

# **Nutrition Improvement with Zinc-Rich Rice in Bangladesh**

A H M Masum Billah

Rice is the primary grain in Bangladesh and the country has achieved food self-sufficiency as a result of favorable agricultural policies and incentives provided by the government. Through the development of rice varieties that are enriched with vitamins and minerals, the government is working to improve nutrition for all citizens, particularly for the poor. The government fully supports agricultural research, allowing rice scientists to develop rice varieties that are rich in vitamins and minerals. To celebrate the Golden Jubilee of Bangladesh's Independence and to mark the Mujibujib Centenary, scientists at the Bangladesh Rice Research Institute have released a high-grade zinc-enriched variety, namely, BRRI-100 variety. With this new variety, there are now six varieties of rice that are zinc-rich.

After independence, Father of the Nation Bangabandhu Sheikh Mujibur Rahman called for a green revolution to increase food production in the country. It was in response to his call that scientists at the Bangladesh Rice Research Institute (BRRI) invented the BR3 or Biplab rice variety. The discovery of this variety of rice brought about a real revolution in the country's food production. Later, Bangabandhu nationalized BRRI and institutionalized rice research in the country by passing an act in 1973 in the parliament.

The government of Prime Minister Sheikh Hasina, the privileged daughter of the Father of the Nation, is making outstanding contributions to ensuring the food security of the growing population of this country along the path indicated by Bangabandhu. Bangladesh now ranks third in the world in rice production. Bangladesh has achieved this success despite facing various hostile environments caused by a growing population, diminishing agricultural land and natural resources and the impacts of climate change. In addition to excellence in rice production, it has also achieved third place in vegetable production, and seventh place in potato production. Clearly, this is an outstanding achievement in the history of our nation.

According to the USAID Nutrition Database, per 100 grams of rice we get approximately 129 kcal of energy, 78.09 grams of carbohydrates, 7.12 grams of protein, 0.28 grams of fat, 1.30 grams of fiber, 0.07 milligrams of thiamine, 0.015 milligrams riboflavin, 1.09 milligrams of zinc, 28 milligrams of calcium, 0.80 milligrams Iron, 25 milligrams magnesium and other essential nutrients.

Since zinc is very necessary for the human body, rice researchers in the country have focused on developing rice varieties with high zinc content. Zinc acts as an antioxidant in the body to increase immunity, body growth and immunity. It can also prevent hair loss and boost appetite. Doctors say zinc deficiencies can cause diarrhea and allergies. Zinc is required in the human body for bone formation, wound healing, etc. Therefore, during the corona epidemic, doctors advised people suffering from Covid-19 to consume zinc tablets.

Zinc needs in the country can be met by newly developed variety BRRI-100 rice. It is estimated that 44 percent of children and 57 percent of adult women in Bangladesh suffer from zinc deficiency diseases. Adolescents of growing age are more likely to be deficient in zinc. The daily zinc requirement for adults is 8-12 mg, whereas the requirement for children is 3-5 mg. So, it is possible to meet the body's zinc requirements to a large extent by eating zinc-rich BRRI-100 rice, as this variety contains more zinc than other varieties. Having 25.7 mg of zinc per 100 kg, this can meet a large part of the human body's zinc requirements.

The rice of this modern high-yielding variety is thin and crisp. Yields can reach 6.9-8.8 tons per hectare with this variety. Disease and insect attack on BRRI-100 is much less than on conventional varieties. Meanwhile, zinc-rich rice has been given incentives to encourage its cultivation in the country. It has been announced by the Bangladesh Agricultural Bank that farmers can get a collateral-free loan if they grow nutritious rice that contains zinc in their fields.

There is a possibility of cultivating this type of rice in almost all parts of Bangladesh, according to agricultural researchers. Zinc-rich high-yielding rice varieties have already become popular in different parts of the country. Due to its economic efficiency and high nutritional value, it is a very popular food among farmers and consumers alike. Currently, one-fourth of the country's zinc-rich rice comes from the south.

To ensure food security and nutrition, we should be aware of what we eat. It is necessary to develop a long-term plan in order to accomplish this. The public should be made aware of the benefits of eating rice that contains zinc and other nutrients. It should be ensured that zinc-rich varieties are rapidly expanded among farmers. In conjunction with the relevant government authorities, civil society should come forward. To get these rice seeds to every corner of the country, public-private and commercial initiatives need to be taken. Media outlets in the country should participate actively in creating public opinion on this issue along with the government and private institutions. It is only then that Bangabandhu Sheikh Mujibur Rahman's vision of improving the nutritional level of the people can be realized.

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Writer: Deputy Principal Information Officer

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