

'Ultra Rice' slips nutrients in via one special grain for every 100 ordinary grains of rice

FRIDAY, 29 APRIL 2011 15:00 POST STAFF



ONE interesting idea to address Cambodia's hidden hunger of malnutrition is the development of "Ultra Rice" – special fortified rice grains made from micronutrient-fortified rice flour and mixed in with regular rice.

An NGO called PATH which is now being funded by the Bill and Melinda Gates Foundation and the US Department of Agriculture's National Institute of Food and Agriculture, has a plan to license the Ultra Rice technology to local manufacturers who use equipment similar to that for making pasta – to make grains of Ultra Rice which are then sold to local rice millers who mix one grain of the fortified ultra rice in with every 100 grains of traditional rice.



Youngsters with fortified rice.

The fortified rice that results is meant to be indistinguishable from local rice and is designed to withstand the rigors of storage, rinsing and cooking. Ultra Rice technology is a technique that packs in vitamins and minerals – including vitamin A, zinc, folic acid, thiamin and iron.

For many years, efforts to fortify rice lagged behind those for wheat, salt and oil. Technology advancements, however, are now helping to demonstrate its significant potential and impact, especially for the more than two billion people worldwide who consume rice daily and lack access to a diversified diet, according to a statement from PATH.

In 2009, PATH formed a partnership with the France-based Institute of Research for Development and the United Nations World Food Program to investigate the feasibility of introducing fortified rice in Cambodia. In a June 2010 study conducted in Kampong Speu, fortified rice was provided to 2,000 school children in four schools.

The acceptability of each type was gauged by reactions to smell, appearance and taste. Study results found the fortified rice to be highly acceptable to the school children, their teachers and their mothers. In fact, study participants preferred it to unfortified rice.

More than 30 studies have been conducted with PATH's Ultra Rice technology. The evidence indicates that regular consumption of rice fortified with Ultra Rice grains boosts levels of key micronutrients in women as well as young and school-aged children.

Ultra Rice research in Brazil indicated that it was more effective than iron drops in preventing anemia among six to 24 month old children.

Researchers in India found that death rates among schoolchildren were reduced by regular consumption of rice mixed in with Ultra Rice.

As part of their introduction strategy, PATH is piloting Ultra Rice within government-sponsored lunch programmes in India and Brazil – reaching 250,000 schoolchildren daily.

According to a press release from PATH, they and partners including the World Food Program the France-based IRD desire to “integrate fortified rice into appropriate public sector and retail channels in Cambodia”.

Senior researcher Frank Wieringa, who helped conduct a fortified rice acceptability trial in Kampong Speu last year, said plans are in place to start with 12,000 Cambodian school children and they hope to reach a total of 600,000.

“Costs of supplying them with fortified rice will only be 70 cents per year, much cheaper than any other intervention such as sprinkles,” Wieringa said.

Cambodian mothers regularly feed their babies rice porridge, a traditional food which appears to be healthy, but which is actually quite vacant of the micronutrients required for a developing human being in the critical first 24 months of life.

Worldwide, billions of people suffer from micronutrient malnutrition: a “hidden hunger” resulting from a lack of vitamins and minerals that can increase vulnerabilities to sickness, disease and even death.

These deficiencies, which most people are unaware of, hamper physical and cognitive development and reduce productivity of entire populations.

The World Bank, UNICEF and the WHO rank strategies that improve micronutrient intake as among the most urgently needed and also most cost-effective interventions to improve health.

Cambodia is among the 36 countries with the highest rates of child malnutrition. A recent survey in Cambodia showed that 9 percent of children under the age of 5 years had acute malnutrition. Almost 40 percent of the children were too short for their age – a consequence of stunting, which is strongly linked to malnutrition. Although nationwide data on micronutrient deficiency does not exist, the existing evidence confirming its prevalence is irrefutable. A recent study found anemia in nearly 60 percent of five to 11 year old school children in Kampot province.

Rice fortification, in particular, holds great potential in Cambodia, with per capita consumption at 150 kg/year – one of the highest in the world. In Cambodia, 47 percent of women and 67 percent of children are anemic and an estimated 500,000 children are at risk of zinc deficiency.

Last year Ultra Rice was tested at four schools in Kampong Speu province. Teachers and parents were asked to identify fortified rice out of a choice of three. A total of 1,600 schoolchildren received two weeks of normal rice and four weeks of fortified rice.

The research indicated that most teachers (62 percent) and parents (85 percent) correctly identified the

cooked fortified rice out of a choice of three identical bowls. Normal and fortified rice were scored similarly, on a scale from 1-5, for colour, smell, appearance, stickiness or hardness by teachers and parents.

School children scored fortified rice slightly better than normal rice for taste and smell.

Overall, fortified rice was consumed in similar or larger amounts than normal rice.

The results showed that fortified rice was well accepted by children, parents and teachers and consumption of it was similar or better than normal rice.

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