

Enchanting Snack Foods and Newer Trends: Dr. J. S. Pai

Snack is a type of food not normally eaten as a main meal such as breakfast, lunch or dinner but to mitigate hunger between these meals. Snack may also be consumed between meals purely for the enjoyment of its taste. Traditionally snacks were prepared from leftovers or ingredients easily available at home and included sandwiches, nuts, fruits etc. More recently, because of the popularity of such foods packaged snack foods are not big business. Snack foods are made so they are portable, quick and satisfying. They have become more appealing than prepared foods and contain tempting, flavourful ingredients.

Snack foods are different from fast foods such as hamburger, pizza, etc. These are prepared and offered immediately in a restaurant or fast food place or even on street, although there are such products also available in frozen forms. There are some products that are packed and sold in stores too. Many Indian foods like dosa, idli, vada pav etc. will fall into this category of fast foods. Fast foods may also be consumed as meals. The distinctions are not very rigid and as will be seen below, some overlap and also aggression into other territory is seen in the market.

Different Types of Snack Foods

Potato chips or sticks are the most popular among the snack foods and dominate markets almost everywhere. Sliced potatoes are fried and salt is added making them a highly flavourful even if a nightmare for a health professional due to high level of fat, calories, sodium etc. There are many criticisms because of the health effect but due to its very high acceptability due to flavour and taste, these products dominate the snack industry. There are many variations due to the innovative shapes and size (including stackable) of the final product along with a large number of flavours including cheese, onion, barbecue, pepper, tomato, garlic, paprika and a long list of other flavours.

Corn chips, tortilla etc. are becoming significant portion of snack foods consumed. Corn is a versatile material that can be used alone or added to other ingredients including potato, rice, wheat etc. While potato chips are fragile and are easily broken, corn chips are sturdy. These can also be prepared in many sizes and shapes and flavoured in different ways. Pop corn is one of the early snack and is still popular especially while watching movies on TV or in cinema hall.

Extrusion technology gave a phenomenal boost to the snack food industry by increasing the possibility of new shapes and sizes and textures using various raw materials several folds. These snacks may be either ready to eat or ready to fry or bake and consume. Possibility of cooking while extruding and due to expanded products there is a possibility of having less oil or fat in the product that could be ready to eat. Also various flavours could be incorporated into the dough to be extruded so there is ease in processing.

Bakery products like biscuits, cookies, cakes and pastries, wafer type products, cream filled biscuits, doughnuts etc. with their multitude of variations have been another large section of snack food industry. Bread sometimes is included in this group but since most consider it as staple food consumed at regular meals it loses the snack status.

Chocolate and sugar based products also comprise a huge market with products including candy bars, various specialty chocolates, cereal based products coated with chocolate, energy bars, soft and hard candies, jujubes, lollipops, coated confections, and a large variation of all these. Here also there are products that are pure enjoyment with very less health and those that are healthy granola bars and a large number in between.

Western Snack Food Industry

The global market for savoury snacks is about \$50 billion a year with a volume of about 6 million tonnes. North America accounts for over 50% of the market followed by western Europe with about 20%. European market is dominated by UK with almost 40% followed by Germany and France. Western markets are somewhat static but strong growths are being seen in developing markets particularly in Asia. Average per capita consumption globally is 1.5kg but this varies markedly from over 9kg in the US to less than 0.5kg in India and less than 0.1kg in China. Chips and other snacks made from corn and potato account for over 60% of the market whereas nuts come a distant second with 15% and the rest consisting of various other snacks.

The global biscuit market in 2006 grew by 2.9% to reach a value of about \$24 billion. It is expected to grow to about \$30 billion by 2010-2011. Here, Europe is the leading region with about half the global market. Specialist retailers dominate the distribution channel with a share of 37.4% of the global market the rest being controlled by supermarkets. This segment includes American cookies, wafer cookies, etc.

Another big segment in snack foods is composed of confectionery market. The global confectionery market generated over \$95 billion in 2005 of which chocolate alone stood at over \$53 billion. With a growth of about 2.4% per year, the market is expected to reach over \$107 billion by 2010.

The total snack foods market comprising of all segments is expected to reach about \$280 billion by 2010. This is because the line between meals and snacks is fast fading due to innovative ideas for new opportunities in snacking. Easy on-the-go portable packs with single-serve/bite sized packs etc. adding to convenience. Health-conscious snackers demand healthy, low fat, low calories, low trans-fat, organic, fibre rich, vitamin & mineral fortified snacks while others want exotic tastes and flavours. Nuts are getting popular because of their wholesome nutrition with health benefits.

Rise in number of occasions for snacking translates into increased business opportunities. With people foraging on snacks and eating fewer full meals, snack foods are encroaching into the territory of convenience foods for breakfast and dinner. Meals cloaked as snacks in terms of convenience and portability is being used to regain some lost ground.

Asia-Pacific is the new ground for opportunity in global market. The region has high population density, rapid economic growth with growing disposable income, liberalised imports and willingness to shift from traditional to western diets. The market in this region is expected to grow by 7% giving the lead to the global market.

Indian Snacks & Industry

Snacking in India is not new. At one time there were mostly nuts or roasted pulses including chikki as well as dried fruits, but then fried snacking items became quite popular such as sev, ganthia, papdi, chivda, farsan, chaat items made from cereals and pulses. People used to eat wafers and popcorn mostly at cinemas. More recently considerable western influence has been seen with the influx of a variety of snacks including potato and corn chips variants and other salty snacks, cookies, candies, doughnuts etc. The Indian snacks have also grown and the industry is showing a very high rate of growth.

Indian snack food industry is estimated at about \$ 3 billion (more than Rs. 10,000 crores) and growing rapidly at 15 to 20%. The organised sector at one time was not significant but today produces half the snack foods.

Modern Trends

With salty snacks market worth over \$25 billion in the US and Americans having both love for salty snacks and high obesity and related health problems, the industry has led with health positioning of some kind in over 200 out of 300 savoury snack launches in first half of this year. Some of the top snacks positionings are given alongside. Some popular brands have introduced reduced salt variants with 30-50% less salt than original. Others have introduced whole grains with one chip product contains 18g whole grains per serving.

Top 15 Snacks Positionings by % (Jan 08-Aug 08)			
Positioning	%	Positioning	%
No additives/preservatives	16	Low cholesterol	5
No trans fats	13	Microwaveable	5
Vegetarian	9	Organic	4
Gluten-free	9	Children (5-12)	3
Low fat	8	Seasonal/In-Out products	3
Natural	8	Indulgence & premium	3
Halal	6	Ethical	3
Kosher	6	Souce: Innova Database	

UK has seen emergence of baked snacks against the fried that reduced fat content. Baked potato chips are oven baked giving the similar taste of standard chip but less fat and calories. There are also multigrain chips containing whole wheat, oats and corn that were launched. Some of the potato and corn chips have infused rice to give healthier variant. There is also some interest in olive oil that is considered as healthier oil with high mono-unsaturated fatty acids.

Germany differs from the US and UK markets in that a large share of market (about 30%) is taken by nuts. Chips are marginally ahead and chip makers are trying to go further ahead by introducing light, lower-fat variants as well as new products. One rice-maize snack in introduced with 70% less fat than standard. There are also gluten-free products making appearance. Some exotic flavours are being introduced like Chakalaka Spices of Africa based on traditional African sauce.

France is where nuts and extruded snacks dominate accounting for 60% of the market. Potato chips have a smaller role with 20%. Savoury snacks are traditionally used as aperitifs and not any time snacking. Things are slowly changing though. Healthier options are making appearance with one snack food having just 10%. Newer products like pumpkin seeds are also entering with spicy variants of nuts.

Healthy Trends in Snack Industry

Snack foods have been under constant attack for excess of calorie, fat including trans-fat, sugar, sodium, etc. in them. There have been many lost campaigns to avoid them or at least reduce the intakes of snack foods. So tempting are these products that people risk hypertension, obesity, cardiovascular heart diseases, diabetes etc. rather than give up these products. So finally manufacturers decided to make these products less harmful if not completely healthy by changing either their process and ingredients to reduce the harmful properties or add certain ingredients that make them less detrimental. While making them healthful, one must remember that these are popularly consumed because of their flavour, so there should be minimum reduction in that aspect while making alterations. Otherwise, consumers would reject the product.

Fat Reduction: Most snacks have the excellent flavour because of the frying. When thin slices of potato and other materials are fried they absorb up to 40% fat in the final snack. This contributed to a large intake of calories that are blamed in many ailments. Fat reduction can be achieved by using optimum frying conditions as well as using certain emulsifiers, starch derivatives etc. Using less viscous oils also give less fat absorption. Baked chips with much lower fat contents have become a huge success in European market especially in the UK.

Trans-free Snacks: Trans-fats from partially hydrogenated oils have been blamed for not only elevating the undesirable LDL cholesterol but also by reducing the desirable HDL cholesterol. Thus trans-fats are worse than saturated fats. Many health and regulatory agencies have recommended their reduction so partially hydrogenated fats are avoided in snacks. They have certain advantages in making products as they have higher solid fat index at much lower saturation; they are cheaper; they give very good shortening effect in baked goods and they do not have oily appearance in fried products. Now many labelling regulations need to declare trans-fat contents of food products so manufacturers have been substituting partially hydrogenated fats with other fats and oils blending naturally solid fats with oils and using various emulsifier systems.

Low Cholesterol: Cholesterol problems is two-fold – one with ingredients having cholesterol content and second with saturated fats producing higher levels of LDL cholesterol in body. Animal products especially eggs and dairy products commonly introduce cholesterol into food products. There are many bakery products like cakes, pastries, doughnuts, etc. made using eggs. The eggs are replaced in low cholesterol products with emulsification system using a variety of surface active agents that would do the job of eggs.

Saturated fats are also replaced with mono- and poly-unsaturated oils such as groundnut, olive, safflower, soy, sunflower, rice bran, etc. There are advantage of use of solid fats in snacks including finer qualities like crispness, brittleness, crumbly texture, etc. in savoury snacks and softness in cakes and doughnuts. Thus when oils are used for healthy reasons, it must be remembered that these products are consumed by people because they give health but because of their sensory properties. Hence, it is a challenge to maintain the original properties and use ingredients and processes that are healthy. Newer ingredients and additives provide these tools.

Salt Reduction: Savoury snacks are preferred because of their salty taste with their aroma. Salt have been implicated in hypertension and cardiovascular diseases so its reduction has been advised in daily intake. Snacks being major source, many snack manufacturers are offering low salt variation for those who want to cut their sodium intake. Some reduce the amount of salt added while others use salt substitutes. There are also subtle changes in the formulations necessitating less salt in the products.

Sugar Reduction: Many consumers are trying to restrict sugar intake for various reasons including calories, diabetes etc. Many products started appearing with low or no sugar. Use of artificial sweeteners is possible to some extent but since sugar not only contributes to sweetness but also to bulk and texture, some additional ingredients are needed that would provide the same product characteristics. Indians like more sweetness in their sweets than others making the change even more difficult.

Healthy Ingredients: Making healthier snacks can be in two ways. One can reduce the unhealthy properties or ingredients in them such as fat, salt, sugar etc. Secondly one can also add healthy ingredients to the product making it healthy. Vitamins, minerals and other nutrients have been earlier added but adding functional ingredients is the new trend. Many nutraceuticals added to foods provide health by preventing the disease and making the product a functional food.

Fibre has become important in many snacks and can be easily derived from many whole grains like wheat, oats and some of the pulses. Fibre and whole grains have shown effectiveness in reducing risks due to heart disease, stroke, cancer, diabetes, obesity, hypertension etc. This has encouraged many manufacturers to use in their snacks not only whole grains but multi-grains to derive additional benefits. Many health recommendations have suggested intakes of 25 to 30 g fibre per day and snacks offer one interesting way.

There are already potato corn chips having rice and other grains incorporated but in many extruded products the addition of whole grains is much easier although it will still affect the taste as well as texture to some extent. In bakery product, gluten formation is affected by fibre and leavening is also much less. Process changes involving mechanical working using high speed mixers are needed to get the same texture and expansion.

Some of the other ingredients added include seeds of sunflower, pumpkin, flax as well as fruits and vegetables that provide many health giving substances including antioxidants, omega-3 fatty acids, prebiotics, and others.

Snacking Meals

Snacks are now slowly making inroads to restaurants and fast food menus from its traditional local convenience store location. Even convenience stores are selling snacks that may replace the fast foods. Rather than larger bags, individually wrapped snacks are so easy to take and consume on the run. Smaller packs also give a feeling of not too many calories with a 90 calorie snack pack. Health bars are selling more than ever with low fat/low calorie/high fibre types.

Many snack makers are offering snacks that are easily portable in a car. They are also packed in 'road ready container' and fits into an auto-cup holder, where coffee or soft drink used to fit. Of course, fast food companies are also catching on and are making fry containers that fit into auto-cup holder as well.

Smaller packs have other advantages also. When one buys a big pack contents are same. Offering two, three or four different small pack variants will not only give someone different tastes while eating the snacks but also they could share them with others. Fast foods also have started this by offering smaller burgers, smaller pizza etc. so one can get many tastes and flavours at one sitting.

With the different style of working, especially with call centres and even many outsourced businesses, the timings have gone haywire. There are no fixed times for lunch, tea etc. so sometimes people may get opportunity to eat at 3 in the afternoon. This may not be a time for regular meal so snacking or fast food eating takes place. Snacks and fast foods are getting interchanged. One can get fast

foods that are packed and sold in a store while many fast food restaurants are offering snacks that are freshly made like freshly baked cookies in a short time that it takes to order a burger.

Finally

Americans are biggest snack consumers and have shown lately to have the most health problems related to weight, diabetes, cancer and heart. They have started to look for the healthier snacks rather than cut down snacks. Snacks are very enticing and with the changing lifestyle with more meetings, leisure, parties and celebrations, the snacks are going to be consumed even more. As manufacturers have come up with healthier options there is going to be even greater boost to the snack food industry as those who only care for taste of foods will continue to munch on traditional snacks with high fat, salt and sugar. Those who worry may switch to healthier snacks to feel less guilty. Still those who avoided snacks because they were not healthy, will now offer a new market, as they would not consider healthier snacks as something to be avoided.
