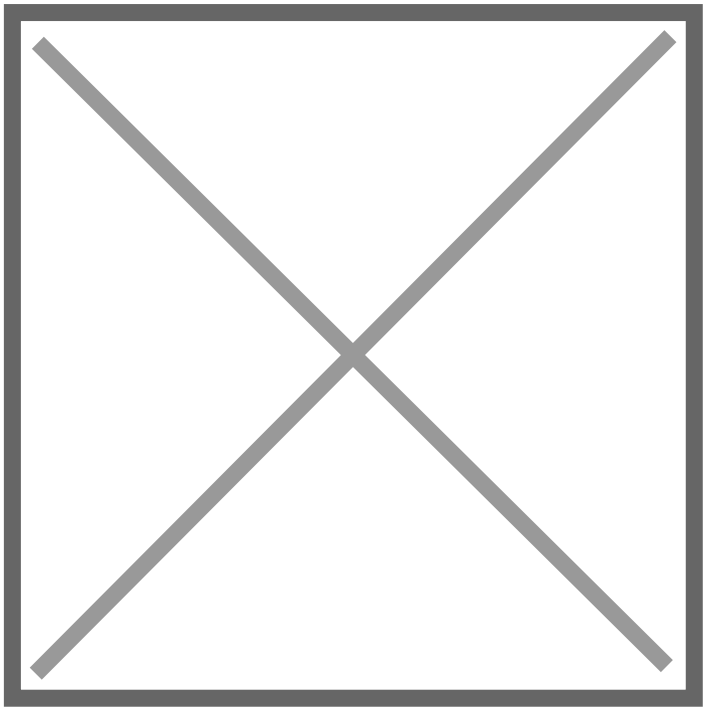
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Bt rice could be launched in India by 2011Ã¢â?¬â??12

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Bt rice could be launched in India by 2011–12

India is developing nutritionally enhanced biotech rice that is high in protein, iron and beta-carotene; using less pesticide that could double the yield and save traditional low yielding varieties from extinction…

According to the ISAAA report, deployment of biotech rice as a crop is seen as an important step to the adoption of biotech crops globally. Rice is the second most consumed cereal grain, after maize, for a large part of the world's population, especially in Asia and tropical Latin America. Bt rice is almost ready for adoption, principally the pest/disease resistant biotech rice extensively field tested in China and awaiting approval of the Chinese regulatory authorities. It has the potential to increase net income by approximately $100 per hectare for the 110 million poor rice households in China, equivalent to 440 million people, based on an average of four per household in the rural areas of China. Golden Rice—or genetically biofortified rice with beta carotene that produces vitamin A is being field-tested at the International Rice Research Institute in Los Baños, Laguna. Its adoption for the Philippines is being done by the Philippine Rice Research Institute with two other traits incorporated in the rice—tungro virus and bacterial blight resistance.

With over 43 million hectares, India has the largest rice acreage in the world and is the second largest producer of rice with production at 96.43 million tones in 2007-08. With India's population estimated to reach 1.3 billion by 2017, the Government of India estimates that we may be short of 14 million metric tonnes of food grains. To meet this huge challenge, Indian scientists are working upon developing biotech enhanced rice that has built-in insect protection, rice with high iron and zinc and golden Indica rice, Xa-21 rice for bacterial blight resistance. Leading institutes like International Rice Research Institute (IRRI), Philippines, and Central Rice Research Institute (CRRI), Cuttack, are conducting research in the areas of disease resistance, weedicide control and nutrition enhancement with beta carotene and iron fortification. After all the required processes and approvals, it is estimated that biotech enhanced rice could be launched in India by 2011 –12.

While commenting on the role played by Bt rice in food security, Dr Swapan Datta, professor, University of Calcutta said, "Plant biotechnology has the potential to enhance productivity of crops, including rice while addressing the problems of rising food needs. Biotech enhanced rice could double the yields of crops and can save traditional low yielding varieties from extinction by converting taller varieties into shorter heights with multiple tillers resulting in higher yields. Biotech rice and new generation rice tolerant to drought, salinity and cold will provide better adaptation to challenge the threat of global climate change."

Dr GJN Rao, head, plant improvement, CRRI, Cuttack, Orissa said, "Biotech rice has a clear advantage. It can address many of the production constraints in India, enhance productivity and help protect the environment by reducing the use of chemical pesticides. Since India is also home to the world's largest number of malnourished people, most of whom are women and children, CRRI is working on developing nutritionally enhanced rice for high protein and high-iron. Using conventional means and transgenic approach, we are developing rice varieties for incorporating resistance to diseases and insects and abiotic stresses like drought."

Recently, an agreement was signed between Indian Council of Agricultural Research (ICAR) and IRRI to support and facilitate India's rice research for the next three years, helping the nation's rice production at a time of new challenges such as global climate change, increased cost of production, value addition and the revitalization of food production.

In addition to CRRI Cuttack, some of the Indian Institutes that are conducting research on biotech rice include University of Calcutta, Bose Institute, Directorate of Rice Research, National Research Center on Plant Biotechnology, University of Delhi, Tamil Nadu Agriculture University, Madurai Kamaraj Unviersity, Osmania University and MS Swaminathan Research Foundation, Chennai.