

METHOD OF PREPARING NUTRIFIED FOOD PRODUCTS

This application is a continuation-in-part of Ser. No. 07/604,665, filed Oct. 26, 1990 which is now U.S. Pat. No. 5,132,113.

BACKGROUND OF THE INVENTION

Human nutrition requires a source of the components of protein, carbohydrates, lipids, vitamins and minerals. Many and varied sources for these nutrient materials have been utilized in the prior art. The prior art does not disclose the concept of providing a balanced supply of nutrients which permits substantially improved absorption of the nutrients which are administered to an individual.

For some time now, it has been apparent that the solution to the world's requirement for a nourishing food supply will partly depend on maximizing the combined benefits from food technology and nutritional knowledge, and adapting these benefits toward human needs. Among the nutritional interventions to be considered in a nutritional program is food nutrification, defined as the addition of one or more nutrients to one or more commonly consumed foods or food mixtures. If properly introduced and controlled, it can improve the dietary intake of a given population. The process of "nutrification" simply makes a food more nutritious. Over the past two decades, a number of articles have been published on the merit of nutrification of foods. Nutrification is the most rapidly applied, most flexible, and most socially acceptable intervention method of changing the nutrient intake of a given population without a vast educational effort or change in the current food intake pattern. However, the tremendous potential offered by wise utilization of industrially produced nutrients, vitamins, minerals, amino acids, and protein isolates has rarely been fully utilized. The present invention provides amino acid supplements that are specially prepared for different foods. Each supplement is formulated to substantially improve the nutritional value of a given food's protein. The nutrification concept of the invention has been proven with bovine milk and soybean flour.

U.S. Pat. No. 3,697,287 disclose an amino acid food composition which is described as a palatable mixture of the essential and non-essential amino acids, minerals, vitamins, carbohydrates and fats. That composition contains essential and non-essential amino acids. The essential amino acids in such a composition are present in the following ratios:

L-valine	1.0
L-arginine	1.77
L-isoleucine	.91
L-lysine	1.03
L-phenylalanine	1.03
L-histidine	.44
L-leucine	1.43
L-methionine	.93
L-threonine	.91
L-tryptophan	.28

I have discovered that the addition of certain amino acids to food compositions to provide a resulting specific proportion of the essential amino acids will make

possible a higher NNU as compared to an unnutrified food.

It is also an object of the invention to provide an improved amino acid modified nutrient composition.

It is also an object of the invention to provide an amino acid modified composition for use as a supplement, source and/or complement to foodstuffs such as flours, dry milk solids, casein liquids, soft drinks, alcoholic drinks and the like to provide or increase the net nitrogen utilization (NNU).

It is also an object of the invention to provide an amino acid modified composition which has a ratio of essential amino acids that will provide a higher net nitrogen utilization (NNU) as compared to unnutrified foods.

These and other objects of the invention will become apparent from the appended specification.

SUMMARY OF THE INVENTION

The invention comprises a novel method of enhancing the nutritional value of foods by the addition of specific amounts of essential amino acids to foods. Each food will require different amounts of essential amino acids based on the essential amino acid content of the food which is nutrified. This process of nutrification is based on the addition of a complementary quantity of essential amino acids which when combined with the quantity of essential amino acids which are present in the particular food will provide a product that will contain a total quantity of essential amino acids which will approximate the amounts of essential amino acids which are set forth in the following formula:

isoleucine	0.608-2.470
leucine	0.913-4.102
lysine	0.630-3.538
methionine	0.116-1.167
phenylalanine	0.421-1.971
threonine	0.485-1.930
tryptophan	0.104-0.700
valine	0.630-2.850

in amounts relative to one another which will provide a net nitrogen utilization (NNU) which is measurably higher than the unnutrified food. The composition may also contain added carbohydrates and essential Fatty Acid (EFA) sources, vitamins and/or minerals.

The nutrified compositions may have a total quantity of 1 Kcal to 250 Kcal per gram of amino acids.

The preferred ranges of protein free carbohydrate and highly polyunsaturated vegetable fat are 0-99 wt. %, protein-free carbohydrate and 99-0 wt. % highly polysaturated vegetable fat.

The nutrified compositions of the invention provide a higher Net Nitrogen Utilization than the base food material which has not been nutrified according to the invention. The specific nutrified foods of the invention which contain added carbohydrate and polyunsaturated vegetable fat have particular use in providing energy and Essential Fatty Acids (EFA), for prevention or treatment of Protein-Calorie Malnutrition (PCM). In particular, these compositions may be used when further energy and EFA intake is required, and specifically as a source of amino acid and calorie intake for supportive nutrition in the case of cancer, AIDS, trauma due to burns, surgery or in disease, such as renal disorders, liver disorders, diabetes mellitus, gout, and the like.