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## Cookies with Black Rice and Sweet Potato

\*R.K. Abitha Devi, S. Akshitha, S. Bhavani, M.A. Bhuvaneswari and P. Papitha

School of Agriculture and Animal Sciences, Gandhigram Rural Institute,

Dindigul, Tamil Nadu, India

\*Corresponding Author's email: [abitha19703@gmail.com](mailto:abitha19703@gmail.com)

Nutritional food is essential for maintaining optimal health at the individual level. A well-balanced diet supports proper growth, development and overall functioning of the body. A nutritious diet plays a crucial role in preventing various health conditions, including malnutrition, vitamin deficiencies, obesity, heart diseases, diabetes and other diet-related illnesses. Black rice, a low fat traditional, pigmented variety of rice constituting a very high anthocyanin content. Apart from containing the pigmented, anthocyanin, it also contains minerals like iron, calcium, selenium, zinc, vitamin B complex, Vitamin E, proteins and fibres. Thus it has potential effect on inflammation reduction, several types of cancer prevention, detoxification, boosting cardiological health by maintaining balance between LDL and HDL content in the body. Sweet potatoes are a nutritious food, low in fat and protein, but rich in carbohydrates. Tubers and leaves are good sources of antioxidants, fibre, zinc, potassium, sodium, manganese, calcium, magnesium, iron and vitamin C. Hence, the preparation and commercialization of black rice and sweet potato cookies were attempted. The recipe for the cookies at different ratios were done and optimized and the nutritional composition of the cookie was determined.

### Health benefits

Black rice and sweet potato are two nutritious ingredients that are rich in antioxidants, Fiber and vitamins. This research on cookies made with black rice and sweet potato has focused on developing gluten-free cookies, improving nutritional quality and creating low-calorie cookies. Celiac disease (CD) is a syndrome characterized by damage to the mucosa of the small intestine caused by ingestion of certain wheat proteins and related proteins in rye and barley. Wheat is the main ingredient in many foods, such as breads, breakfast cereals, crackers, pastas, pretzels and cookies. Avoiding wheat is probably the biggest challenge for people with CD. The effective treatment of CD includes a lifelong gluten-free diet. Therefore, providing CD patients with a variety of nutritious and healthy products is important. However, it is a challenge to manufacture bakery products without wheat, since gluten is responsible for the visco-elastic properties and cohesive dough formation. Cookies are important baked products that are considered to be the most desirable products for all ages due to their low manufacturing cost, long shelf-life, convenience and good eating quality. Also, cookies could be used as a vehicle to deliver essential nutrients to CD patients who require an increase in their daily recommendation of nutrients due to intestinal damage.

### Preparation of black rice and sweet potato cookies

The Black rice and Sweet potato was collected. Black rice was roasted and pulverised. On the other hand, Sweet potato was cleaned, peeled, sliced, dried and pulverised. Both the Black rice and Sweet potato flour was mixed together. The fat and butter were mixed well separately. Jaggery was also mixed well in it. Then the milk powder, vanilla powder and

cardamom powder were mixed in it. The both flour were added and the dough is kneaded well. The dough is then cut into preferred shapes and baked.



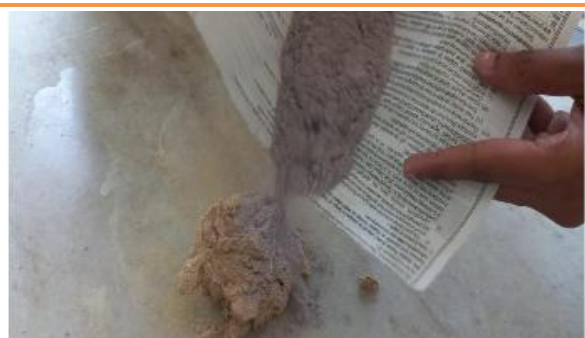
Sweet potato was dried in hot air oven



Black rice flour



Mixing fat and butter well and addition of jaggery



Addition of Black rice flour



Addition of sweet potato flour



Sweet potato &amp; Sweet potato cookies

### Storage

The black rice and sweet potato cookies were prepared and packed well in the plastic container. thus, The Black rice and Sweet potato cookies were stored for 15 days without adding any preservatives at room temperature in an air tight container.

### Conclusion

The Black rice contains a high number of anthocyanins, which are powerful antioxidants that have been shown to have anti-inflammatory and anti-cancer properties. Sweet potato has high antioxidants, anti-inflammatory and anti-cancer properties which helps to protect against cell damage and reduce the risk of chronic diseases, inflammation, cancer and improve symptoms of conditions such as arthritis and asthma. The black rice cookies made by equal proportion of black rice and sweet potato powder without refined wheat flour and white sugar and then baked. Additionally, it has gained popularity for its potential health benefits. The formulation of black rice and sweet potato cookies stands out as a successful attempt to create a nutritious, health-oriented bakery product by utilizing locally available, underexploited ingredients. The most important thing of these cookies is that no maida was used in the preparation. Instead, black rice flour and sweet potato flour were combined to enhance both the nutritional value and sensory properties of the cookies.



This cookie holds promise for promoting healthier snacking alternatives while also adding value to indigenous crops like black rice and sweet potato. These cookies offer a rich source of dietary fiber, antioxidants, and complex carbohydrates contributing to better digestion, sustained energy and potential health benefits such as glycemic control. The natural pigments in black rice also provide added appeal and functional health benefits due to their anthocyanin contents. The cookies achieved a good balance in terms of taste, texture and appearance, making them not only a healthier option but also one that could be well-received by a wide range of consumers. It also emphasizes the importance of promoting traditional crops through innovative product development.

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