



ENTREPRENEURSHIP IN FOOD PRESERVATION AND BAKERY PRODUCTS

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Abstract:

Bakery products are the important food material in various country and cultures. Breads form the major baked foods accounting for over 80% total bakery products. Bread products are easily subjected to microbial spoilage. Spoiled food may be defined as a food that has been damaged or injured so as to make it undesirable for human consumption. Bakery products are an important part of a balanced diet and a wide variety of such products can be found on supermarket shelves. However, bakery products, like many processed foods, are subject to physical, chemical and microbiological spoilage. Black bread mold is commonly found on bread surface. The black bread mold is takes its nutrients from bread surface and cause the spoilage of bread. Preservatives are added to increase the shelf life to the bread and inhibit mold growth. Calcium propionate is an antifungal that is added to the bread product to prevent the black bread mold growth and used as a preservative in breads and other baked goods. Many industrially produced baked goods emerge from the baking process with a surface that is essentially sterile but post bake handling can quickly lead to fungal, microbial surface contamination as a result of exposure to airborne contaminants as well as equipment contact.

Key words: Bakery product, food, preservative, contaminants, airborne.

Introduction:

Baked foods are the staple foods that are consumed by the people all over the world, since from the age old time. The production of bread is easy and can be practiced in all environmental conditions. Bread is highly perishable under humid condition, which paves way for fungi to grow over it and causes spoilage. Generally in baking industries, propionic acid a chemical preservative is added to prevent the spoilage of bread by moulds, which is not preferred by the consumers. Decline in the consumption pattern of bread is seen due to the changing food habits and breakfast cereals. New varieties of baked products with less calories, more fiber, less salts and additives are getting more attention among consumers around the globe. Bread product among the world vary in color, taste, texture, shape, size due to production techniques, types of flour, leavening agents and salts . Microbial spoilage affects the perceived freshness of the bread and the most common microbial spoilage arises from mold growth; causes lot of economic loss in the food industry.

Bakery products and cereals are a valuable source of nutrients in our diet providing us with most of our food calories and approximately half of our protein requirements. Cereals have been a basic food of man since prehistoric times and were consumed long before bread making was developed. Variety breads and other bakery products have increased in sales volume within the past decades. The nutrients in

bakery products are carbohydrates, proteins, lipids, vitamins and minerals. Bakery industry in India is the largest of the food industries with an annual turnover of about B 3000 crores. India is the second largest producer of biscuits after USA. The biscuit industry in India comprises of organized and unorganized sectors. Breads and biscuits form the major baked foods accounting for over 80 per cent of total bakery products produced in the country. The quantities of bread and biscuits produced are more or less the same.

The contributing factors were urbanization, resulting in increased demand for ready to eat products at reasonable costs etc. Importance of bakery products has expanded especially the use of whole and natural grains and other natural ingredients. Furthermore, bakery products are considered as a source of carbohydrates because starch is the main chemical constituent.

Commercially produced and properly handled bread generally lacks sufficient amounts of moisture to slow growth of any microorganisms except moulds. As normal cooking temperature destroy fungal spores, post-process contamination from airborne spores and contact with contamination surfaces must be prevented. Bakery products are subjected to spoilage problems. These include physical, chemical and microbial spoilage. Since the most common factor of bakery products is water activity, microbiological spoilage, in particular mould growth is the major economical importance of

bakery products. Mould spoilage is a serious and costly problem for bakeries.

Recent trends in bakery industry are to reduce chemical preservatives and minimal processing. Natural preservation includes the use of lactic acid bacteria, acetic acid and plant extracts against microbial spoilage). Black bread mold does not always result in the health problems. The average healthy person's immune system usually provides protection from harmful effects of mold. Most health problems caused by mold are from allergic reactions to it. When mold cell landed in the respiratory tract, the body's immune system response to those invading and cause allergic illness. The resulting symptoms included runny nose, scratchy throat, asthma and sneezing. When the food is to be stored for a long period, additives and preservatives are used to keep quality and flavor. The additives and preservatives prevent the excess water in the foods causing bacteria and fungal growth.

Food can be classified as fast food, junk food, whole food, organic food out of these whole food is unprocessed, unrefined so it has very short shelf life .Nowadays Mostly all food products have food preservatives. The purpose is generally to preserve the natural characteristics of food and to increase the shelf life of food, and inhibit natural ageing and discoloration that can occur during food preparation such as the enzymatic browning reaction in apples after they are cut.

A preservative is defined as any substance which is capable of inhibiting, retarding, or arresting, the growth of micro-organisms, of any deterioration of food due to micro-organisms, or of masking the evidence of any such deterioration. It is estimated that nearly one fifth of the world's food is lost by microbial spoilage. Chemical preservatives interfere with the cell membrane of micro-organisms, their enzymes, or their genetic mechanisms. The compounds used as preservatives include natural preservatives, such as sugar, salt, acids, etc, as well as synthetic preservatives. The safe-use period of many foods is greatly extended through the addition of preservatives, which retard spoilage, preserve flavour and colour and keep oils from turning rancid. Preservatives protect foods, such as cured meats, from developing dangerous toxins, such as botulism, a food poisoning illness.

Nowadays, most people tend to eat the ready-made foods available in the market, rather than preparing them at home. Such

foods contain some kind of additives and preservatives, so that their quality and flavour is maintained and they are not spoiled by bacteria and yeasts. More than 3000 additives and preservatives are available in the market, which are used as antioxidants and antimicrobial agents. Some of the commonly used food additives and preservatives are aluminum silicate, amino acid compounds, ammonium carbonates, sodium nitrate, propyl gallate, butylated hydrozyl toluene (BHT), butylated hydroxyanisole (BHA), monosodium glutamate, white sugar, salt, potassium bromate, potassium sorbate and sodium benzoate. Some artificial colours are also added to the foods to give them an appealing look. Some of these colouring substances are erythrosine (red), cantaxanthin (orange), amaranth (Azoic red), tartrazine (Azoic yellow) and annatto bixine (yellow orange).

When the food is to be stored for a prolonged period, use of additives and preservatives is essential in order to maintain its quality, wholesomeness, taste, appearance and flavour. The excess water in the foods can cause the growth and proliferation of bacteria, fungi and yeasts and hence food spoilage. Use of additives and preservatives prevents spoiling of the foods due to the growth of bacteria and fungi. Additives and preservatives maintain the quality and consistency of the foods. They also maintain palatability and wholesomeness of the food, improve or maintain its nutritional value, control appropriate pH, provide leavening and colour, and enhance its flavour.

The importance of preserving food is that, it lengthens the shelf life of a food and it slows down the spoilage of food which is caused by microorganisms present in the container or the hands that held it before putting it inside a container. The importance of food preservation is so that the food cannot be spoilt or can cause illness. Although preservatives are essential to maintain food safety, too much of a good thing is not healthy. Besides allergies, these foods may cause stomach pains, vomiting, breathing problems, hives and skin rashes. Some of the worst additives include benzoates, which can cause skin rashes, asthma and perhaps brain damage. Bromates can cause nausea and diarrhea. Saccharin may lead to toxic reactions that impact the gastrointestinal tract and heart, as well as cause tumors and bladder cancer

There are certain harmful effects of using chemicals for preservation such as ;Sulfites are common preservatives used in various fruits, may have side effects in form of headaches, palpitations, allergies, and even cancer. Nitrates and Nitrites: These additives are used as curing agents in meat products. It gets converted into nitrous acid when consumed and is suspected of causing stomach cancer. Benzoates are used in foods as antimicrobial preservatives, and have been suspected to cause allergies, asthma and skin rashes. Sorbates /sorbic acid are added to foods as antimicrobial preservatives. Reactions to sorbate are rare, but have included reports of urticaria and contact dermatitis. Also a nuclear radiation when used for preservation does not make foods radioactive, but may cause changes in food color or texture. After consuming certain foods if it causes allergy that can be noticed but some people develop the symptoms of allergy day or two later, so it is difficult to know what is causing the problem. People consume variety of foods so it is difficult to find out the exact substance which causes allergy. For this reason people have to go on an elimination diet. They stop eating all foods that might be problematic and introduce one at a time to see if side reaction occurs. Side reactions of these preservatives can be immediate or build up in the body over time.

Conclusion:

Losses due to mold spoilage have been resulting in lost revenue to the baking industries. Therefore, methods to control mold growth and to extend the shelf life of bakery products is of great economic importance to the banking industry where an increased demand in global consumption exists. In order to increase the shelf life and maintain the

quality certain preservatives are used these preservatives may have some harmful effects so if possible, and foods without preservatives may be used. Other measures as good hygiene in the bakeries and if necessary complementary post packaging heat treatments or modified atmosphere packaging is the best alternatives.

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