VALUE ADDITION OF FOOD PRODUCTS

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ABSTRACT

India has always been pinned as one of the greatest agriculture-based countries of the world. A large section of its economy is generated through agriculture produce and manufacture. In spite of the large produce, India has not been able to harness completely the power of food processing and value addition. The different kinds of losses incurred during the processing activities cause the loss of essential nutrients from the food products. This research will deal with the different ways in which the food products can be enhanced in terms of nutrient value and quality. Food fortification, enrichment, preservation, etc. are some of the techniques which should be adopted in order to promote the idea of value addition of food products in the food processing industries. Since, in today’s jet age lifestyle, we not only need food products which are sustainably produced but those products which have a high nutrient-value, focusing on value addition of food products is the need of the hour.

Keywords: Fortification, enrichment, preservation.

1. INTRODUCTION

The agriculture sector of India has always been recognized as one of its best and largest economy-generating sectors. However, the same cannot be said for what follows the sector- the industrial segment of agricultural products. One cannot categorize the native food industries as nascent because they have had a substantial period for growth; rather the growth has now become stagnant. When the world is demanding more and more advancements and arduous procedures to generate nutrient-rich and highly economical food products, India has taken a back seat in this sphere. We do not lack in terms of production but in terms of food processing [1].

Food processing, and marketing are important for the following reasons:

a) It enables effective substitution of imported food products.

b) It adds value and increases farmers’ returns on their produce

c) It expands market opportunities

d) It improves shelf life to overcome seasonality and perishability

e) Post harvest processing, handling and marketing, increases food availability at household and community levels, and thus contributes to food security.

The food processing sector is constrained by: inadequate processing methods, lack of access to equipment and packaging, weak linkages with producers and poor marketing skills. The sector remains largely unexploited, allowing imported foods to dominate internal markets.

2. CONSTRAINTS RELATED TO FOOD PROCESSING AND MARKETING

Rudimentary technologies: There is insufficient capacity to acquire or fabricate food processing equipment locally. These resources are not utilized efficiently in terms of transferring skills and technology to local artisans.

Inconsistent quality and quantity: The quality produced by the industries is weakening at a steady rate. In order to meet the specific levels of quality set by different standards, the industries compromise on quality as well as quantity.
Safety and quality constraints: There is little effort to integrate good practices in production practices, handling activities, storage areas, etc. Most processing facilities have not established modern food safety/quality management systems.

Poor linkages between producers and processors: The major constraint faced by medium scale processing establishments is the weak linkage between producers and processors. Ultimately, this translates into high operational costs that processors pass on to consumers.

Lack of innovativeness and product diversification: There is lack of innovation and product development in the food processing sector.

Lack of technical expertise: Development of new skills which dovetail with the current needs of the generation is required at every level.

Inadequate artisanal skills: Local artisans are not adequately equipped with tools and skills to repair or maintain the existing food processing equipment.

Inadequate supply of appropriate packaging: Local supply of packaging materials is inconsistent in terms of specifications, quantities and safety.

Poor processing methods: Many of food enterprises use poor processing methods, resulting in food products of inferior quality.

Poor market analysis: There is generally little effort to analyze market requirements and consumer expectations. As a result, production is not market oriented and products do not meet consumer expectations.

Thus, out of the aforesaid issues, this paper would deal with the nutrient value of the food products being manufactured in the industries and how they can be enhanced with the different techniques of value-addition. The objective of this study is to focus on one of the important factors concerning food nutrition and adequate food productivity - value addition of food products. The specific objectives of this study were to develop a value adding strategy through food processing, new product development, food safety and quality management [2].

3. WHAT IS “SUSTAINABLE NUTRITION SECURITY”?

As a background to discussing “Sustainable Nutrition Security” it is important to distinguish between food security and nutrition security. These are two quite different terms, but often used interchangeably in the literature. The “food security” element is derived from the widely-used definition of food security stemming from the 1996 FAO World Food Summit, where it is defined as the state or condition wherein:

All people, at all times, have physical, economic and social access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life.

The “nutrition security” element underscores the more general context needed, as reinforced by the recent Lancet Series (Horton and Lo, 2013). These two elements are brought together in the prevailing definition of food and nutrition security (FNS), which states that FNS exists when:

All people at all times have physical, social and economic access to food, which is safe and consumed in sufficient quantity and quality to meet their dietary needs and food preferences, and is supported by an environment of adequate sanitation, health services and care, allowing for a healthy and active life [3].

4. WHAT IS VALUE ADDITION OF FOOD PRODUCTS?

Value-Addition is the process of taking a raw commodity and changing its form to produce a high quality end product. Value-Added is defined as the addition of time, place, and/or form utility to a commodity in order to meet the tastes/preferences of consumers. In other words, value-added is figuring out what consumers want, when they want it, and where they want it – then make it and provide it to them. Thus, value addition in food products will result in nutrient-rich products which have a higher degree of quality, meet the standards set by different authorities and are safer for consumption. Sometimes, value addition can be done purely for commercial gains whereas sometimes it can be done for nutrient augmentation of the food product.
5. METHODS FOLLOWED FOR VALUE ADDITION OF FOOD PRODUCTS

5.1 Food Fortification

Food fortification is the process of adding micronutrients (essential trace elements and vitamins) to food. It may be a purely commercial choice to provide extra nutrients in a food, while other times it is a public health policy which aims to reduce the number of people with dietary deficiencies within a population. Diets that lack variety can be deficient in certain nutrients. Sometimes the staple foods of a region can lack particular nutrients, due to the soil of the region or because of the inherent inadequacy of the normal diet.

The four main methods of food fortification (named as to indicate the procedure that is used in order to fortify the food):

1. Bio-fortification (i.e. breeding crops to increase their nutritional value, which can include both conventional selective breeding, and modern genetic modification)
2. Synthetic biology (i.e. addition of pro-biotic bacteria to foods)
3. Commercial and industrial fortification (i.e. flour, rice, oils (common cooking foods))
4. Home fortification (e.g. vitamin D drops)

Some examples of food fortification are Iodized Salts, Folic Acid, Niacin, Vitamin D, Fluoride, Golden Rice, White Rice, etc.

5.2 Food Enrichment

An enriched food is a food to which nutrients have been added. Typically, the added nutrients were present in the food in its original form, but were removed at some point during processing. White bread -- to which certain vitamins are added after the bleaching process depletes them -- is a commonly-consumed enriched food.

While it is true that both fortification and enrichment refer to the addition of nutrients to food, the true definitions do slightly vary. As defined by the World Health Organization (WHO) and the Food and Agricultural Organization of the United Nations (FAO), fortification refers to "the practice of deliberately increasing the content of an essential micronutrient, i.e. vitamins and minerals (including trace elements) in a food irrespective of whether the nutrients were originally in the food before processing or not, so as to improve the nutritional quality of the food supply and to provide a public health benefit with minimal risk to health," whereas enrichment is defined as "synonymous with fortification and refers to the addition of micronutrients to a food which are lost during processing.

5.3 Packaging

This is an important technological issue which plays a key role in preserving the quality of processed products, extending shelf life and facilitating distribution, while also enhancing presentation and marketability. Although packaging does not directly yield any value addition in the food products, it acts as the preserver of the existing quality of the products. One should make sure that the final products are not tempered with while packaging is being done. Also, the materials used for packaging should be in coherence with the food product and not have any adverse effect on its quality.

5.4 Innovation

Agri-food processors have to recognize the rapidly changing context in which they are operating where profitability and competitiveness depend on their ability to develop innovative products and adopt appropriate technological processes to produce products in line with market requirements. Through innovation, cheaper and more efficient technologies are developed, while new or modified products are introduced to adjust to changes in consumer preferences, improve shelf life, reduce postharvest losses and enhance product quality and safety. Networks are being created for exchanging and sharing information and expertise on innovation, while support is provided to member states to strengthen their policies and institutions to support the adoption of innovative practices.
5.5 Organic Food

The national capacity can be developed in organic food production as the nutrient content of organic foods is very high. The organic foods are native and can be processed very well by the basic knowledge of the native crops. Organic foods have a longer shelf life as the amount of chemicals present in them are minimum and thus, are easy to manage, high on nutrients and highly valued.

5.6 Preservation

Some forms of preservatives also maintain nutrient level in the food. After foods and vegetables are harvested, they begin to lose their nutritional quality. Freezing or canning can conserve some nutrients in the food items. Despite the common belief, canned foods are not necessarily less nutritious than their fresh or frozen counterparts. Factors such as when the produce was harvested, how long had it been stored and how it will be prepared determine whether the fresh, frozen or canned version of a food is most nutritious [4].

6. CONCLUSION

Thus, value addition is a technique which should be readily used in today’s generation. With the advent of ready-to-cook foods, it is highly essential that a technology and set of guidelines are set up for the nutrient requirements of any food product. Also, it does not only help in nutrient enhancement but also in reducing the post production losses. Thereby, the idea of value addition should be incorporated in the current food processing industries and new innovations should be made so as to produce a better quality and a more economical product.

REFERENCES

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