USE OF VEGETABLE PROTEINS FOR ENRICHMENT OF PASTA PRODUCTS

THESIS

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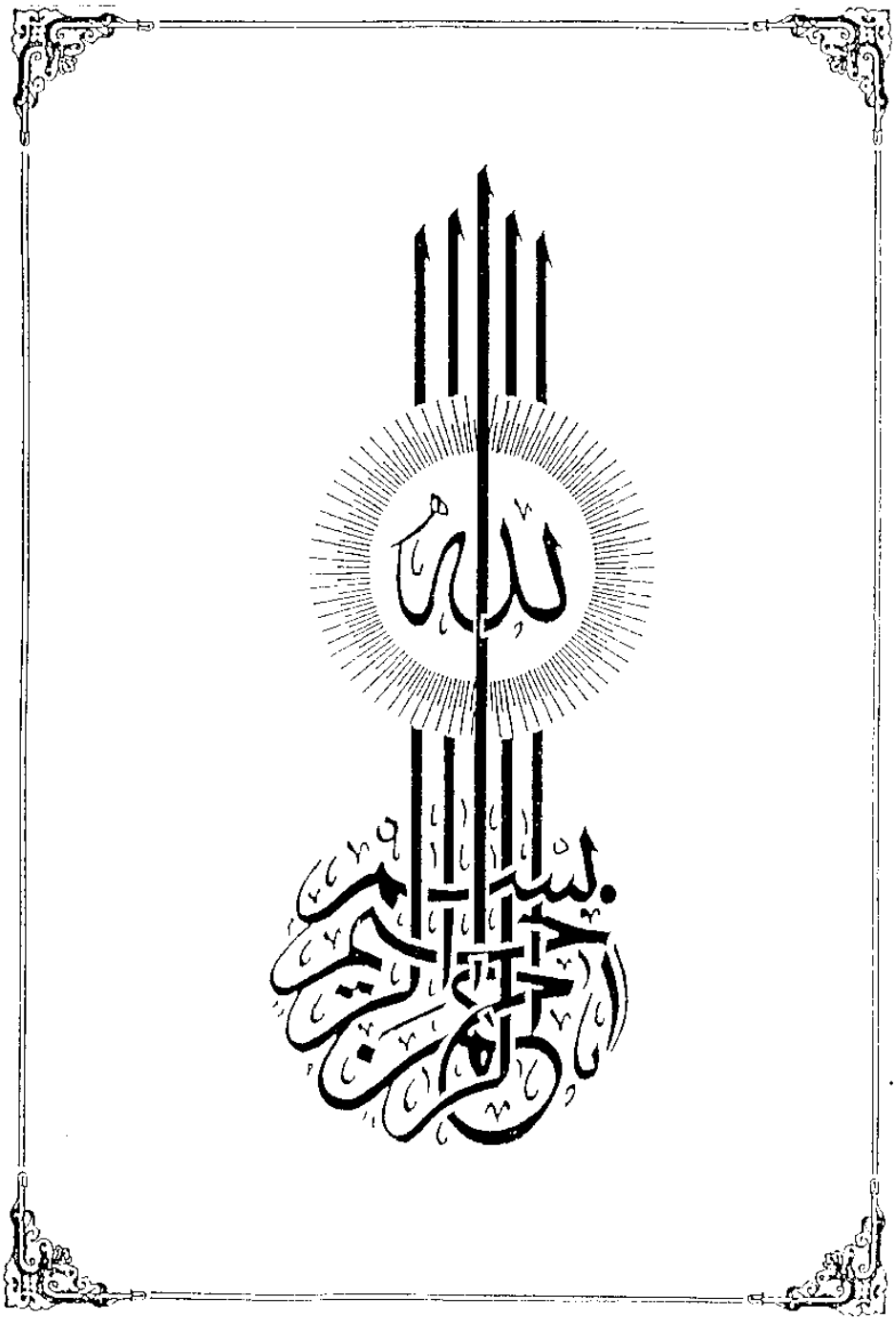

Subject :

Use of Vegetable Proteins For Enrichment of Pasta Products

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INTRODUCTION

The world-wide growing interest in unconventional protein sources came as a result of the widening in the gap between the nutritional requirements and the actual consumption of protein, especially in developing countries. Protein deficiency has shown its marks on the health and the working efficiency of a big sector of the population. Protein-energy- malnutrition not only increases susceptibility to acute and chronic infection, but also causes a compensatory reduction in the capacity of physical activity and promotes mental deficiency.

The protein situation in the world can be categorised into:

- People living in industrialized countries and have enough protein supplied by milk, eggs, and meat. Those people have nutritional knowledge as well as the ability to buy.

- People living in countries having enough protein in quantity but not in quality.

- Those who have neither enough quantity nor good quality of proteins and lack the ability to buy animal protein.

The last group is the most affected [Senez {1976}].

Several proposals have been suggested by the Protein Advisory Group of the United Nations (1968), to bridge the protein gap in developing countries :

- Increase in the direct food use of oilseeds and oilseed protein concentrates and protein isolates.

- Promotion of the production and use of fish protein concentrates.

- Increase in the production and use of synthetic amino acids.

- promotion of the development of single-cell protein for both animal feeding and direct human consumption.

An adequate diet comprises calories, proteins, water, vitamins, and minerals, plus the sensory stimuli and sensory properties of food being treated collectively as an essential nutrient. Cost is another criteria that must be put into consideration while talking of an adequate diet.

From the nutritional standpoints, Egypt is more fortunate than many of the other developing countries concerning the total calorie intake. Total calories in daily diet of an average Egyptian is 2580, compared to 3110 in the United States, but the quantity of food consumption pattern in current Food Supplies of Egypt is critical. Reports of the Protein Advisory Group of the United Nations (1968), on Egyptian supplies reveal that an average of 67% of the daily protein consumption (76 gram / person / day) came from cereals, 16% from legumes, vegetables and fruits, and 17% as animal protein.

Cereals and cereal products are widely consumed as a source of energy and protein. Wheat protein not only comprises only about 11% of the whole composition, but it is also low in its nutritional quality because it is deficient in some of the essential amino acids mainly lysine. If wheat protein is to be supplemented with the limiting amino acids, its nutritional quality would be improved tremendously. This can be done either by the addition of synthetic amino acids, or preferable by blending with other pro-

tein sources e.g. legumes, oilseeds,etc. Food products made from wheat have several forms of which bread is the most popular. However, pasta products are well known and are becoming increasingly part of man's diet.

Italy is considered the motherland of pasta products, although it is believed that pasta originated in both Italy and China. Italy produces and consumes large quantities of pasta products. The per capita consumption of pasta products naturally varies throughout the world. However, as expected, Italy leads the world consumption, followed by France, USA and then England. The consumption of pasta products, mainly macaroni, in Egypt varies according to different places.

Pasta products e.g. macaroni, noodles, spaghetti, canelloni, ravioli etc. form a class of favoured foods especially for children. They are inexpensive, easy to prepare, shelf stable, and can be served in many different ways.

Macaroni dishes started spreading in Egypt several decades ago, and was at frist consumed as a secondary meal beside the principal meal . Nowadays macaroni is being consumed as the principal meal in many Egyptian households. As a result of the increasing consumption of macaroni in Egypt, many factories were established in the last two decades, both of the governmental sector and the private sector, to produce macaroni of different shapes e.g. sphagetti, noodles, shells, spirals etc.

Basically the production process for macaroni products consists of adding water to flour or semolina in such quantities as to produce a mixture of 31% moisture, mixing these ingredients together for a short period of time,kneading the dough to obtain an elastic, homogenous mass and then