from levels of the previous 3 years.
- Several nations hold the view that food security can only be addressed through self-sufficiency production policies. They usually achieve this self-sufficiency at the cost of export markets resulting in more volatile prices and generally losses for producers that have a competitive advantage to supply rice on the world market and artificially lowering local prices and profitability.
- Investments in R&D, logistics, and infrastructure will enhance a more stable and responsive rice trading environment to ensure this growth.

Papers

4. Rice industrial processing worldwide and impact on macro- and micronutrient content, stability, and retention

- Macro- and micronutrient content, stability and retention vary with processing methods. Although improvements in nutrient content, stability and retention, challenges are present in the technical, logistical and practical aspects of rice fortification.
- Technical difficulty in rice fortification is specific to the nutrient. Some nutrients require more complex methods.
- It is necessary for nutritional care of population and improvement of rice processing technologies to ensure achievement of sustainable solutions against malnutrition among rice-consuming populations.

5. Stability and retention of micronutrients in fortified rice prepared using different cooking methods

- If appropriate technology is used (considering food habits/cooking practices) rice can deliver micronutrients
- Retention levels were above 80% except for vitamin A.
- Vitamin B12 and folic acid overage of 50% seems to be too high; overages of 10% is suitable for iron and zinc.

6. Organoleptic qualities and acceptability of fortified rice in two Southeast Asian countries

- Studies show that acceptance was demonstrated in Vietnam and Cambodia (cold and hot extruded)
- Introduction of fortified rice through food-based social safety nets can be relatively straightforward with a centralised location for rice blending. However, fortification of rice at village level might present a few challenges, e.g. correct blending ratio and obtaining homogenous mixtures with minimal variation.
- Consumers need to be educated about the different organoleptic qualities of fortified rice to ensure compliance.

Papers

7. Proposing nutrients and nutrient levels for rice fortification

- Rice fortification levels should be guided on existing flour fortification guidelines for iron, zinc, vitamin A, folic acid, vitamin B12 and adding thiamin vitamin B6 and niacin
- Consider the possibility to fortify with multiple micronutrients
- For iron, fortified rice should provide 7mg Fe/100g using micronized ferric pyrophosphate
- Caution to not oversell impact on iron deficiency

8. Rice fortification: a comparative analysis in mandated settings

- Legal framework for rice fortification – government engagement and stewardship is essential, passing a mandatory law is however only meaningful when appropriate legislation is put in place and enforcement; trade mechanisms need to be understood
- Legal mandates and financial incentives and disincentives alone are often not sufficient for creating markets
- Market development is crucial and the risk needs to be shared by the public and private sector.

9. Review of the cost components of introducing industrially fortified rice

- High start up costs require public/donor engagement
- Costs are highest during the preliminary stages, e.g. reviewing the feasibility of rice fortification and they start to decrease when programs have begun → economies of scale
- Different costs are borne by different stakeholders → increase feasibility of implementing rice fortification programs that extend out to vulnerable populations with insufficient access to affordable nutritious foods.

Future Research Priorities

- Stability of different micronutrients in context specific environment
- Nutrient-nutrient interaction to better understand relative bioavailability and phytate effect on iron absorption
- Researching optimal delivery platforms for reaching the target population
- Effectiveness of different fortification methods in different contexts



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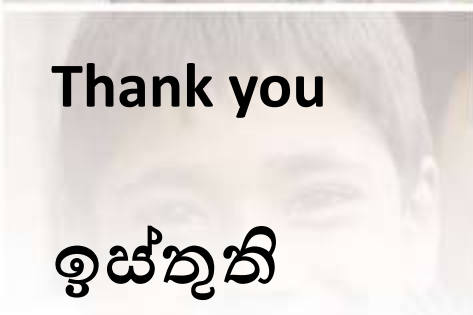
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Thank you

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Terima kasih

Salamat Po



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SCALING UP
RICE FORTIFICATION
IN ASIA

Bangkok, September 16-19, 2014

