

## The Tale of Forbidden Rice

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**ARTICLE ID: 051**

### **PROLOGUE:**

The Forbidden rice is popularly known as purple rice, heaven rice, imperial rice, king's rice and prized rice or the black rice. Rice serves as the staple food for most of the people around the world. Recently black rice (*Zizania aquatica*) is getting more popular and is being consumed as functional food due to the usefulness to health. It is a rice variety formed by the mutation of *Kala4* gene. Around the world it is mainly cultivated in Southeast Asian countries like China, Thailand and India. China accounts for 62% of black rice production in the world followed by Sri Lanka, India, Indonesia and Philippines. In India it is grown in North-eastern states like Manipur, Mizoram, Meghalaya, Assam and some parts of Odisha. The color black is due to the presence of the anthocyanin pigment on the outer layers (bran) of the rice kernel.

### **CHRONICLE OF BLACK RICE**

It was initially grown in China before the Chinese dynastic period and was called as the 'luck rice'. It was considered to be 'dirty' because of the color black. Later it was found that the color of the grain is determined by the accumulation of colored pigments. Initially black rice was reserved only for the kings of China and Indonesia due to its high price and enormous medicinal properties to cure various illness, but now it is available for one and all.

### **DISTINCT VARIETIES OF BLACK RICE**

Black Japonica Rice which has an earthy flavour with a mild sweet spiciness Black Glutinous Rice also known as the 'Black Sticky Rice' has a short grain size and has a sticky texture. The grains are unevenly colored and generally used to make sweet dishes in Asia. Italian Black Rice has long rice grains and has with a rich buttery tempting aroma. Thai Black Jasmine Rice has medium grain size, it is native to Thailand and has a subtle floral aroma.

### **Nutrional benefits of black rice**

Black rice has high levels of protein, fiber, vitamins (Vitamin B1, Vitamin B2, folic acid) and minerals (iron, zinc, calcium, phosphorous and selenium) compared to that of white rice. The essential amino acids present in black rice are lysine and tryptophan. It even possesses antioxidant activity, anti-inflammatory properties, lipid oxidation, anti-diabetic, anti-ageing and anti-cancer effects. Regarded as therapeutic agent it is capable of curing and preventing chronic diseases associated with inflammation. High fiber content of black rice helps in weight management. Consuming black rice it gives a feeling of fullness and the person does not feel hungry and also decreases the fatty acid synthesis thus resulting in intercellular lipid accumulation in between the tissues it also aids in detoxification. Since it prevents the accumulation of LDL on the heart valves it keeps the heart healthy. Anthocyanins protect the body from damage of free radicals which can prevent cancer, anthocyanins extracted from black rice revealed that these have the potential to prevent the formation of tumors. The naturally low content of sugar and high fiber content in black rice prevents the occurrence of diabetes. As black rice contains twice the amount of fibers than brown rice it eases the bowel movement and even cures chronic constipation. The fibers also bind with toxic compounds in the colon and are easily flushed out along with the feces. Black rice is rich in iron which increases the haemoglobin content and prevents anemia.

### **WRAP-UP**

Black rice is a variety of rice having numerous health benefits. The main pigment of black rice “anthocyanin” has gained attraction among the researchers due to its high antioxidant activity, health benefits and natural coloring properties for use in other food applications. Being a rich source of tocopherols (vitamin E), iron, antioxidants and the overall nutritional profile of black rice has made it a “Super Food”. Consumption of black rice by individuals has proved to be beneficial and helpful in reducing the risk of developing cardiovascular diseases, diabetes and obesity. There is a dire necessity to include black rice as a novel ingredient in food processing to explore its complete benefits.