

Colorful Diet- Different Colored Rice

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Abstract:- Rice is considered as one of the most vital staple in the Indian diet as it is a food for instant energy that is rich in carbohydrates. According to the origin of rice in India, it was initially cited in Yajur Veda (c. 1500-800 BC), and produces around 2, 00,000 varieties in the present day. Diverse rice types are based on the geographical characteristics, cooking styles, and other features based on shape, size, aroma, texture, color and so on. In this review, we shall have a brief description of the types of rice based on the color variants and their nutritional values with benefits they have for a healthy diet.

Keywords:- Rice, Types, Origin, Components, Benefits.

I. INTRODUCTION

Rice, one of the essential staple meals, is consumed across the world by more than half of the total population. Rice is produced and milled globally, but predominant percent of overall rice produced is eaten up inside the countries in which it is grown.

However, developing demand in a few regions is driving the Worldwide rice trade among the areas. Maximum of the rice is consumed and produced in Asian continent that includes countries like India, Pakistan and Thailand that accounts for approximately 90% of global rice production.

Depending upon the crop cultivation varieties, rice is divided into the two immense classes of brown and white. Brown rice is a type of whole grain, with solely the uneatable hull of the seed removed, whereas white rice (polished or milled) has the grain extract through the process of milling. Polished rice might not essentially be white colored but perhaps also available in different colors of black/purple, red variants, that could be consumed as whole grain or polished variant. The kind of rice also varies from one another in its grain appearance, size, smell, shape, and sticky characteristic.

II. TYPES OF RICE

A. White Rice

For many Asian nations, white rice is a major food, serving as a principal food source for over half the globe's populace. The polished white rice has the husk, grain and germ layers removed, so simply the white inner kernel is left. Removing the peripheral layers takes off most of the dietary benefit, for which supplements are added to regain

the nutritional significance. Thus, white rice has less dietary benefits than brown rice.

➤ Rice Origin

Oryza sativa was cultivated from the wild grass *Oryza rufipogon* about 10,000– 14,000 years back. The principle subspecies of rice include- indica (common in tropical areas), japonica (pervasive in the subtropical and mild locales of East Asia) and *O. glaberrima* (cultivated much later in West Africa).

Genetic data illustrates that all types of Asian rice, both indica and japonica, are originated from a cultivating event that happened around 8,200– 13,500 years ago in the Pearl River valley locale of China.

Movement to western India and south to Sri Lanka was likewise cultivated early. Rice was a noteworthy yield in Sri Lanka as ahead of 1000 B.C. The yield may well have been acquainted with Greece and the neighboring zones of the Mediterranean by returning individuals from Alexander the Great's endeavor to India around 344-324 B.C. From a middle in Greece and Sicily, rice spread step by step all through southern Europe and to a couple of areas in northern Africa. European colonizers introduced the rice farming to the new world. The Portuguese familiarized it to the Brazil, while Spanish passed on to the Central and South America.

➤ Components

White rice comprises nearly 90 percent carbohydrate, 8 percent protein and 2 percent fat. It is a source of phosphorus, iron, manganese, magnesium, selenium, folic acid, niacin and thiamine. It has little fiber and its fat substance is basically omega-6 unsaturated fats, which are considered pro-inflammatory.

➤ Health Benefits

- Good energy source
- Anticipates constipation
- Has an Immense Nutritional Value
- Controls Disease's Occurrence
- Cancer Prevention
- Regulates Blood Pressure
- Helps in healthy weight gain
- Gluten-free Food

B. Brown Rice

Brown colored rice is the most common type of rice as it has the external bran layer. The bran layer is loaded with fiber and different supplements and has an exquisite

nutty flavor and chewier surface that makes the dark colored rice so appealing. This type of rice is unfinished, unrefined whole grain that is processed by expelling the enclosed husk of the rice kernel. Its grain holds the embryonic layer and nutrient-rich bran layer. Like polished rice it is chewier and comprises a nutty zing.

➤ *Rice Origin*

The crude rice seeds and early farm tools have been disclosed by the archeologists around 8,000 years back in China. The Middle East traders familiarized rice to Greece, and Alexander the Great conveyed it to India. In the eighth century, Moors acquired rice to Spain, and the Spanish brought it to South America in the seventeenth century.

➤ *Components*

Brown rice is a distinctive healthy food with ample vital minerals like, iron, manganese, calcium, magnesium, zinc, selenium, phosphorus and potassium. Its nutrient riches add in vitamin B1, vitamin B2, vitamin B3, vitamin B6, folate, Vitamin E and vitamin K. It is a good protein source and includes a good measure of fiber to our dietary regime. In addition to the above, it is also a supplier of health-supportive essential fatty acids.

➤ *Health Benefits*

- Helps in Controlling Diabetes
- Anticipates Obesity
- Arrests Alzheimer's
- Brings down Stress in Lactating Women
- Enhances Digestion
- Lifts Heart Health
- Controls Cholesterol Levels
- Anticipates Cancer
- Lifts Nervous System Functioning
- Anti-depressant Properties
- Assuages Insomnia
- Lifts Immunity
- Enhances Bone Health

C. *Purple Rice*

Purple rice, also called as black rice or forbidden rice is known for the purple shade attained from the external layer of the dark black fiber. This rice gets the purple shading simply subsequent to cooking and is rich in nourishment and contains different amino acids, vitamins, zinc, copper, and more. In various parts of the world, this purple rice usage is focused for its dietary value, taste and advantages of different medical issues.

Purple rice is also termed as the hematopoietic rice and is utilized in therapeutic herb cooking. As indicated by the conventional qualities, it impacts on the recuperation of different illnesses of individuals with chronic sicknesses. The shades of the purple rice embrace the anti-oxidation impacts, are useful for maintaining a strategic distance from cancer-causing agents and aging, advances the enhancement of asthenopia. Besides the utilization as rice, it is used as a material for liquor and vinegar and in the concoction of bread and noodles. It is generally used in

dessert formulas, used in enticing tempting dishes as it has a sweet profile.

➤ *Rice Origin*

The sticky purple rice originally grows in Asian nations of China, Indonesia, Thailand and Philippines, but however is available across the globe. It is also referred to as the Chinese black rice and is standard among the vegans. This rice is an inherited type grown considerably in ancient times when compared to modern day.

➤ *Components*

Distinctive components are present in this type of rice that is not there in other varieties. They comprises of anthocyanine, glycosides like chrysin.

➤ *Health Benefits*

- Cooked purple rice or black rice is sticky in nature and is sweet.
- Has various nutrients like the carbohydrates that give energy to the body and facilitates the correct functioning of the nervous system
- The fiber and iron content assures the adequate oxygen needed within the body by manufacturing the specified number of red blood cells.
- The minerals within the rice aids to curb blood pressure.
- High caloric food
- Best weight loss diet
- Dietary supplement for diabetics, skin care
- Eases allergies
- Important food to treat cancer
- Necessary supplement for folks with anemia.

D. *Red Rice*

Rice with a red bran layer is referred to as red rice. Although the colour is confined to the bran layer, a tinge of red remains even after a high degree of milling. The bran color varies from light to dark red. The bran layer contains polyphenols and anthocyanin, and possesses inhibitor properties. The internal portion of red and white rice's is similar and white. According to Ramaiah and Rao, 1953, the iron and Zinc content of red rice is 2–3 times more than that of white rice, and according to American scientists high iron content is stated within the Chinese red varieties 'Bloody Sticky' and 'Dragon Eyeball'.

➤ *Rice Origin*

The original source of red colour rice is set up within the Taittiriya Vedic literature of the Yajurveda. Throughout this era, rice is considered as a vital part of the ceremonial ritual of offering to God. Red rice is initially mentioned in the Buddhist scripture that is dated back to the rule of the Greek king who dominated the region of Northwest India within the first century before Christ. The use of red, black and wild nivara rice varieties was referred in the Agni Purana (900 AD) and the Vishnu Purana (200 AD).

➤ *Components*

Red rice is very similar to the variety of brown rice in terms of nutritional values. It also is a source for fibre, vitamins, calcium, iron, zinc, magnesium, manganese and other nutrients. It is also augmented with antioxidants that help fight destroying the free radicals in our body. The color is also attained from the antioxidant, anthocyanin that is also found in red or purple colored vegetables and fruits.

➤ *Health Benefits*

- Red rice’s are considered highly nutritive
- It is preferred for making bread and chapattis and other dishes.
- Used for preparing vinegar, tart, cosmetics
- Used for curing blood pressure and fever
- For treating upset stomach, indigestion
- Improves blood circulation
- Used for bruised muscles, and hangovers
- It is a cholesterol-lowering product.
- For treating leucorrhoea

- For abortion related complications.

E. Golden Rice

New colored rice that is in development, however not ready with the farmers or traders, is Golden Rice. Golden Rice is yellow or golden in color as it comprises beta carotene – vitamin A source, to boost its nutritional content. It is colorful and appears golden even after it is polished, unlike the other colored rice’s. This type of rice is developed by the European scientists in the end of the 1990s in the developing countries to counter the deficiency of Vitamin A.

Golden rice is a genetically altered, bio fortified crop. The nutritional value in crops is increased due to bio-fortification. Golden rice is genetically changed so as to yield beta carotene that is not usually formed in rice. Beta carotene is transformed into Vitamin A once metabolized by the human body. Vitamin A is required for good skin, immune systems, and vision.

Nutritional Proximity (per 50 gms)	White rice	Brown rice	Red rice	Purple rice
Energy (kcal)	182	184	202.5	186
Protein (g)	3.1	3.77	3.5	5.82
Carbohydrate (g)	39.98	38.12	43.35	39.53
Fiber (g)	0.7	1.8	1.35	2.4
Sugars (g)	0.06	0.33	0	1.17
Iron (mg)	2.15	0.65	2.75	0.88

Table 1:- Nutritional Proximity for different rice varieties

In general, the nutritional value varies on different factors like the type of rice, the soil in which it is grown, the polishing status of the rice and the preparation method for consumption.

III. CONCLUSION

By the radical escalation of the changes in the lifestyle, health issues- including diabetes, cardiac concerns, etc., are a major concern in everyone’s life. Though white rice variety is the frequently used type for consumption, varieties of red and purple rice types are in increasing demand as they have the higher quantities of nutrients when compared to white rice type. Thus, the colored diet is attracting the populace because of its health benefits.

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