

Development of fibre rich cutlet using flaxseed

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ABSTRACT : Kids are hungry, tired and exhausted after coming back home from the school. Children seem to have the biggest appetites at this time. They need some good heavy snacks that contain some amount of protein along with carbohydrates to refuel their body. After school, snacks also contribute to the daily nutritional needs. Cutlets are popular among children and they prefer it over traditional snacks. The present study was carried out to prepare fiber rich cutlet which could counter balance the affect potato cutlet. Fiber rich cutlet was prepared by replacing potato (standard recipe) different proportions *i.e.* 10gm, 20gm, and 30gm of flaxseed. The ground flaxseed was used and mixed with boiled potatoes to prepare the cutlet. Organoleptic and nutrients evaluation concluded that the most acceptable levels of flaxseed incorporation were 3rd ratio *i.e.*, 30 percent. Nutrition composition of flaxseed cutlet showed the analyzed value of moisture (4.30), protein (16.41), fat (13.55), ash (1.79), fibre (7.76), carbohydrate (56.15) and energy (443.41) per 100g, respectively. Flaxseed cutlet was found to have maximum amount of protein, least amount of fat, calories but with good amount of fiber and can be claimed for functional health benefits.

KEY WORDS : Health benefits, Dietary fibre, Corn

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Epidemiological research has demonstrated a relationship between energy rich diet and chronic diseases (Best, 1991; Kaferstein and Clugston, 1995) and thus diet with high fibre has been recommended (Johnson and Southgate, 1994). Dietary fibres are incorporated in the products for their functional and technological properties (Thebaudin *et al.*, 1997). Various types of fibres have been used in the products to increase the cooking yield due to their water and fat binding properties (Colfrades *et al.*, 2000). Effect of varies fibres on food differs according to quantity and nature of dietary fibre (Thebaudin *et al.*, 1997). Hence, this study was carried out to assess the utility of flaxseed in formulation of cutlets, to standardize potato cutlet using flaxseed and to evaluate the quality attributes.

RESEARCH METHODS

Flaxseed were locally collected and cleaned of material. Cutlets were prepared with different ratio (10, 20, 30g) of flaxseed besides other additives, like onion, ginger garlic paste, chilies and coriander leaves used for flavouring the product.

The flaxseed were grounded to a fine powder and mixed with potatoes to prepare the cutlet by standardize procedure (Table A).

Table A : Ingredients

Potatoes medium sized	2
Breadcrumbs	115 g
Coriander seeds	5 g
Ginger paste	10 g
Green chilies	4
Red chilies powder	5 g
Refined oil	10 ml (for deep-frying)
Salt	According to taste

Preparation of cutlet:

Boiled potatoes in salt water, peeled and then mashed. Cleaned, washed and chopped green chilies and coriander leaves. Heated oil and added coriander seeds. When it crackled, added ginger paste, garlic paste, green chilies and

stirred for a movement. Added red chili powder, coriander powder, and turmeric powder while stirring continuously. Added different portions of flaxseed and cooked and shallow fried. Added potato, adjusted salt and continued cooking till masala completely dried up. Removed and cooled it, now mixed well with breadcrumbs. Divided into small equal portions, gave each portion a cutlet shape. Deep-fried in moderate hot oil until it became crisp. Served hot. Organoleptic evaluation was carried out at 9-point hedonic scale by a panel of 10 judges. From this, the most acceptable product in each treatment was selected for further studies. Best selected product from each treatment was replicated thrice and sensory and chemical evaluation was carried out.

Nutrient analysis:

Analyzing the nutrient composition of developed product is essential so the product developed was analyzed for proximate composition as moisture, fat, protein, fibre and ash content (AOAC, 1980). Carbohydrate and calorie content were determined by calculation method. The fibre content was estimated by acid alkali digestion method as suggested by Chopra and Kanwar (1978).

RESEARCH FINDINGS AND DISCUSSION

The findings obtained from the present study have been discussed under the following sub-heads:

Sensory evaluations:

Sensory evaluations have always been recognized to be deciding factors in the acceptance and enjoyment of food by masses and have an edge over other equally important nutritional and safety aspects. Organoleptic scores for flavour, texture, taste has been presented in Table 1.

Treatments	Control		Flaxseed	
	C1	R1	R2	R3
Appearance	9	8	9	9
Colours	9	7	7	9
Flavour	9	6	5	8
Texture	8	7	8	9
Taste	9	6	5	8
Total	44	34	34	43

C1-control R1-ratio (10%)
R2-ratio (20%) R3-ratio (30%)

It was found that cutlet with 30 per cent of flaxseed was highly acceptable ranging between 8-9.

Proximate composition of the cutlets:

The nutrient analysis of food is an important part of quality assurance. Various types of samples may require analysis as a part of research programme, as new food products



Plate 1 : Control



Plate 2 : Cutlet fortified with flaxseed

are developed or as part of quality assurance for existing products (Wilson, 1994). Cutlets were analyzed for moisture, protein, fat, fibre, carbohydrate and energy content and the results were presented per 100g cooked wt basis (Table 2 and Fig. 1).

Name of the nutrient	Control	Flaxseed
Moisture	50.16	4.30
Protein (g)	1.04	16.41
Fat (g)	10.35	13.55
Ash	1.3	1.79
Fiber	0.78	7.76
Carbohydrate	36.37	56.15
Energy (kcal)	242.79	443.41
Cooked weight	139 g	138 g

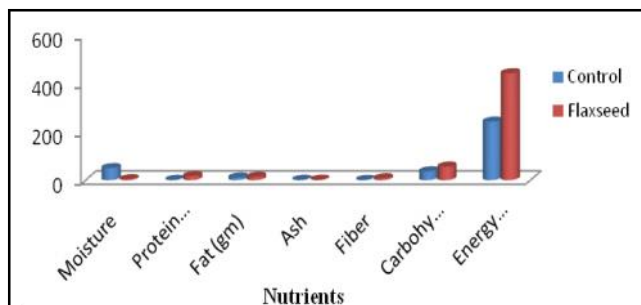


Fig. 1 : Nutritional composition of cutlets

Nutrient content of control:

Data regarding the proximate composition of non-

fortified cutlets that is control has been presented in Table 2. The moisture content of the cutlets was found to 50.16 percent. The protein and fat content was estimated to be 1.04 and 10.35 per cent, respectively. The ash and fibre content was found to be 1.3 and 0.78. The energy and carbohydrate was estimated to be 242.79 and 36.37, respectively.

Nutrition with flaxseed:

Data regarding the proximate composition of flaxseed - fortified cutlets has been presented in Table 2. The moisture content of the flaxseed nutrition cutlets was found to per cent which was less than that reported by Talukder and Sherma (2009) in meat. The protein and fat content was estimated to be 16.41 and 13.55 g, respectively. The protein content was higher when compared to control. The ash and fibre content was found to be 1.79 and 7.76g, which was high when compared to control. The energy and carbohydrate was estimated to be 443.41 and 56.15, respectively.

Conclusion:

After conducting the sensory and nutrient analysis, it can be concluded that in flaxseed the most acceptable level of fortification was flaxseed *i.e.*, 30 per cent. According to the nutrient composition, flaxseed cutlet was found to have maximum amount of protein, least amount of fat, calories but with good amount of fibre. This can be a nutritional and low cost food supplement for children.

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REFERENCES

- AOAC (1980). *Official Methods of Analysis*. 13th ed., Association of Official Analytical Chemists, Washington D.C., U.S.A.
- Best, D.** (1991). Whatever happened to fiber. Prepared foods, 160, 54-56, 58.
- Chopra, S.L.** and Kanwar, J.S. (1978). *Analytical Agricultural Chemistry*, Kalyani Publishers, Ludhiana (PUNJAB) INDIA.
- Cofrades, S.**, Guerra, M.A., Carballo, J., Fernandez-Martin, , and Jineez- Colmenero, F. (2000). Plasma protein and soy fiber content effect on bologna sausage properties as influenced by fat level. *J. Food Sci.*, **65** : 281-287.
- Johnson, I.T.** and Southgate, D.A.T. (1994). Dietary fiber and related substances. In J. Edelman, and S. Miller (Eds.), Food safety series (pp. 39-65). London: Chapman and Hall.
- Kaferstein, F.K.** and Clugston, G.A. (1995). Human health problems related to meat production and consumption. *Fleishwirtschaft.*, **75** : 889-892.
- Thebaudin, J.Y.**, Lefobvre, A.C., Harrington, M., and Bourgeois, C.M. (1997). Dietary fibers: Nutritional and technological interest. *Trends Food Sci. & Technol.*, **8** : 41-48.
