

Wonder Foods: Quinoa and Chia

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ABSTRACT

Quinoa and Chia considered as traditional crops are emerging as 'functional foods'. Widely known for the super nutritional value it can be a boon to farmers benefitting healthy revenues in future. Efforts should be made to improve existing technology and innovate newer technologies to develop various value added products, to benefit farmers to get the most appropriate price for their selling and will help curb malnutrition, food insecurity due to increasing urbanization. Through value addition variety of food products with better flavour, nutritional quality can be made like porridge, khichri, in salad dressings, yogurt, desserts, and baked products especially cookies, crackers, cakes and breads are gaining wide popularity in both urban and semi-urban areas.

Key words: *Quinoa, Chia, Cookies, Crackers, Cakes, Breads*

INTRODUCTION

In a country like India with a high rate of malnutrition, and increasing urbanization these crops will help curb food insecurity by Food fortification, Supplementation and Dietary diversification.

Quinoa and Chia considered as traditional crops are emerging as 'functional foods'. Due to busy lifestyle of people the demand for packed and nutritious foods is increasing. Widely known for the super nutritional value it can be a boon to farmers benefitting healthy revenues in future. Efforts should be made to improve existing technology and innovate newer technologies to develop various value added products, to benefit farmers to get the most appropriate price for their selling and attention of consumers for nutrient dense and wholesome foods.

Quinoa (*Chenopodium quinoa*) is a crop which flourishes in harsh conditions such as salty and low quality soil, high elevations and cool temperatures, where common cereal crops like wheat and rice may struggle. It is considered as underutilized. It has a nutty flavour, and can be used the same way as rice and wheat. Quinoa contains more protein than any other grain as compared to rice, wheat and millet, making it an excellent choice for vegetarians. Also it is considered less acidic than other grains. It has a very good balance of amino acids, which is unusual for major grains. It is gluten free and that is why beneficial for celiac patients and high-protein substitute for rice. It can be cooked and served on its own, put in soups, turned into pasta, eaten as cereal or may be as pseudo-cereal.

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The major problem with quinoa is the presence of saponin, a toxic and bitter chemical present in its seeds has been one of the impediments to extensive cultivation. Technical knowledge or breeding of quinoa will help remove its bitterness due to presence of saponins and by applying various processing methods, making its seeds sweeter. Currently it has been processed through washing and drying after harvest to remove saponins from grain.

Increasing quinoa production could improve food security with unrelenting population growth. It is a great choice for hypoglycaemic, diabetic or on a low glycemic diet to loose weight because of its low glycemic index.

While chia seeds (*Salvia hispanica*) are a good source of Omega-3 fatty Acids, protein, dietary fibre aiding peristaltic action, detoxification of the body, and good source for minerals like calcium, niacin, phosphorus, potassium, zinc and copper and contain significant concentrations of antioxidants such as chlorogenic acid, caffeic acid, myricetin, quercetin and kaempferol. It is an excellent source of antioxidants, free from deterioration and can be stored longer resulting in increased bioavailability of minerals and increase in vitamin synthesis. It contains high proportions of the essential fatty acid α -linolenic (18:3 n-3), which is associated with certain physiological functions.

It can be used as whole, milled or grounded. Both overweight and obesity are associated with diabetes, high blood pressure, high cholesterol level, asthma, arthritis and premature coronary heart disease. Eating unhealthy food, physical inactivity is important factors that lead to obesity. Whole grains, legumes, fruits and vegetables are diets that promote healthy life style due to their nutritional content. Chia seeds are hydrophilic in nature, have high dietary fibre and

polyunsaturated fatty acids (PUFA), which may be effective in regulating body weight. A principal feature of the seed is that when placed in an aqueous medium, forming gelatinous mucilage that surrounds the seed, promoting weight loss and reducing obesity. Chia seeds have a mucilaginous texture, therefore it is often used as a substitute for eggs in baking, as an emulsifier and as a functional ingredient used as thickener in foods.

Through value addition variety of food products with better flavour, nutritional quality can be made like porridge, khichri, in salad dressings, yogurt, desserts, and baked products especially cookies, crackers, cakes and breads are gaining wide popularity in both urban and semi-urban areas.

Realizing the importance of these emerging crops and to meet the increasing demands of popularity of these crops, the scientists at Agricultural University, Mandore have obtained good crops under the supervision of Honorable Vice-Chancellor Dr. Balraj Singh Ji and are encouraging the farmers to produce more of these crop in adequate quantity in the arid region, as it can withstand drought and its ability to grow in dry and alkaline soils of Rajasthan to meet the growing demand.

Looking at today's modern lifestyle, the raw material for chia and quinoa was procured from Agriculture University, Mandore and nutritional rich products have been tried to make sweet cookies and salted crackers. The sensory test of baked products was performed for evaluating taste, texture, flavour and overall acceptability from members of Agriculture University, Jodhpur and it was found that these products are highly nutritious as well as delicious in comparison to the cookies and crackers available in the market both qualitatively and quantitatively.



**SALTY CRACKERS
(QUINOA)**



**SWEET COOKIES
(QUINOA & CHIA)**