

Combating malnutrition by increasing access to fortified rice in Myanmar

Frequently asked questions about fortified rice

1. What is fortified rice?

Fortified rice has added vitamins and minerals that provide us with vital nutrients for good health and well-being. Made from naturally available rice flour, the extruded fortified grain is mixed with traditional rice in a 1:99 ratio.

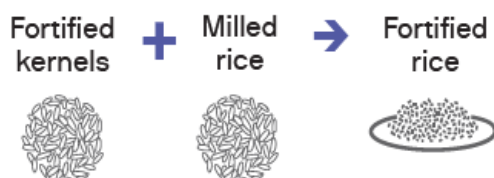
STEP 1

Create fortified kernels



STEP 2

Blend fortified kernels with milled rice



2. Why fortify rice?

Rice is the staple food of Myanmar. Per capita consumption per month is 14.5 kg in rural households and 12.5 kg in urban households. When traditional rice undergoes processing, such as milling and polishing, it loses essential nutrients. Although traditional rice is rich in carbohydrates, which give us energy, it lacks essential vitamins and minerals. Fortifying rice involves adding these nutritional benefits back into the traditional rice. Rice fortification is the most affordable and effective way to improve nutrition without asking people to change their eating habits.

3. What are the benefits of fortified rice?

Fortified rice has been used around the world since the 1930s as a well-known, safe, and effective way to improve public health. Missing nutrients in the daily diet, such as vitamin A, iron, B vitamins, and zinc, are added to the rice to enhance its nutrient quality. The benefits of these vitamins and minerals are given in Table 1.

Table 1. Benefits of fortified rice.

Nutrients	Benefits
Vitamin A	<ul style="list-style-type: none"> • Needed for healthy vision. • Strengthens immune system.
Vitamin B1 (thiamine)	<ul style="list-style-type: none"> • Essential for normal growth. • Improves appetite. • Promotes nerve and muscle function.
Vitamin B12	<ul style="list-style-type: none"> • Helps in forming red blood cells. • Prevents anemia.
Folic acid	<ul style="list-style-type: none"> • Essential for red blood cell formation. • Supports development of the brain and spinal cord in babies. • Prevents neural tube defects in pregnant women.
Iron	<ul style="list-style-type: none"> • Helps in forming red blood cells and hemoglobin. • Essential in preventing anemia. • Plays an important role in immune function. Deficiency degrades nonspecific immunity, the body's first line of defense against pathogens.
Zinc	<ul style="list-style-type: none"> • Essential for normal growth. • Strengthens immunity.
Niacin	<ul style="list-style-type: none"> • Promotes blood circulation. • Aids in normal brain functioning. • Boosts memory.
Vitamin B6	<ul style="list-style-type: none"> • Helps in forming red blood cells. • Enables proper nerve function.

4. Do you prepare fortified rice differently?

No! You can rinse the rice exactly the same way as traditional rice, without the vitamins being washed off, and then cook it as you would traditional rice. Fortified rice can be safely stored in dry conditions for 24 months, just like traditional rice.



Fortified rice is prepared the same way as traditional rice. Photo: PATH/Minzayar Oo.

5. Does fortified rice taste like traditional rice?

Yes! When fortified rice is cooked, it has the same taste, color, and texture as traditional rice. In Myanmar, both Pawsan and Emhata varieties are available, so no matter what rice you prefer, you can continue to enjoy that taste—with added health benefits.



School children eating fortified rice. Photo: PATH/Minzayar Oo.

6. Is fortified rice genetically modified? Is it the same as plastic rice? Is it safe for consumption?

Fortified rice is neither genetically modified nor plastic rice. The ingredients—rice flour, vitamins, minerals, and traditional rice—are safe for consumption.

7. Does fortified rice change color during cooking?

Fortified rice does not change color when cooked alone. Some grains of rice may turn to a purple color when cooked with vegetables or seaweeds rich in iodine, which reacts with the starch in the fortified rice kernels to form the purple color. This fortified rice is safe for consumption and does not cause any change in taste. It is an indication that the fortified rice is rich in micronutrients required for well-being.



Fortified rice cooked with vegetables can turn a slight purple color, an indication the rice is rich in micronutrients. Photo: PATH/Nilar Aung.

8. Who should eat fortified rice?

Fortified rice is beneficial for everyone in Myanmar!

9. Is rice fortification a proven intervention?

Yes! Globally, more than 20 scientific publications over the past two decades have reported the effectiveness and efficacy of fortified rice, demonstrating that it is safe and effective for all, especially women and children. Fortified rice has shown to increase hemoglobin levels and iron stores and reduce the prevalence of iron-deficiency anemia, as well as increase total body and serum retinol, zinc, folic acid, vitamin B12 and thiamine status, and reduce vitamin A deficiency and night

blindness. Fortified rice also can contribute to improved cognition and physical performance. Many more studies, conducted in more than 25 countries, support the acceptability and safety of extruded fortified rice.

10. How fast can I expect health effects from consuming fortified rice?

Rice fortification addresses micronutrient deficiency, which occurs when stores in the body have been depleted over a period of months. Consumption of fortified rice not only helps to prevent vitamin and mineral deficiencies, it effectively raises vitamin and mineral levels by moving populations toward consuming recommended dietary allowances for most micronutrients—making it a sustainable strategy.

11. Is fortified rice made in Myanmar?

Yes, using locally grown Pawsan and Emhata rice. Producers are certified by the Myanmar National Nutrition Centre and Food and Drug Administration.

12. Does fortified rice cost more than traditional rice?

The cost of fortification is minimal compared to the sale price of rice, making it available and affordable for all.



Fortified rice is being sold in more and more supermarkets and retail shops across the country. Photo: ZEMMA.

13. Where can I buy fortified rice?

Fortified rice is available in various regions, such as Ayeyarwady, Nay Pyi Taw, Magway, Bago, Mandalay, Sagaing, and Rakhine, as well as in Hlaing Thar Yar and Shwe Pyi Thar townships in Yangon. Supermarkets such as City Mart and Ocean Supercenter, and minimarts, such as Grab & Go, carry fortified rice. As the program to introduce this new healthy alternative to traditional rice grows, fortified rice will be available in more supermarkets and retail shops across Myanmar.

For more information: myanmar@path.org. PATH's work on fortified rice in Myanmar is funded by:



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