

New Saffron Products and Food Technology

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Abstract

In many countries today we are witnessing a continuous increase in the production and variety of food products. This makes innovation and application of new technologies unavoidable. On the other hand, as a result and because of the modern industrial methods, the food chain has become much more complex, increasing the possibility of chemical contamination of food products. Modern applied research methods are an essential part of the technology to produce ready- and semi-ready-to-use saffron products of nutritious value in order to satisfy the potential needs of consumers. Saffron is a natural organic colorant and unlike other plant colorants it is highly permanent and does not fade easily; in fact it is mainly used because of its high coloring power. Therefore it has many applications in water environments and its use in the food industry is quite economical.

For the above reasons, there is a day growing trend of using saffron in food technology and formulation of new saffron products such as: saffron dessert powder, saffron crème caramel powder, saffron beverage powder, saffron cake mix, saffron cream powder, saffron batter powder, different semi-ready to use saffron soups and different saffron spice mixtures.

INTRODUCTION

Although the food industry, like many other areas of science and technology, has its beginnings in crude methods, it has today become not only quite sophisticated but also plays a very important role in developments in related areas of knowledge.

In addition to being an important element of the economy of nations, food technology today provides the masses of the human community with their daily nourishment, and all nations are dependent on the products of the food processing industry. It is therefore essential not just to rely on experience and traditions but to improve on these and find new ways by using experts and knowledge from such fields as chemistry, microbiology, nutrition science, food engineering, economics and management (Dokhani and Maleki, 1991).

It should be remembered that man does not eat just to stay alive and that enjoyment is no less important than nutritious value. This entails palatability and variety, which needs can be met by creating new products, especially with natural ingredients.

In Many parts of the world today we are witnessing continuous increases in food production, both in the quantity produced and in the variety of products. This makes innovation and application of new technologies unavoidable. On the other hand, in spite of modern industrial methods the food chain has become more complex, increasing the possibility of chemical contamination of food products.

The present day consumer, however, is knowledgeable and is sensitive to all details involving the production of foodstuffs, from fertilizers, pesticides and hormones to chemicals, colorants and flavoring. Consequently, there is a rising trend of using natural and plant substances and replacing chemical and synthetic food additives with natural ones. In view of these facts and the banning or restrictions on the use of chemical colorants because of their serious health hazards, saffron (the dried stigmas of the "*Crocus sativus*" flower) is the ideal natural substitute in food technology as colorant, flavoring and aromatic.

SAFFRON AND FOOD TECHNOLOGY

Saffron is a member of the "*Iridiceae*" family that grows best in a Mediterranean climate, principally western Asia, latitudes 30 to 50 and longitudes 10 to 80. It flourishes in areas with little rainfall, cold winters and hot summers (Kafi, 2003).

Saffron, the world's highest priced agricultural and pharmaceutical product, has a very significant position among Iran's industrial and export products, and with about 50,000 hectares under cultivation Iran is the world's leader in production and export of saffron, producing more than 90% of the earth's annual total (Table 1).

Saffron is a natural organic colorant and unlike other plant colorants it is highly permanent and does not fade easily; in fact it is mainly used because of its high coloring power. "*Crocin*" makes up 40-45% of the glycosyl esters in saffron; it is the principle water-soluble carotenoid glycosyl ester contained in saffron (Negbi, 1999). "*Crocin*" is highly soluble in water and a small quantity of the pigment produces a strong color. Therefore it has many applications in water environments and its use in the food industry is quite economical.

For the above reasons, there is a day growing trend of using saffron in food technology and formulation of new saffron products because this valuable spice not only gives a very desirable flavor, color and aroma to food, but also because of its medicinal properties, which are beneficial to health.

A coordinated and comprehensive program is of great importance in all food chains. The food chain or channel is the relationship between living things and human beings, starting at the food producer and continuing to the last living thing that consumes the product. Therefore, proper technological planning can help towards increasing and enhancing the quantity, healthfulness and hygiene of food produced.

Because saffron is a delicate and sensitive substance and because of many people's lack of knowledge about its varied applications and how to use it, many consumers are still unaware and do not benefit from the advantages of using this unique product.

Using modern technology to produce ready-or semi-ready-to use food products containing saffron or to create new products of this sort is something quite new. And since the nutritious value of such products is highly important (Table 2), it is necessary to use modern applied research methods in order to satisfy the potential needs of consumers. The advantages that lie in this include the healthfulness of such products, growth in the agricultural sector, job creation and rise in income.

Novin Saffron company, with long experience in the production and export of saffron, and with the goals of innovation meeting the potential needs of consumers, and making optimum use of resources, has started for the first time in the world the creation and industrial production of different saffron products.

These products, now available to domestic consumers, have been designed and developed by taking into account consumer opinion survey, test panel results, and total compliance with all hygiene and safety criteria; all hygiene and production licenses have been obtained, and the necessary resources provide; and the required specialized machinery has been designed. The graph (Figure1) shows the results of a survey on consumer preferences for a number of products.

Using modern industrial systems, such products as saffron dessert powder, saffron crème caramel powder, saffron beverage powder, saffron cake mix, saffron cream powder, saffron batter powder, different semi-ready to use saffron soups and different saffron spice mixtures for a variety of uses have been produced and offered to consumers.

CONCLUSIONS

In conclusion it must be pointed out that in spite of all the progress in the food industry, we still have a long way to go before completely meeting the needs and expectations of humankind. Along this road, and in order to contribute to better nourishment for all, attention must be paid to producing food with better nutritious properties, preservation of the natural flavor of food and making optimum use of natural food substance such as saffron.

“Saffron has the taste of joy, the smell of love and the color of life”.

Literature Cited

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Tables

Table 1. World production of saffron crop year 1999-2000

Country	Production Tons/year	Percentage of word production
Iran	170	90.4%
Greece	8	4.3%
Spain	4	2.1%
Morocco	2	1.1%
Other Countries	4	2.1%

Table 2. Nutritious value of some new saffron products per 100 gr. powder

Product	Energy KCal	Carbohydrate gr	Protein gr	Fat gr	Ca mg	P mg	Fe mg	K mg	Na mg
Saffron Cake	569	63	5	2.5	41	61	4	94	16
Saffron Pudding	391	87	9	2.2	7.5	680	-	14	49
Saffron Crème Caramel	450	76	11	10	134	115	2	188	87
Saffron Jelly	375	86	11	-	2.2	2.4	5	5	13
Saffron Batter Mixture	366	73	10	3	117	114	7	182	381

Figures



Fig. 1. Results of a survey on consumer preferences for a number of new saffron products in year 2003.