

SAVING LIVES
CHANGING LIVES



RICE Fortification WFP Myanmar

Hidden Hunger and its Remedy

Globally, more than two billion people are affected by micro-nutrient deficiencies, also known as hidden hunger. In low- and middle-income countries, multiple micro-nutrient deficiencies tend to co-exist, as they share common causes. One of the most advanced and effective means to tackle the hidden hunger is fortification of food with micro nutrients.

Rice fortification is the enrichment of rice with essential vitamins and minerals post-harvest to increase its nutritional value. Current available technology can produce fortified rice that is safe, looks and tastes like normal rice, and can be prepared the same way. The consumption of fortified rice increases micro-nutrient intake without requiring consumers to change their buying, preparation or cooking practices. Fortified white rice has a significantly higher micronutrient content than non-fortified rice, including brown or parboiled rice which are not widely consumed in Myanmar.

WFP and Rice Fortification

Committed to efforts that ensure that every man, woman and child enjoys their right to adequate food both in quantity and in quality, WFP supports rice fortification as one

important and effective approach to improving access to additional minerals and vitamins that enrich the diets of large segments of the population. WFP has in-house technical expertise on rice fortification and has been closely involved in introducing and supporting rice fortification in other Asian countries, such as India, Cambodia and Bangladesh. The positive experience in other countries has contributed to WFP's commitment to be a key technical partner in the introduction and scaling up of fortified rice in Myanmar.

Myanmar and Rice Fortification

In Myanmar, many people predominantly eat milled rice and a limited variety of other foods, which leads to insufficient consumption of nutritious foods needed to sustain a healthy and active life. Milled rice is a good source of energy, but a poor source of micro-nutrients. In addition, consumption of meat, eggs, dairy, vegetables and fruits is generally low and seasonal. Therefore, there is a high need to improve local production and availability of year-round nutritious foods.

With the Myanmar population relying on rice as their staple food, rice fortification offers a unique opportunity to substantially improve the nutrition and health status of a large number of people at very low cost.



Based on 15 countries, of which four in Asia, the increased costs to fortify rice is between 1 to 10 percent.

At the same time, it is important to keep in mind that rice fortification cannot eliminate all micronutrient deficiencies and, therefore, should be part of a more comprehensive strategy to address these deficiencies.

Since 2015, WFP has been supporting increased and sustainable access to fortified rice throughout Myanmar, in close collaboration with the Ministry of Health and Sports, other government institutions, the private sector and stakeholders. WFP has contracted a local rice miller to blend rice kernels into fortified rice following compositional guidelines endorsed by the Myanmar multi-stakeholder Rice Fortification Working Group in 2014.

With funding support from the Livelihoods and Food Security Trust Fund (LIFT), WFP is targeting Rakhine State for fortified rice distribution due to high levels of malnutrition, with stunting rates at 37 percent and wasting at 14 percent, coupled with other vulnerabilities, including high food insecurity. Since September 2018, WFP has distributed over 300 MT of fortified rice to over 10,000 internally displaced people (IDP) in Sittwe Township of Rakhine State as household rations along with the emergency food distribution. The initiative is ongoing with a budget of over USD 380,000 supported by LIFT.

WFP is also planning to scale up the consumption of fortified rice in other regions of Myanmar. During the first half of 2019, WFP plans to organize an acceptability study in IDP camps in Kachin State to assess whether the fortification brings changes in the sensory qualities of rice using a combined sensory testing and consumption study. WFP aims to use the results of the study as an advocacy tool to further scale up the distribution and consumption of fortified rice throughout Myanmar.

Landscape analysis for rice fortification

The feasibility and sustainability of rice fortification depends on the structure and capacity of the rice milling industry, the available distribution channels, rice consumption patterns, consumer preferences, market size, rice supply chain, and the policy and regulatory environment. To assess these factors, WFP conducted a rice landscape analysis in the initial stages of introducing rice fortification. The rice landscape analysis helped to determine how to integrate fortified kernel production and blending into the rice supply chain, the most appropriate delivery options, which stakeholders to engage and how to adapt the regulatory and policy environment.



WFP's Rice Fortification activities are funded by:



Photo: An awareness raising session on nutrition and fortified rice at an IDP camp in Sittwe

Target populations for rice fortification

The potential for individuals to benefit from rice fortification varies across the course of a lifetime, and depends on the micronutrient requirements, dietary intake, the amount of rice consumed, and the potential of fortified rice to fill micronutrient gaps. Pregnant and lactating mothers and young children aged 6 to 23 months will require other interventions, such as iron/folate multiple micronutrient supplementation, although fortified rice will help meet micronutrient needs. A lack of the necessary nutrients may cause disability and, in cases of severe deficiency, even death.

Rice fortification or bio-fortification?

In rice fortification, micronutrients are added *after* the rice has been harvested. In bio-fortification the micronutrient content is increased through breeding or genetic modification (GM) and thus occurs *before* harvesting the crop. Only a limited number of nutrients can be added so far through bio-fortification. In addition, the levels of nutrients that are added to rice can be much higher with fortification than with bio-fortification.

Is rice fortification safe?

The fortification of staple foods and condiments – a strategy used for more than 90 years – has been proven safe and effective in significantly contributing to the reduction of micronutrient deficiencies. As with other food fortification, rice fortification is safe because the type and levels of micronutrients added are calculated based on: (1) the recommended daily intake of specific micronutrients by age group and gender, (2) the highest level of intake that poses no risks in an age and gender group, (3) the level of specific micronutrients typically consumed by the target population, and (4) the daily/regular quantity of rice consumed by the target population. This information is used to calculate the gap between the micronutrients consumed and the micronutrients required by specific groups. This gap is used to determine the type and quantity of specific micronutrients that will be included in the rice.

Coverage: To achieve the full potential of rice fortification as a cost-effective intervention for addressing widespread micro-nutrient deficiencies, it must be feasible to fortify a large proportion of the rice supply, especially the rice consumed by those who can most benefit from its consumption.

Micro-nutrients include vitamins and minerals which each have a specific role in the functioning and processes of our body, such as supporting the nervous system, eye functions, metabolism, growth and brain functions.

Contact:

Ms. Melody Muchimwe, Nutritionist
melody.muchimwe@wfp.org

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