Assamese rice variety that needs no cooking

India and China account for more than half of the world’s rice production. In India, rice varieties grown in different regions vary with the climatic and soil conditions prevalent there. Often, these varieties are also associated with traditional uses by virtue of being grown in a particular locality for centuries. There are about 200,000 varieties of rice in India, of which 4000 are cultivated. The north-eastern states account for 7.8% of the rice growing area of the country. Assam alone accounts for around 73% of the land under rice cultivation in the North-East.

Some varieties of rice traditionally grown in Assam are referred to as komal sawl, or ‘soft rice’. These rice varieties need no cooking and soaking them in water will render them fit to be eaten. Scientists at the Central Rice Research Institute (CRRI), Cuttack obtained these varieties from Titabar Rice Research Station of the Assam Agricultural University, and have purified them using panicle progeny method.

At CRRI, experiments are being carried out to see if some of the komal sawl varieties can be cultivated outside Assam. To start with, the cultivation of these varieties in the hot and humid climate of Orissa, without compromising on their biophysical and biochemical characteristics, was tried. They have now found that komal sawl varieties, such as Aghonibora, retain their characteristic softness even when grown in places such as Orissa, Bengal, Bihar and coastal Andhra Pradesh. In this respect, they are unlike rice varieties such as basmati that loses its aroma if grown outside its natural habitat.

The komal sawl varieties can be cultivated using the normal agronomic methods, says Tapan K. Adhya, the Director of CRRI. Aghonibora, one of the komal sawl varieties that are being tested at CRRI can be cultivated in about 145 days and its yield is approximately 4.5 tonnes per hectare (which is comparable to that of other high yielding varieties of rice) with a normal dose of 80:40:40 NPK fertilizer.

CRRI is also involved in analysing the nutritional content of these rice varieties. T. K. Adhya says that through complete analysis of the nutritional aspects of the varieties is not yet over, it will probably not be much different from other rice varieties. However, there are some differences in the biochemical composition of these grains which gives them their softness. Aghonibora, for instance, has very low amylose content – about 4.5% (ref. 4) (rice varieties may have amylose content of up to 25–30%). Studies at CRRI have shown that amylose is responsible for hardness of rice grains. While cooking, amylose absorbs water and makes the rice grains expand and become soft. Due to lower amylose content in komal sawl varieties, the process of absorption of water is much easier and mere soaking renders the grains edible.

The potential uses of varieties like Aghonibora are many, since these rice varieties need not be cooked and can be eaten after soaking them in water for 45 min at room temperature or for 15 min in lukewarm water.

In rural India, 54–84% of the total energy used is for cooking. Among the various energy sources used, such as firewood, dung cake and agricultural wastes, firewood constitutes 38–80%. In urban areas too, firewood is the major energy source for low-income households. The particulate matter, carbon monoxide and polycyclic organic compounds that firewood gives out when burnt may be more than that of even coal, which is considered to be the ‘dirtiest of fossil fuels’. Rice varieties like Aghonibora may help to reduce the use of biomass as fuels, and thus reduce the health hazards that particulate matter and gases that these fuels emit pose for their users, mainly the rural populace. It may also ultimately result in the reduction of exploitation of forests for fuel wood. The komal sawl varieties may be useful for extremely marginalized people who cannot afford fuel for cooking and people in regions where fuel is a scarcity. They may be potentially used as food in remote areas, such as the borders, where it is not always possible to cook a meal. The army may also find many applications for these rice varieties. The komal sawl varieties may also have a number of industrial and commercial applications.

Adhya says, ‘To the best of our knowledge, we do not have any reference to such rice varieties but in common parlance (indigenous knowledge). At CRRI, work is currently being done to process and catalogue the complete physical and chemical characteristics of komal sawl varieties for future publication. If all goes well, we might have ‘Nature-made ready-to-eat food’ in a few years’ time.

4. Adhya, T. K., e-mail to V. T. Yadugiri, 3 November 2009.

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