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Studies on preparation of fasting biscuits

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Abstract

Biscuit is a term used for a variety of primarily flour-based baked food products. Usually biscuits are made by refined flour or wheat flour. Due to the growing health awareness among consumers and increasing demand for healthy food product the study was done to deal with the formulation of biscuits using *Amaranthus paniculatus* commonly known as Rajgira, an important food in Indian fasting rituals. The health benefits attributes decreasing cholesterol levels, stimulating the immune system, exerting an antitumor activity, reducing blood glucose levels and improving conditions of hypertension and anemia. It is a good source of calcium, protein and amino acids and is rich in iron, magnesium, vitamins A, B and C too. Vitamin C helps in reducing the risk of osteoporosis and risk of cancer and also helps in migraine. It also helps in reducing blood cholesterol level.

Keywords: Fasting biscuit, rajgira

Introduction

Biscuits may be regarded as a form of confectionery dried to very low moisture content. According to Fayemi (1981) ^[1], biscuit are small baked product principally made from flour, sugar and fat and moisture is less than 4%. The innovation involves use of rajgira flour and coconut powder. *Rajgira* is also known as Ramdana & Amaranth. Its botanical name is *Amaranthus paniculatus* and it belongs to family Amaranthaceae ^[2]. The most useful part of rajgira is seed but other parts are also edible like leaves. Due to advance technique now it is available in the form of flour & grain. It is frequently used as source of fasting food in India and is also used as food in South America. Amaranth is not a “true cereal” such as wheat, corn, or barley, but it is rather considered a “pseudocereal” like buckwheat. Grain amaranth has several attractive features like gluten-free, high-quality protein, and the presence of abundant quantities of fiber and minerals such as calcium and iron makes it more important ^[3]. Amaranth grain/ flour is a good source of vitamin A, vitamin C, and folate ^[1] they are also a complementing source of other vitamins such as thiamine, niacin, and riboflavin. *Amaranthus paniculatus* is said to be the world’s most nutritious plant. It is best for eye related problems, hairs and improves overall health. It is used for stomach problems especially constipation ^[4]. And also have other health benefits, such as hypercholesterolemic activity, decreasing plasma cholesterol levels, stimulating the immune system, antitumor activity, reducing blood glucose levels, improving conditions of hypertension and anemia effect on liver functions, antioxidant activity, celiac disease and antiallergic action ^[5]. Most grains like barley are short on lysine, an amino acid. The amaranth grain contains lysine ^[6]. Hence; amaranth grain contains a complete protein as all the essential amino acids are present.

Cocos nucifera (Arecaceae) is commonly called as “coconut” and the only species of the genus *Cocos* ^[7]. It is the most naturally widespread fruit plant on Earth. Coconut is the most important versatile crop, which provides all required amenities for human life. The coconut provides a nutritious source of meat, juice, milk, and oil ^[8]. Coconut The spelling cocoanut is an archaic form of the word ^[9]. It is a drupe fruit not a nut. Coconuts are known for their versatility ranging from food to cosmetics ^[10]. The coconut also has cultural and religious significance in certain societies, particularly in India, where it is used in Hindu rituals ^[11]. Coconut is rich in fiber, vitamins, and minerals ^[12]. And is naturally low in digestible carbohydrate, contains no gluten, is cheaper than most other nut flours, is loaded with health promoting fiber and important nutrients, and tastes terrific ^[12]. High fiber content in cereal flour can play an important role in intake of dietary fiber. Coconut dietary fiber is particularly important as it reported to produce high amount of butyric acid in stomach, which helps in inhibiting tumor formation ^[13].

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Material and Methods

Acquirement of Raw Materials

Raw material was collected from local market of Gwalior for preparation of gul-kesh bishikiti. Raw material used- Rajgira flour, Coconut flour, Milk powder, Baking powder, Sugar and Butter. Good quality materials were collected.

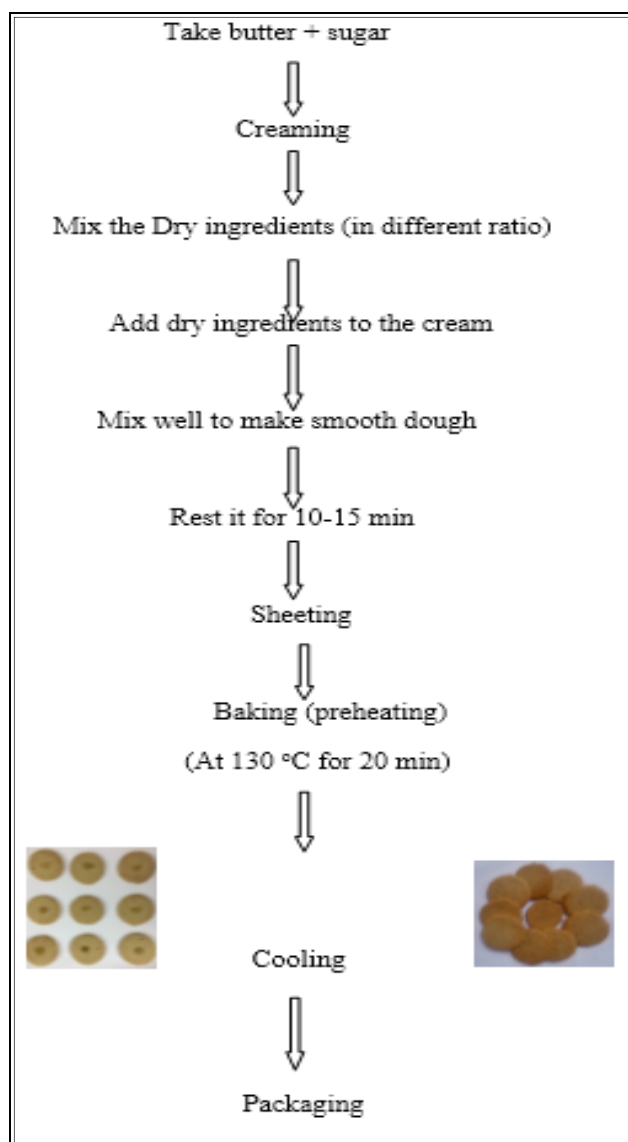


Fig 1: Preparation Method

Sensory Evaluation

Sensory evaluation of Gul-kesh bishikiti was done by hedonic scale where evaluation is done on the basis of nine marks given to sensory evaluation of the product, which have different type of attribute like Color, Flavor, Aroma, Texture, Mouth feel, after taste, Overall acceptability. And evaluated by untrained & semi trained panelist in diabetes camp in Jiwaji University in Gwalior.

Various trials were performed out of which data of few of the finalized trials are shown-

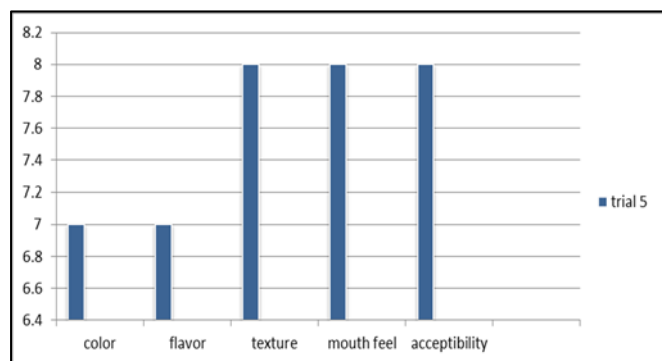


Fig 2: Graphical representation of Trial 5

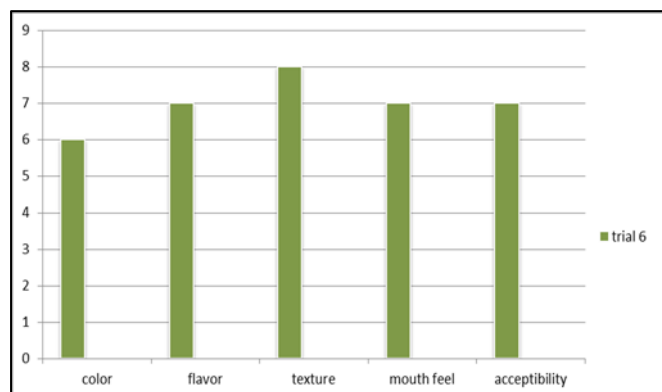


Fig 3: Graphical representation of Trial 6

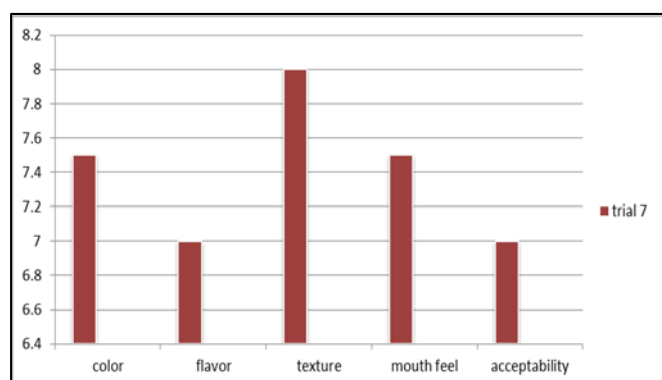


Fig 4: Graphical representation of Trial 7

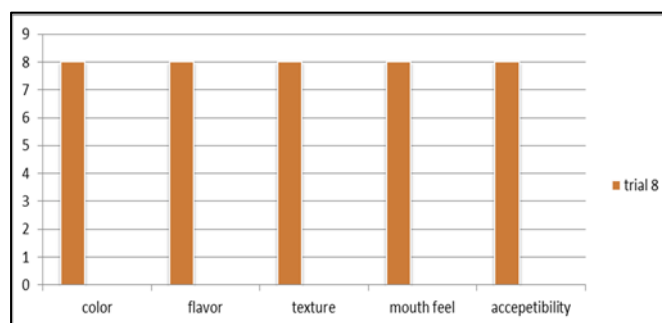


Fig 5: Graphical representation of Trial 8

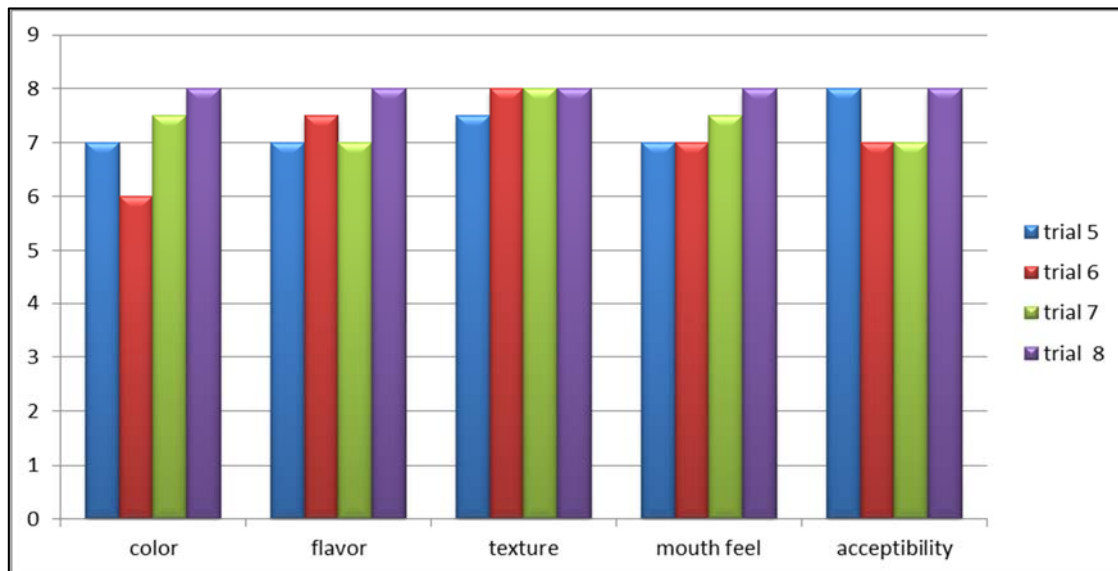


Fig 6: Combine representation of best trials

Table 1: Nutritional value

Trial	Protein (gm)	Fat (gm)	Carbohydrate (gm)	Calcium (mg)	Phosphorus (mg)	Iron (mg)	Energy (kcal)
Trial 1	4.368	18.88	27.362	321.2	31.2	9.818	294
Trial 2	4.25	18.86	27.19	310.6	30	9.45	292.66
Trial 3	4.25	23.12	27.57	319.72	30	9.23	333.52
Trial 4	5.112	18.964	34.658	263.36	66.6	8.198	326.88
Trial 5	5.312	18.992	37.09	244.08	78.4	7.658	337.84
Trial 6	3.655	18.98	34.105	241.72	21	6.65	340.82
Trial 7	4.6	25.26	28.55	306.72	45	8.17	357.12
Trial 8	4.69	31.39	29.53	293.72	60	7.11	416.58

Result and Discussion

Many trials were formulated on the basis of sensory attributes and nutritional requirement out of which trial 8th is the best trial compared to 5th, 6th, 7th. It was proven best on both the parameters i.e. the sensory and nutritional parameter as above. This innovation mainly focused on goodness of Rajgira flour.

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