www.ThePharmaJournal.com

The Pharma Innovation

ISSN (E): 2277- 7695
ISSN (P): 2349-8242
NAAS Rating: 5.03
TPI 2019; 8(5): 526-530

www.thepharmajournal.com
Received: 18-03-2019
Accepted: 22-04-2019

Shubuhi Malik
Department of Food Technology, UCALS, Uttaranchal University, Arcadia Grant, Chandanwari, Premnagar, Dehradun, Uttarakhand, India

Tayyaba Khanam
Department of Food Technology, UCALS, Uttaranchal University, Arcadia Grant, Chandanwari, Premnagar, Dehradun, Uttarakhand, India

Lakshya Ashwal
Department of Food Technology, UCALS, Uttaranchal University, Arcadia Grant, Chandanwari, Premnagar, Dehradun, Uttarakhand, India

Prateek Gururani
Assistant Professor, UCALS, Uttaranchal University, Arcadia Grant, Chandanwari, Premnagar, Dehradun Uttarakhand, India

Nitika Rathi
Assistant Professor, UCALS, Uttaranchal University, Arcadia Grant, Chandanwari, Premnagar, Dehradun, Uttarakhand, India

Correspondence
Shubuhi Malik
Department of Food Technology, UCALS, Uttaranchal University, Arcadia Grant, Chandanwari, Premnagar, Dehradun, Uttarakhand, India

Pomace: A potential ingredient of cake making a review paper

Shubuhi Malik, Tayyaba Khanam, Lakshya Ashwal, Prateek Gururani and Nitika Rathi

Abstract
The demand of baked items has witnessed an incredible increase in twentieth century. Cake is a baked dessert that has gained popularity with changes in eating habits of people. The benefits of consuming cakes are- it contains many nutrients, the nutrient that comes from egg are used as binders, it also contain protein. The milk in cake provides us with many nutrients that are required for strong bones; they also contain calcium and other minerals for proper development of bones and teeth. Diets rich in fruits and vegetables contain potassium, dietary fibre, folate, vitamin A and vitamin C. Consumption of fruits and vegetables also helps to prevent various chronic diseases. This review deals with the production of different cakes by using different fruits and vegetables in order to create a nutritive enriched cake for today's health conscious society. The cake was baked; and their proximate, Physio-chemical and sensory parameters were evaluated. The texture, colour and taste were determined. The tests also revealed good nutritive profile in terms of antioxidant, dietary fibre and protein. Overall, the cake made proves to be a nutrient- rich functional food and thus has high possibility of use in the market.

Keywords: Cake, fruits, vegetables, functional food

Introduction
Bakery products are consumed widely and have enhanced its importance internationally (Kotsianis *et al*., 2002). Cake is a bakery product that is mostly inspired by the people globally. Cake is considered as a semi-dry foam food which consists of air pockets enclosed in a starch and protein network. Cake basic constituents are wheat flour and different levels of sugar, fat, milk, eggs, emulsifiers, baking powder. The additional ingredients in cake are nuts, fruits, flavors and cocoa powder (Cauvain and Cyster, 1996; Cauvain and young, 2006) [8, 7]. The cakes in consumer's mind are associated as appetizing sponge product with desired organoleptic properties (Matsakidor *et al*., 2010).Generally, cake constituents may be characterized as tenderizers, moisteners, tougheners or driers. For the development of high quality cake, tenderizers and tougheners should be balanced correctly. Flour acts as a structural builder that helps in the formation of the crust and crumb structure in the cake and considered as a toughener. The tenderizers in cake are fat and sugar, which enhance the flavor and gives the cake a soft structure. Eggs are emulsifying, drying and leavening agents of the batter ingredients. Function of baking powder in cake making is to expand the bubbles causing the cake to rise to its potential. The basic operations involve in cake making are depositing, baking, mixing, cooling and packaging. During mixing, foam and emulsion from egg proteins result in airy structure of the cake and it leads to foam formation where the air cells are incorporated into the batter. The more is the size of air pockets, higher will be the volume. A high quality cake is determined by its volume and moist crumb (Sahi *et al*., 2003; Cauvain and young, 2006) [7].

Classification of cake
Cakes as a part of bakery product have different characteristics compared to another bakery product. Based on the definition, cake is included in baked confectionary products. It means that cake is a sweet food product that contains more sugar and made from four main ingredients that are sugar, flour, butter and eggs (Syarbini, 2014).Cakes are classified on the basis of production method and formulations. These are categories into 3 types i.e. foam, chiffon and batter cake (Conforti, 2006). By Single stage or multistage mixing method the batter type cake is prepared, such as creaming method (Lai and Lin, 2006) [22]. In this method, butter and sugar are mixed together in order to produce light foam. The addition of flour takes

Place at the end of the operation. Two basis steps are required for the preparation of foam type cake. First, sugar and egg are beaten into thick foam and then flour is added in it. The chiffon cake is a mixture of the batter and foam types. Batter carries yolk, flour, water and oil is added into the egg white foam. (Bennion and Bamford, 1997) [4]

Cakes are also classified on the basis of recipe as high proportion or low proportion cakes. High proportion cake contain sugar to flour beyond 1.0 (Decour and Hoseney, 2010) [13] whereas Low proportion cakes carry lower or equal amount of flour and sugar (Conforti, 2006).

Preparation of cake

Most of the cakes are prepared by using eggs, refined wheat flour, milk powder, preservatives, water and flavorings. The constituents are combined together, in either the flour batter or sugar batter methods. Then the batter is mixed in a commercial mixer. The batter is then transferred to a baking mold.

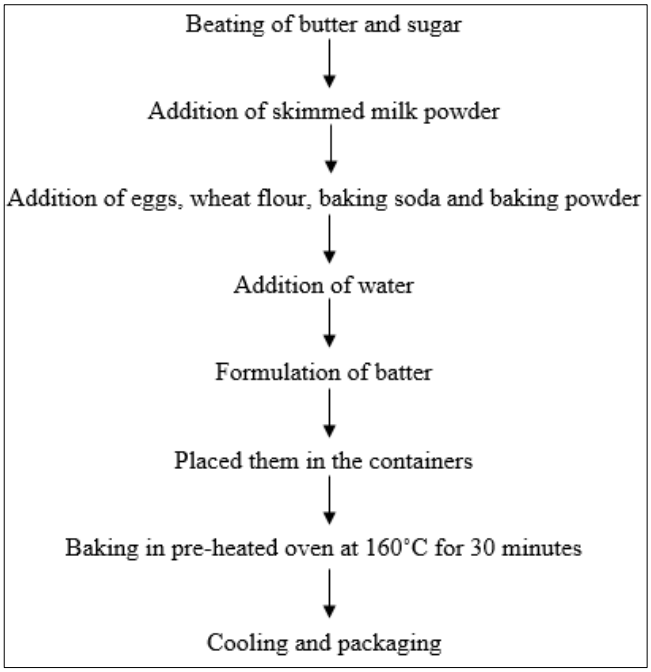

Fig 1: The cake is baked in an oven (Ceserani and Kinton, 1995) [9].

Preparation of different cakes

Carrot pomace is the waste generally produced during the processing of carrot juice. As the concentration of pomace increases from 5 to 40%. There is an increase in firmness/stiffness of cake with increase in pomace content. At pomace level of more than 25% texture became quite hard whereas at pomace level of less than 15%, texture was soft and could retain its shape. Therefore, levels lower than 15% were not considered desirable for good cake formulation. The cake containing different levels of pomace were found to have significant effect on flavor attributes. The score increases up to 15% pomace incorporation and obtained highest value among various levels of pomace incorporation. This may be due to the reason that carrot flavor was prominent up to 15% pomace addition whereas typical cooked pomace flavor dominated above this level. Also, the cake containing 15% pomace had balanced flavor of both the major ingredients, i.e. pomace and wheat flour. Therefore, 15% level of pomace was considered optimal (Semwal *et al*., 2013). The carrot pomace remains cake with particle size 210 and 500nm has pH 6.93 and 6.77 respectively. The reason behind this is the presence of amino acids, organic acids, proteins and other components with acidic character in carrot pomace powder (CPP) (Sharma *et al.*, 2012). The cake with 10, 20 and 30 % of CPP 210 and CPP 500 has increased density from 0.899 to 0.996 g/cm^3 by adding up of 30% CPP 210 and to 0.985 g/cm^3 by adding up of CPP 500 (Levent and Bilgicli, 2011) [24]. The CPP 210 has higher density than CPP 500, because the CPP 500 consists of more porous and open structure as compare to CPP 210. The textural properties of the cake were not affected with different particle sizes of carrot pomace powder. Addition of carrot pomace powder lowers the cake density and the cake that contains 30 and 20% CPP 500 has the minimum density among all different levels. In carrot pomace powder, the beta-carotene content is high as a result the increased concentration of carrot pomace powder leads to the change in the crumb color of the cake from pale to a little red. No considerable effects were seen on the properties of cake by altering the particle size of carrot pomace powder. Changes in the particle size of carrot pomace powder had no considerable effects on most of the properties of cakes. The gluten free cake quality is enhanced by the use of carrot pomace powder at the level of 30% (Majzoobi *et al*., 2016) [28].

Apple pomace is an abundantly available by-product generated throughout the manufacturing of apple juice. It can be safely used in human food (Chauhan and Masoodi, 2007 and Verma *et al*., 2010) [10, 45] and animal feed (Bhat *et al*., 2000 and Teli 1982) [6]. Cake batter was baked at 160˚C temperature for 1 hour containing 0 to 30% of apple pomace. The physical properties of the cake prepared by substituting wheat flour by 30%, 20% and 10% concentration of apple pomace were determined. With the increase in concentration of apple pomace from 0% to 30% and the texture measurement values reflected in volume of cake from 850 cm^3 to 620 cm^3 and an increase in the density of cake from 0.48 to 0.67g/cm^3. The density of cake increases owing to the apple fiber water binding properties (Chen *et al*., 1988). The cake made from 25% and 0% of pomace has moisture content, protein content and fat content value ranges from 20.9-21.8%, 8.5-8.46% and 19.3-20.5% respectively. The total dietary fiber (TDF) content was 14.2% for the cake at the same time as it was 0.47% for control sample. Likewise, the soluble dietary fiber (SDF) content for cakes prepared from 25% and 0% apple pomace blend was 5.8% and 0.16% respectively. The above readings indicate that apple pomace could be a relatively good quality source of dietary fiber in cakes. Apple pomace being a rich source of fiber tends to increase the water absorption capacity of the flour. Its high total dietary fiber (TDF) content makes it a valuable source of dietary fiber in cake making. Apple pomace also has the potential for use as a good source of polyphenols which have antioxidant properties (Sudha *et al.*, 2006).

Watermelon belongs to the family of cucumber and is a huge, egg-shaped, round or quadrilateral shaped typical fruit (Koccheki *et al*., 2007). Along with being a wealthy source of vitamins it also serves as a truly high-quality source of various phytochemicals (Perkins-Veazie and Collins, 2004) [32]. The watermelon rind and sharlyn melon peel were dehydrated for 24 hours at 50˚C by means of hot air oven and were next grounded into fine powders. The cake was prepared in the ratio of 2.5%, 5% and 7.5% of watermelon rind and sharlyn melon pomace which acts as a replacement medium for the flour. The cake was then baked in oven for 30 minutes at 180˚C (Bennion and Bamford, 1973) [5]. The exchange of

the flour with sharlyn melon pomace powder and watermelon rind did not extensively influence the fat content of the cake. But by raising the replacement level, there was a decline in moisture and protein content of the cake having sharlyn melon pomace powder and watermelon rind. As the intensity of replacement level increases, the moisture and protein content of the cake decreases because sharlyn melon pomace powder and watermelon rind has low protein and moisture content when compare to flour but the carbohydrate and ash content of cake increases owing to their higher concentration in the substituted substance than in the flour. The result agreed with Hanaa and Eman, 2010. An increase in mass as compared to the organize sample was reported in the watermelon rind and sharlyn melon peel powder when it is used in cake. The sharlyn melon pomace and watermelon rind (5%) has the greatest volume as compare to 2.5 and 7.5%. Raising the levels of different fibers results in increased volume and specific volume of the cake (Singh *et al*., 1995) [40]. However, Watermelon rind and sharlyn melon peel are high-quality source of dietary fiber and phenolic components. The satisfactory cake was obtained at 5% substitution level (Sayed and Ahmed, 2013) [2]. The cake was manufactured by replacement of wheat flour by water melon rind powder at the levels 12%, 20% and 30%. The cake was baked for 40 minutes at temperature of 160˚C in an oven. The cake with 10% watermelon rind powder has higher volume due to water absorbing matrix (cellulose, oil, lignin, hemicelluloses, and other dietary compounds) in watermelon rind powder which increases water holding ability leading to enhancement of cake volume. The fibre tends to lower gas retention of the dough while fat increases dough retention (Williams and Pullen, 1998). The cake specific volume attained by watermelon flour at 10, 20 and 30% levels were than that of control cake. The cake containing 10% rind powder gave highest specific volume. So, the water melon rind can be utilized for the preparation of cake and the good quality watermelon rind powder cake may be processed incorporating 10% of watermelon rind powder into the formulation of plain cake for improved nutritional value and other aspects (Hoque and Iqbal, 2015) [18].

Mango is a well-liked and a leading tropical produce in the globe with regard to production and consumer acceptance. The sponge cake was prepared from mango peel flour (MPeF) and mango pulp flour (MPuF) at a concentration level of 10%, 20% and 30% with 0% as control. The cake was baked for 15 minutes at 180˚C in a stimulating oven. The sponge cake with 5% MPuF has lower moisture content and this is related to its fibre content in mango pulp flour. Fruit fibre naturally contains a significant percentage of water together with small amounts of lignified vascular tissues (Rodriguez *et al*., 2006). The protein content decreased with increasing levels of MPuF and MPeF. However, no considerable difference was seen in the protein and fat contents of cakes made with MPeF at 10-20% level and MPuF at 5-20% level, respectively. The crude fibre contents of mango pulp flour and mango pomace flour of the cakes were significantly improved with increased levels of MPuF and MPeF. The total dietary fibre (DF) content of the sponge cakes increases from 2.82 (control) to 26.46 (30% MPeF sponge cakes), and the soluble dietary fibre (SDF) range from 0.52 (control) to 9.26% (30% MPeF sponge cake), while for insoluble dietary fibre (IDF) content it was from 2.30 (control) to 17.20% (30% MPeF sponge cake). The TDF, IDF and SDF contents of MPuF and MPeF was significantly higher as compare with the control. MPeF were high in IDF and 30% MPeF sponge cake were the highest than others. IDF are the dominant fibre fractions found in mango peel in all of the mango varities (Ajila *et al.,* 2007). Sponge cakes that were incorporated with MPuF and MPeF have high dietary fibre and low calorie (Aziah *et al*., 2011) [30].

Finger millet, one of the most common staple foods in India (Majumder *et al*., 2006). The finger millet cake was made by substituting wheat flour with malted finger millet flour at the concentration of 20, 40, 50, 60 and 70% of the malted millet flour. The cake was then baked at 160˚C for 25-30 minutes (Singh *et al*., 2006) [41]. The consequences observed by increasing the millet flour in cake was pH decrement and enhancement in the titratable acidity as the fat undergo hydrolysis for the production of ascorbic acid and fatty acid (Sangita and Sarita, 2000; Taur *et al.*, 1984) [35, 44]. The color and texture of the cake with 60 and 70 % finger millet flour were low as compare to other because of the malted ragi flour which contributes to the intensity of brown color of the cake. The lower texture and lower sponginess of the cake is the outcome of low gluten content. There was no major difference in fat content. The mineral and crude fibre contents were higher in the cake with 60 and 70% finger millet flour. The mineral content i.e. phosphorus, iron and calcium was high due to supplementation of malted ragi flour while the fibre content reportedly increased with increase in the fraction of malted millet flour (Singh *et al*., 2006) [41]. Higher fibre and mineral content was seen in the cake made with 60 and 70% malted finger millet flour (Desai *et al.,* 2009).

Carrots are commonly considered as a resourceful vegetable. The indigenous carrots were believed to be yellow or purple, primarily in northern Arabia and Iran (Simon 2000). The cake made from 5 to 30% carrot pomace was baked at 195˚C for 20minutes. The highest viscosity was observed in the cake containing carrot powder at the rate of 30%. By decreasing the size of the particle and enhancing the pomace level it leads to increase in the viscosity of the batter (Masoodi *et al.,* 2002) [29]. As the concentration of carrot powder increases, the ash and the moisture content of cake increases considerably whereas the protein and carbohydrate content decreases on increasing the carrot powder concentration. Also the cake decreases with increase in carrot powder concentration. The volume decreases to 66.99, 62.95, 59.61 and 56.29 cm^3 for 5, 10, 20 and 30% respectively. The level of the cake decreases as the pomace level increases (Masoodi *et al*., 2002) [29]. Therefore, the batter viscosity is enhanced by the addition of carrot powder in the cake. The ash and moisture content increases with increasing the concentration of carrot powder (Salehi *et al*., 2015).

Gilaburu known as *Viburnum opulus*, is a fruit of a bush known also as European cranberry bush, cramp bark, snowball bush, guilder rose in English. Gilaburu alone or mixed with honey, is traditionally used to treat ailments such as colds, cough, ulcers, tuberculosis etc. It is used in marmalades and confectionary (Velioglu *et al.,* 2006). The gilaburu pomace was added to cake batter at 0, 5, 10 and 15% on wheat flour basis. The cake was baked at 175˚C for 25 minutes (Lin *et al.,* 1994). The pH decreases by increasing the gilaburu pomace concentration. At 15% pomace addition level, pH decreases to 7.11. Also by increasing the pomace concentration the cake volume decreases significantly. The cake made with 15% pomace has lesser volume 64.5ml as compare to other sample. The apple pomace and grren tea addition has reported to decrease the cake volume (Lu *et al*.,

2010; Masoodi *et al.,* 2002) [29]. The total phenolic content of cake increases with increase in pomace concentration. There was a high correlation between total phenolic contents and the level of gilaburu pomace. Cake with 15% of pomace has highest phenolic content of 179.73 mg Gallic acid equivalent/ 100g dry sample among all the samples. Similarly, the DPPH radical scavenging activity (%) of the cake samples increases with increase in gilaburu pomace concentration. There was a high correlation between the radical scavenging activity (%) and the level of gilaburu pomace. Cake with 15% of pomace has highest radical scavenging activity (%) of 76.83 (Fang *et al.,* 2008; Kilci and Gocmen, 2014) [16, 21].

The botanical name of sweet potato is *Ipomoea batatas* Lam and globally it is considered as an essential crop. The cake was prepared by using different concentration of sweet potato flour. The substitution was made with 10, 20, 30, 40, and 50 % of sweet potato flour. The cake was baked at 190˚C for 15 minutes. As the concentration of sweet potato increases there is increase in the ash, moisture and fat content of the flour, but there was a reduction in the fibre, carbohydrate and protein content of the compost flour. The reason behind this is the temperature employed which leads towards the obliteration of nutrients because of the pH of the batter, elevated temperature and extent of heat (Erdman and Erdman, 1982). The destruction of nitrogen at eminent temperature is responsible for the reduction in the protein content of the cake with an increase in sweet potato flour (Singh and Singh, 1991) [42]. Thus the use of sweet potato instead of wheat flour in cake up to 30% indicates that the cake baked has improved nutritional value and other aspects (Okorie and Onyenke, 2012) [31].

Black rice is a kind of brown rice contains anthrocyanins pigments, rice bran and dietary fibre and in animals, it is used as an effective agent in lowering down the level of cholesterol in the body (Kahlon *et al*., 1990; Saunderas, 1990). The cake was prepared with medium grain brown rice (GMBR) and ground black rice (GBR). The ground black rice was blended with medium grain brown rice at 100, 75, 50 and 25%. The specific volume was high for the cake made with 100% medium grain brown rice that ranges from 3.78to 5.49 cm^3/g and moisture increases from 16 % to 20% as the concentration increases. As the tempering moisture content increases it results an increase in the specific volume of the cake which has being manufactured from GMBR (Huff *et al.,* 1992) [19]. The use of medium grain brown rice at the level of 100% was observed for high specific volume during heating time. The increased heating time leads to increase in the specific volume of the medium grain brown rice cake (Huff *et al.,* 1992) [19]. Thus the volume of the black rice cake shows an increasing effect with increase in the moisture, heating time and temperature (Lee *et al.,* 2007).

Conclusion

Promoted as healthy throughout the globe, fruits and vegetables could be added in different bakery products. The widely consumed bakery product, cake when made using a diverse group of plant foods would prove to be an excellent food item for today's fast paced society. The attributes that are used to explain the quality of the cake can be enhanced by adequate ingredients and correct formulations. Their formulations could be decided in accordance with consumer preference and market demand. The widely loved and consumed traditional cake could be made healthier and nutritionally well-off by the substitution of basic ingredient i.e. wheat flour with pomace of fruits and vegetables. This would greatly add to the varieties available in the market and would have a positive effect on the cake's acceptance by health conscious consumers of the society.

References

1. Ajila CM, Bhat SG, Rao UP. Valuable components of raw and ripe peels from two Indian mango varieties. Food Chemistry. 2007; 102(4):1006-1011.
2. Al-Sayed HM, Ahmed AR. Utilization of watermelon rinds and Sharlyn melon peels as a natural source of dietary fiber and antioxidants in cake. Annals of Agricultural Sciences. 2013; 58(1):83-95.
3. Arendt EK, Ryan LA, Dal Bello F. Impact of sourdough on the texture of bread. Food microbiology. 2007; 24(2):165-174.
4. Bennion EB, Bamford GST. The technology of cake making. London: Blackie Academic and Professional, 1997, 421.
5. Bennion EB, Bamford GST. Cake making process. In: The Technology of Cake Making, fifth ed. Leonard Hill, London, 1973, 225-230.
6. Bhat GA, Matoo FA, Bandy MT. Feeding value of apple pomace for broiler chicken, SKUAST J Res. 2000; 2:182-185.
7. Cauvain SP, Young LS. Baked products: science, technology and practice, 2006.
8. Cauvain SP, Cyster J. Sponge cake technology, 1996.
9. Ceserani V, Kinton R, Foskett D. Practical cookery. Hodder and Stonghton, 1995.
10. Chauhan GS, Masoodi FA. Use of apple pomace as a source of dietary fibvre in wheat bread. J Food process. Presev. 2007; 22:255-263.
11. Chen H, Rubenthaler GL, Schanus EG. Effect of apple fiber and cellulose on the physical properties of wheat flour. Journal of food science. 1988; 53(1):304-305.
12. Chen H, Rubenthaler GL, Leung HK, Baranowski JD. Chemical, physical, and baking properties of apple fiber compared with wheat and oat bran. Cereal Chem. 1988; 65(3):244-247.
13. Delcour J, Hoseney RC. Principles of cereal science and technology authors provide insight into the current state of cereal processing. Cereal Foods World. 2010; 55(1):21-22.
14. Desai AD, Kulkarni SS, Sahoo AK, Ranveer RC, Dandge PB. Effect of supplementation of malted ragi flour on the nutritional and sensorial quality characteristics of cake. Advance Journal of Food Science and Technology. 2010; 2(1):67-71.
15. Erdman Jr JW, Erdman EA. Effect of home preparation practices on nutritive value of food. Miloslaw Recheigh, Florida. 1982; 1:237-263.
16. Fang Z, Hu Y, Liu D, Chen J, Ye X. Changes of phenolic acids and antioxidant activities during potherb mustard Brassica juncea, Coss. Pickling. Food chemistry. 2008; 108(3): 811-817.
17. Hemeda HM, Mohamed EF. Functional attribute of chickpea and defatted soybean flour blends on quality characteristics of shortening cake. European Journal of Applied Science. 2012; 2(2):44-50.
18. Hoque MM, Iqbal A. Drying of watermelon rind and development of cakes from rind powder. International journal of novel research in life sciences. 2015; 2(1):14-21.
19. Huff HE, Hsieh F, Peng IC. Rice cake production using

long-grain and medium-grain brown rice. Journal of food science. 1992; 57(5):1164-1167.
20. Kahlon TS, Saunders RM, Chow FI, Chiu MM, Betschart AA. Influence of rice bran, oat bran and wheat bran on cholesterol and triglycerides in hamsters. Cereal Chemistry. 1990; 67(5):439-443.
21. Kilci A, Gocmen D. Phenolic acid composition, antioxidant activity and phenolic content of tarhana supplemented with oat flour. Food chemistry. 2014; 151:547-553.
22. Lai HM, Lin TC. Bakery products: science and technology. Bakery products: Science and technology, 2006; 3-65.
23. Lee JC, Kim JD, Hsieh FH, Eun JB. Production of black rice cake using ground black rice and medium-grain brown rice. International journal of food science & technology. 2008; 43(6):1078-1082.
24. Levent H, Bilgiçli N. Effect of gluten-free flours on physical properties of cakes. Journal of Food Science and Engineering. 2011; 1(5):354.
25. Lin PY, Czuchajowska Z, Pomeranz Y. Enzyme-resistant starch in yellow layer cake. Cereal Chemistry. 1992; 71:69-75.
26. Lu T. M, Lee CC, Mau JL, Lin SD. Quality and antioxidant property of green tea sponge cake. Food Chemistry. 2010; 119(3):1090-1095.
27. Majumdar TK, Premavalli KS, Bawa AS. Effect of puffing on calcium and iron contents of Ragi varieties and their utilization. Journal of food science and technology. 2006; 43(5):542-543.
28. Majzoobi M, Poor ZV, Jamalian J, Farahnaky A. Improvement of the quality of gluten-free sponge cake using different levels and particle sizes of carrot pomace powder. International Journal of Food Science & Technology. 2016; 51(6):1369-1377.
29. Masoodi FA, Sharma B, Chauhan GS. Use of apple pomace as a source of dietary fiber in cakes. Plant Foods for Human Nutrition. 2002; 57(2):121-128.
30. Noor Aziah AA, Lee Min W, Bhat R. Nutritional and sensory quality evaluation of sponge cake prepared by incorporation of high dietary fiber containing mango (Mangifera indica var. Chokanan) pulp and peel flours. International journal of food sciences and nutrition. 2011; 62(6):559-567.
31. Okorie SU, Onyeneke EN. Production and quality evaluation of baked cake from blend of sweet potatoes and wheat flour. Academic Research International. 2012; 3(2):171.
32. Perkins-Veazie P, Collins JK. Flesh quality and lycopene stability of fresh-cut watermelon. Postharvest Biology and Technology. 2004; 31(2):159-166.
33. Rodríguez R, Jimenez A, Fernández-Bolaños J, Guillén R, Heredia A. Dietary fibre from vegetable products as source of functional ingredients. Trends in food science & technology. 2006; 17(1):3-15.
34. Salehi F, Kashaninejad M, Akbari E, Sobhani SM, Asadi F. Potential of sponge cake making using infrared–hot air dried carrot. Journal of texture studies. 2016; 47(1):34-39.
35. Sangita K, Sarita S. Nutritive value of malted flours of finger millet genotypes and their use in the preparation of burfi. Journal of Food Science and Technology (Mysore). 2000; 37(4):419-422.
36. Şeker İT, Ertop MH, Hayta M. Physicochemical and bioactive properties of cakes incorporated with gilaburu fruit (Viburnum opulus) pomace. Quality Assurance and Safety of Crops & Foods. 2016; 8(2):261-266.
37. Semwal S, Chaudhary N, Karoulia S. Addition of Carrot Pomace to Increase the Nutritional and Rheological Properties of Traditional Cake. International Journal of Science and Research. 2016; 5:1412-1416.
38. Sharma KD, Karki S, Thakur NS, Attri S. Chemical composition, functional properties and processing of carrot-a review. Journal of food science and technology. 2012; 49(1):22-32.
39. Simon P. Domestication, historical development, and modern breeding of carrot. Plant breeding reviews. 2000; 19:157-190.
40. Singh B, Sekhon KS, Singh N. Suitability of full fat and defatted rice bran obtained from Indian rice for use in food products. Plant foods for human nutrition. 1995; 47(3):191-200.
41. Singh G, Sehgal S, Kawatra A. Sensory and nutritional evaluation of cake developed from blanched and malted pearl millet. Journal of Food Science and Technology Mysore. 2006; 43(5):505-508.
42. Singh U, Singh B. Functional properties of sorghum-peanut composite flour. Cereal chemistry. 1991; 68(5):460-463.
43. Sudha ML, Baskaran V, Leelavathi K. Apple pomace as a source of dietary fiber and polyphenols and its effect on the rheological characteristics and cake making. Food chemistry. 2007: 104(2):686-692.
44. Taur AT, Pawar VD, Ingle UM. Nutritional improvement of grain sorghum (sorghum bicolor (L.) Moench) by germination. Indian journal of nutrition and dietetics. 1984; 21:168-173.
45. Verma AK, Sharma BD, Banerjee R. Effect of sodium chloride replacement and apple pulp inclusion on the physicochemical, textural and sensory properties of low fat chicken nuggets. LWT- Food Sci. Technol. 2010; 43:715-719.
46. Wilderjans E, Luyts A, Brijs K, Delcour JA. Ingredient functionality in batter type cake making. Trends in food science & technology. 2013; 30(1):6-15.