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PRODUCTION OF LOW COST NUTRIENTS FROM RICE BRAN

Rajiv Arora

Shaheed Bhagat Singh State Technical Campus, India
Bhagwati Lacto Vegetarian Exports (P) Limited, India



As people get more and more health conscious day by day, there is a tendency to include a variety of super foods to their daily diet. These super foods, such as flax seeds, asparagus and grapefruit, among many others have become very popular over the years due to their nutritional values as well as health benefits. Rice bran can be another future super food as rice bran contains a variety of bioactive components with chemopreventive activity including -oryzanol, ferulic acid, caffeic acid, tricin, coumaric acid, phytic acid, the vitamin E isoforms α -tocopherol, -tocopherol and various tocotrienols, phytosterols such as β -sitosterol, stigmasterol and campesterol and carotenoids such as α -carotene, β -carotene, lutein and lycopene. Rice bran also contains cellulose, hemicellulose, pectin, arabinoxylan, lignin and β -glucan, micronutrients such as calcium, magnesium, nine B vitamins and essential amino acids such as tryptophan, histidine, cysteine and arginine. It has been found that the dietary rice bran may exert beneficial effects against several types of cancer also, such as breast, lung, liver and colorectal cancer. The chemo preventive potential has been related to the bioactive phytochemicals present in the rice bran. Studies have shown that the anticancer effects of the rice bran derived bioactive components are mediated through their ability to induce apoptosis, inhibit cell proliferation and alter cell cycle progression in malignant cells. Rice bran is one of the most wasted nutritional resource in the world with an estimated 60

million tonnes used away each year as animal feed ingredient, but the highly nutritious rice bran could be a new super food. Also, its hydrolysate form has the potential to be applied in nutraceutical products. Moreover, the global availability, accessibility and affordability of dietary rice bran offer unique public health opportunities in both developed and developing countries.

Biography

Rajiv Arora is working as Head of the Chemical Engineering Department of Shaheed Bhagat Singh State Technical Campus, Ferozepur, India. He has done his PhD in the field of Biofuels from Panjab University, Chandigarh, India. He has 17 years of teaching experience and five years of industrial experience. His research areas include biofuels from waste biomass, heterogeneous catalysis, extraction of oils/nutrients and byproducts from biomass, environmental engineering and photo catalytic degradation. He has applied for three patents and published more than 25 research papers. He is the Chairman and Member of the Board of Studies in Chemical Engineering of many universities in India. He provides consultancy to many edible oil industries regarding the process intensification, extraction of valuable nutrients and optimization. He is the recipient of numerous national awards and financial grants for his research work in the field of biofuels and extraction of nutrients. Recently, his innovation "Low Cost Nutrients from Rice Bran" has been placed among the top ten innovations of 2017 by "Millennium Alliance" in India.

rajiv_fzr@yahoo.com