

'Zinc-enriched paddy gives better yield, reduces malnutrition'

Our Correspondent

PABNA, Nov 10: Bangladesh Rice Research Institute (BRRI) has developed a second breed of zinc-rich rice which grows faster, gives better yield, and farmers gain profit from its cultivation, said farmer Ehsan Ali of Ghoshpur village under Pabna Sadar upazila.

In collaboration with the International Rice Research Institute (IRRI) and BRRI, Harvest Plus, which is coordinated by the International Centre for Tropical Agriculture (CIAT) and International Food Policy Research Institute (IFPRI), is working to increase the amount of zinc in new varieties of rice and is also helping Bangladeshi farmers to deal with the unpredictable effects of a changing climate.

At the same time, its goal is to further develop and widely disseminate a high-yielding, comparatively disease- and pest-tolerant bio-fortified rice variety that will provide more than 70 per cent of the daily zinc demand to the targeted communities.

BRRI Dhan-72, the second high-zinc Aman variety paddy was developed for two years after the release of the world's first bio-fortified high-yielding variety zinc rice BRRI Dhan-62 in August of 2013.

The newly-released rice breed and seeds will be made available to the farmers for cultivation in the Aman season (June-November) next year.

BRRI Dhan-72 has a yield of 5.7 tonnes per hectare against 4.5 tonnes of BRRI Dhan-62. The latest breed is also nutritionally richer with 22.8 milligrams of zinc in one kilogram which is over 3mg higher than the BRRI Dhan-62.

Bio-fortification is the process of breeding crops to increase their nutritional values. This can be done either through conventional selective breeding or through genetic engineering.

Deputy Director of the Department of Agriculture Extension (DAE) in Pabna Bibhuti Bhushan Sarker said, this is the first time the farmers here have cultivated BRRI Dhan-72 during the cultivation period of Transplanted

Aman (T-Aman) paddy on experimental basis and got profit. They are happy over the production and cultivation cost, he added.

He further said, BRRI Dhan-72 is also a zinc-enriched rice variety released for Aman season while it possesses all the traits of high yielding varieties. Its plant height is about 116 centimetres and the field growth duration is 125-130 days. It has long bold grain.

This variety has 8.9 per cent of protein and 22.8 mg of zinc in per kg of its rice. It gives an

average yield of 5.7 tonnes per hectare but with proper care, the yield can go up to 7.5 tonnes per ha.

Meanwhile, BRRI Dhan-74 is the latest zinc-enriched Boro variety. Its life duration is around 147 days, containing 24.2 mg of zinc in per kg rice. The yield potential of this newly-developed rice variety is 7 to 8.3 tonnes per ha and the plant height is 92cm.

Whereas BR-11 grows in 145 days, it takes 125 days to harvest BRRI Dhan-72 from the day

of sowing the seeds, he said.

The DD also said, "We need different varieties of Aman rice for different cropping patterns in different agro-ecological systems. This variety is developed for the areas where mainly Boro crops like wheat and winter vegetables are cultivated besides Boro and Aman paddies."

The advantages of these newly-developed zinc-enriched rice varieties are that the farmers can produce seeds of these varieties for

their own use while seed companies can take initiative to multiply the seeds and their marketing throughout the country.

The DD further said, "We hope that as a result of these activities, the zinc-enriched bio-fortified rice could cover more vulnerable areas and households in the community to access zinc nutrition."

A farmer here Abdul Awal said, during the Aman season they get 14 to 16 maunds of paddy from per bigha of land, but at present they are getting 20 to 22 maunds cultivating the zinc-enriched rice.

For introducing the rice among the farmers, the Harvest Plus organised a mass gathering in Pabna Sadar upazila recently where DD Bibhuti Bhushan Sarker attended as chief guest and its Additional Deputy Director Khayer Uddin Molla was present as special guest.

The speakers said, zinc is one of the three most vital micronutrients, and its deficiency may adversely affect children's natural growth and immune system. Proper zinc supplementation can reduce the severity of morbidity from a number of common childhood diseases including diarrhoea and pneumonia, they informed.

Though fruits, vegetables and animal products are rich in micronutrients, these are not available very often for the poor in Bangladesh as well as in many other Asian countries where the poor's daily diets include low-zinc rice.

According to the World Health Organisation, nearly half a million children die each year globally due to zinc deficiency. 17 per cent of the global population is at risk of inadequate zinc intake. The regional estimated prevalence of inadequate zinc intake ranges from 7.5 per cent in high-income regions to 30 per cent in South Asia.

They informed that most of the children in Bangladesh are suffering from malnutrition and their intellectual ability is reducing as a result, but the deficiency can be recovered by ensuring the zinc-enriched rice in their menu.



Pabna DAE Deputy Director Bibhuti Bhushan Sarker speaking with farmers at a field of zinc-enriched BRRI Dhan-72 recently. PHOTO: OBSERVER