

SCIENTIFIC STUDY AND DEVELOPMENT OF MEAT BARIAN – A TRADITIONAL FOOD PRODUCT Part I. An Overview

Hamid Ahmad, Sultan Shakoor Chaudhry and Razia Rafique Siddiqui

PCSIR Laboratories, Lahore-16

(Received August 30, 1986; revised February 10, 1987)

This overview is a part of the systematic study of a rural-based traditional dry food of the subcontinent, "barian" or "varian". It is usually made by wet or dry grinding and mixing of generally consumed pulses. The traditional method of "barian" making, drying and mode of selling are described. The possibility of its export and the marketing aspects for a traditional product have been also examined. The discussion is based on reasons to a detailed study of this traditional food item.

Key words: Pulses; Barian; Meat.

INTRODUCTION

Traditional foods have been studied systematically for too short a time to make a sufficient number of results available [1]. The gradual replacement of the traditional and laborious practice in the production of bread, biscuits, papars, pickles etc. even in villages by organised production and marketing is noteworthy. Practically every grocery store or mini market shop is doing about half its business these days on food products that did not exist some 10-15 years ago. Religious taboos as well as cultural and ethnic restrictions are being replaced by more liberal and rational attitudes and preferences towards food. Taking advantage

of these changes, traditional foods are re-entering the markets with concepts of appropriate technology and better hygiene.

"Barian" product. Every country has its own traditional food products. "Barian" is one such product common in Pakistan. "Barian" is a product made by wet or dry mixing of different pulses with or without added meat. The nutritive composition of the four generally used pulses in "barian" is given in Table 1. "Barians" are shaped manually and sun-dried on roof tops, ground or on cot to about 6 – 8 % moisture level. They are marketed only in traditional shops. Their visual inspection and raw flavour/smell makes its tell-tale in terms of variety and quality. It is a

Table 1. Composition of pulses (dals) used in "barians" with special reference to protein and amino acid contents (per 100 g of edible portion of food).

	Protein (%)	Tryp. (g)	Thre. (g)	Isoleu. (g)	Leu. (g)	Lys. (g)	Meth. (g)	Cyst. (g)	Phe. (g)	Ala. (g)	Tyr. (g)	Val. (g)	Arg. (g)	His. (g)	Fat (%)
1. Dal Mash (<i>Vigna radiata</i> or Black gram)	23.6	.242	.801	1.390	2.062	1.510	.332	.287	1.242	.551	1.450	1.552	.599	1.5	
2. Dal Mung (<i>Vigna mungo</i> or Green gram)	24.4	.180	.765	1.351	2.202	1.667	.265	.152	1.167	.390	1.444	1.370	.543	1.2	
3. Lentils (<i>Lensculautia</i>)	25.0	.216	.896	1.316	1.760	1.528	.180	.204	1.104	.664	1.360	1.908	.548	1.3	
4. Dal gram (chickpeas)	20.8	.170	.739	1.195	1.538	1.434	.276	.296	1.012	.692	1.025	1.551	.559	5.2	

product of the cottage scale industry coming down through ancestral technologies which may differ from person to person and from region to region or both. Its unhygienic and non-uniform production has led to very inferior quality product, due to which its storage life and wide spread usage are limited. These factors have slowly led to the obsolescence of this traditional product and technology to some extent.

"Barian" is a reasonably nutritious product as can be seen from Table 1. It is desirable that unfulfilled demand of this relatively cheap and nutritious product be investigated to exploit it as an appropriate technology. No systematic survey or research on this product appears to have been reported so far.

The present study is a part of an overall systematic approach to probe into this traditional product and technology and to develop it on appropriate lines for its use at cottage and commercial levels. In this part an overview of the traditional "Barian" manufacture at various levels is described. The later parts of this scientific study will include "barian" formulations, meat incorporation, grinding and mixing methods, casting and different drying methods so as to find out their role in the end-product quality and marketability.

Traditional Method of Making "Barian": The traditional method of preparing "barian" is to soak the legumes, usually *mash* (*Phaseolus radiatus*), 'moong' (*Phaseolus mungo*) in water in earthen pots and keeping them in the sun for 2 to 3 hr. The water so warmed in the sun softens the skin coats (testa) of the pulses, which are then easily rubbed off, and the grain also swells up as it absorbs water. The swollen and succulent grains are then ground in a stone pot with a wooden log shaped for this purpose. The mass so obtained is called 'pithi'. This part of the operation is very laborious and time consuming but at the same time it helps in improving the texture and colour of the traditionally made finished product as a lot of air is incorporated in the "pithi". However, some large scale producers may use machines for the grinding of "dals" and for mixing them with condiments in which case the product may not be as good.

Some people (manufacturers) keep the dough "tight" by coarse grinding of the soaked "dals" (pulses) and others make it slack by grinding it fine. The former may yield a product of darker colour and tougher texture, and the latter type makes a product of light colour and smooth finish.

To the dough/"pithi" prepared by either method, are added thoroughly mixed selected condiments and salt in appropriate quantities and other ingredients (flavouring

agents) which are normally chosen from:

- | | |
|--------------------|-------------------------------|
| 1. Coriander | 9. Cinnamon |
| 2. Chillies | 10. Cloves |
| 3. Black pepper | 11. Cardamom |
| 4. Dried fenugreek | 12. Onion powder |
| 5. Cumin seeds | 13. Plums |
| 6. Ginger powder | 14. Fresh tomatoes or ketchup |
| 7. Garlic powder | 15. Dried pomegranate seeds. |
| 8. Turmeric | |

Some manufacturers are also known to employ coarse grinding after which they add corn starch (they call the "arraroot") to enhance binding in the dough.

The people who prepare "barian" which for domestic consumption are very selective about the addition of condiments to conform to their choice and taste.

The choice and addition of condiments are sometimes according to the social status of the consumer. Usually people of all socio economic groups prefer "hot", spicy and flavoured products.

The meat (both beef and mutton) incorporation is of strict economic consideration. However, during Eid-ul-Azha (Muslim's religious festival) when animals like goats, sheep, cows, even camels etc. are sacrificed and meat is abundant, "meat barians" may be prepared for domestic use according to requirements. It is more or less a practice to preserve the extra meat available on such occasions. Meat "barians" are considered a delicacy and hence are preferred over other types. Commercially meat "barians" are very rarely available. Manufacturers when queried disclosed that meat addition shortens shelf-life and raises price.

From the dough prepared (whether plain or meat containing) womenfolk cast or shape "barians" by hand. For commercial production both men and women are employed for this purpose. But generally it is a part-time home or cottage-scale industry.

Drying. Presently sun drying is the only practice for the drying of traditional products. The domestic practice is to put the product on sheets of cloth (or old bed sheet) spread on a cot. And the product is allowed to dry in the sun till it is almost bone dry. It may take usually 2/3 days in summer, which is peak season of production. During the rain season (July-September) "barian" producers face the most difficult time. The product cannot be fully dried due to high humidity and when the rain falls on the spread product, the whole lot goes bad.

In the commercial method, sun drying is carried out in different ways. Some producers dry "barians" on mats and

the progressive ones might employ the "sarkanda chic" (*Saccharum sara*) and still others use portable metallic trolleys comprising many shelves fitted with "chics". These trolls can be pulled in and out of the sunny or rainy area as and when the need arises.

The stem stalk of *Saccharum sara* is a reed which is commonly used here for making various types of mats and screens. The most common screen is the one used to alleviate the summer heat. The plant grows wildly on river, canal and pond banks and around other marshy places. Locally it is available in abundance at a very low cost.

Storage. The dried end product is usually filled in gunny bags and brought to grain market for wholesale purpose by the producers. The smaller ones may only cater to their own small outlets or a suburb/mohallah. The retail sellers buy from grain markets with amounts of upto 5 – 10 kg. or more. The materials stored in open gunny bags are liable to all kinds of infestation and rodent attack. The fibres stick to the product and so add to the microbial load of the already unhygienic contaminated product. Similarly weather conditions may also enhance their moisture content. Sometimes certain packets of "barians" may remain moist although they appear completely dry on the surface after drying. Commercial producers cannot and sometimes may not discriminate between such minute differences which may ultimately lead to the spoilage of the remaining (adjacent) well dried product.

From retail shops people would buy about 100-400 g. for one cooking or meal depending upon the size of their family. These are normally sold directly from old open tin or the gunny bags into smaller, used or new, paper bags. Of late producers have marketed "barians" in coloured printed plastic bags. The printing also mentions the ingredients and the nutritional nature of the product. A modern approach like this appears to be gaining popularity of their product in the market.

Consumption. In the Punjab the maximum consumption is in the monsoon and winter seasons, as the availability of fresh, clean vegetables is greatly reduced in the monsoon season. On the other hand severe winter conditions put more pressure on demand for high calorie foods, like meat for rich and "barian" and the like for the common man, mainly villagers and industrial labourers.

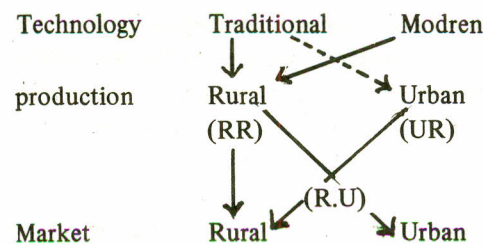
In northern hilly areas people are comparatively poorer and tend to consume more "barians", as stated by some traders. Meat "barians" seem to hold a lot of potential these, provided they are economically within the reach of people and store well. Diet in the northern areas is rather deficient in animal proteins. Meat is very rare to come by

as has been experienced by the people working there and others during their visits to Chitral, Dir etc. in the north west hills.

In the plains meat "barians" are also found to be popular if these are hot and spicy. At present the sale of "barians" in a big city like Lahore is said to be about 4 maunds/day (about 4 metric tons/month) [2].

Export potential. It has been understood from various manufacturers, urban as well as rural, that meat "barians" should have a fair potential for export to the Middle East Europe and North America. In all these three areas millions of Indians and Pakistanis are working and living. They prefer prepared food of their own taste origin and tradition. To meet any export demand it is however, very important that the product be hygienically prepared and packaged to last for the stated life. Furthermore the diet and food habits of some of the Middle Eastern people are somewhat closer to the people of the sub-continent. It may therefore, be safely assumed that once introduced to overseas people, the product may find some place in the diet of locals there as well.

Marketing research for a traditional product like barian. Considering different market scenarios, three levels i.e. technology, production and market are important which can be either rural or urban, giving rise to the following classification :



In the case of "barian", with its present state and technology of production, we are mainly concerned with the RR and RU types of marketing. The Rural to Rural (RR) marketing represents the class of products and services which are both produced and consumed in rural areas. Their major characteristics include small scale of production (excepting agricultural products) and not catering directly to large rural markets. The RR marketing of purely traditional product may not require marketing analysis or research at all but with the incorporation of meat in "barian" and making appropriate adjustments in its technology, new issues would arise necessitating market research. The market research of such a product should address itself to the following specific issues :—

1. Availabilities of local resources and skills.
2. Product specifications.
3. Market segmentation.
4. Product positioning.
5. Pricing.

Some of the market research tools and studies to help to solve the above issues may be :-

1. Feasibility study.
2. Concept test.
3. Product test.
4. Market survey to determine: (i) Willingness and ability to pay. (ii) Profile of potential consumers. (iii) Current practices. (iv) Design parameters.

The second type, i.e. rural to urban (RU) marketing concerns mostly with the traditional products having established markets and channels. Considerable attention is being focused on these product groups in recent times with the aim of creating income generating activities in rural areas. The marketing approach objective in this case may be to set up small scale but organised industries or it may be to promote activities at household/cottage scale level. Different types of questions need to be answered for different type of objectives.

In our scheme of work on "barian" product a market survey is planned in rural as well as urban areas in association with the Sociology Department, University of the Punjab, Lahore to answer some of the issues involved in enhancement of "barian" in the two markets.

DISCUSSION

The time has come when scientists, planners, decision-makers and implementers need to come together to programme a conscious and systematic effort to understand scientific and other principles involved in each traditional process, in order to place these technologies on a new foundation. Such an approach would upgrade traditional technologies into science-based technologies and provide products of desired quality at economic prices to the

consumer.

A scientific analysis of making "barian" by traditional methods would provide answers to the ways in which specific taste, flavour, colour and nutritional quality have developed within the product. A justifiable effort is needed for in-depth analysis to bring out the highly desirable and useful quality parameters, involving scientific approach to the extent that the traditional nature and image of the food is least disturbed. The results of these researches should lead to systematic and expanded production and consumption of the traditional food product. It may be planned to make it more nutritious by incorporating cheaper quality red meat (beef) to achieve a part of the long term objective of removing malnutrition and animal protein gap. Any new or improved technology based on rural (traditional) product would also prevent migration of village folk to urban areas, which is a desirable objective for any government. Kefford a well-known Australian food scientist has remarked, "but the most pressing need is for (food science) graduates, who are prepared to work on the old technologies, to upgrade village industries from empirical to science-based procedures, and to analyse economic aspects and the relations between costs and quality" [3].

Acknowledgement. The financial assistance of the International Development Research Centre (IDRC) of Canada is greatly acknowledged in making these studies possible.

REFERENCES

1. *Traditional and Non-Traditional Foods* (Rome, FAO Fd. and Nutr. Ser. No. 2, 1981).
2. Unconfirmed data collected by interviews of some important wholesalers of Barian in Lahore markets.
3. J.F. Kefford, "New and Old Technologies; Their Application to Food Processing in Developed and Developing Countries", Intern. Symp. F. Technol. Develop. Countr. Univ. Partanian Malaysia, Sept. 3-5 (1980).