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A REVIEW ARTICLE ON ROLE OF NUTRACEUTICAL AS DIETRY SUPPYMENT AND THEIR INGREDIENT

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ABSTRACT

Nutraceuticals are essential food constituents that provide nutritional benefits as well as medicinal effects. Nutraceuticals often possess unique chemical action that are unavailable in pharmaceuticals. The entire world is fighting diseases characteristics of the modern age such as obesity, osteoporosis, dancer, diabetes, allergies, and dental problems. The era of emergence of nutrients as medicines in the pharmaceutical world is of great importance and draws attention of scientists and researchers toward the appreciable benefits. The history and discovery has explored many facts about the remarkably profound therapeutic activities of such agents. As a result, interdisciplinary approaches are now been applied to design and develop various dosage forms to deliver these herbal products relative to their applications. Nutraceutical is a type of food supplement which treat and maintant different type of disease and also help in medical health benefits.

KEYWORD: Nutraceuticals, Treatment, Dietary supplement, Nutrient, Medicine functional foods.

INTRODUCTION

Today the exploration and exploitation of the disease fighting properties of a multitude of photochemical found in both food and non food plants have created a renaissance in human health health and nutrition research. Nutraceuticals are known as bioactive substances that are present in common food or botanical-based sources that can be delivered in the form of

dietary supplements or functional food, supplying beneficial effects in addition to the nutritional essential components. These nutraceuticals in general contain vitamins, lipids, proteins, carbohydrates, minerals, or other necessary nutrients, depending on their emphases. These nutraceuticals are used in nutritional therapy based upon their chemical structures and biological functions human.[1]

Nutraceuticals may range from isolated nutrients, dietary supplements, and diets to genetically engineered "designer" food, herbal products, and processed products such as cereals, soups, and beverages. A nutraceutical is any nontoxic food extract supplement that has scientifically proven health benefits for both the treatment and prevention of disease8 rising health care costs, advances in food technology and nutrition, as well as a growing consumer understanding of the link between diet and health. The term "nutraceutical" combines the word "nutrient" (food or food component) with "pharmaceutical" (medical drug). Nutraceutical is a term coined in 1979 by Stephen. It is defined "as a food are parts of food that provide medical or health benefits, including the prevention and treatment of disease." Nutraceuticals may range from isolated nutrients, dietary supplements, and diets to genetically engineered "designer" food, herbal products, and processed products such as cereals, soups, and beverages. A nutraceutical is any nontoxic food extract supplement that has scientifically proven health benefits for both the treatment and prevention of disease.[1.2.3]

CATEGORIES OF NUTRACEUTICAL

Nutraceuticals are non-specific biological therapies used to promote wellness, prevent malignant processes and control symptoms. They are categorized as follows.

(a) Nutrients

Substances with established nutritional functions, such as vitamins, minerals, amino acids and fatty acids, Common nutrients and their associated health benefits.

(b) herbal

Herbals Herbs or botanical products as concentrates and extracts. Common herbs.[4]

Example- Aloveragel, garlic, licorice, ginger, ephedra etc.

Dietary Supplement

Dietary supplements are products administered through mouth that contain a dietary ingredient intended to add something to the foods you eat. Examples of dietary supplements

are black cohosh for menopausal symptoms, ginkgo biloba for memory loss, and glucosamine/chondroitin for arthritis. They also serve specific functions such as sports nutrition, weight-loss supplements and meal replacements. Supplement ingredients may contain vitamins, minerals, herbs or other botanicals, amino acids, enzymes, organ tissues, gland extracts, or other dietary substances. They are available in different dosage forms, including tablets, capsules, liquids, powders, extracts, and concentrates.Dietary supplements, such as the vitamin B supplement shown above, are typically sold in Pill form. A dietary supplement is a product that contains nutrients derived from food Products that are concentrated in liquid or capsule form. In the US, the Dietary Supplement Health and Education Act (DSHEA) of 1994 defined the term: "A dietary supplement is a Product taken by mouth that contains a "dietary ingredient" intended to supplement the diet.The "dietary ingredients" in these products may include: vitamins, minerals, herbs or other Botanicals, amino acids, and substances such as enzymes, organ tissues.[5,6]

INGREDIENTS OF THE DIETARY SUPPLEMENTS

There are various type of ingredients found in the nature, which play a very important as in the dietary supplements. They are such as given below:

- Functional food
- Carotenoids
- Fatty acid
- Herbs
- Collagen hydrolysate
- Phytochemicals
- Dietary fiber.

Functional food: Functional foods are foods with benefits in health enhancement and complaint forestallment other than only furnishing nutrients. These foods have constituents that enhance antioxidant andanti-inflammatory conditioning, which are functional to help conditions similar as type- 2 diabetes. These foods are made available for diurnal consumption for a specific.[7]

population with a analogous quality of other traditional foods in the request. Examplesof these functional foods are rice, wheat, order sap, soybeans, lentils, chocolate, citrus, fruits, nuts, and instigated milk. Rice is the first chief food consumed by themajority of populations;

its nutritive value is as a source of carbohydrates, containing lowlevels of fat, swab and sugar Traditional rice varietiesin India represent a great origin of minerals and vitamins similar as niacin, thiamine, iron, riboflavin, vitamin D, and calcium; in addition, they hold advanced fiber and lower amounts of sugar. Wheat is the alternate chief food consumed across the world wholegrain wheat is made up of three layers which are the bran, the endosperm, and the origin; whole- grain wheat can be reused to produce wheat bran and wheat germWheat bransrepresent the most salutary part of wholegrain wheat due it their fiber content which is believed to play a part in perfecting gastrointestinal health.[8]

Carotenoids: Carotenoids are natural compounds and sources of pigmentation that accumulateabundantly in plants, fruits and vegetables, and algae. A wide range of carotenoid deriva-tives are found in the human diet, including α-carotene, β-carotene, β-cryptoxanthin, lutein, lycopene, zeaxanthin, croqueting, auroxanthin and astaxanthin. They arerenowned for their wide spectrum of beneficial effects to health, including antioxidant[9] and anti-inflammatory properties.In addition, carotenoids exert health benefits over human vision, cognitive functions, heart functions, cancer prevention, and immune func-tions. A study revealed the anti-inflammatory activity of two forms of carotenoids, astaxanthin and β-carotene, where both were found to be able to suppress the inflammation induced by Helicobacter pylori by inhibiting the production of reactive oxygen species and diminishing the level of inflammatory mediators being expressed.[10]

Fatty Acid: Adipose acids are the element of canvases and fats that are present in beast fats, fish oilsupplements, seeds, olive oil painting, and coconuts. Away from their part in energy storehouse, they've been proved for their capability to act as ananti-inflammatory and immunomod- ulatory element in color ful studies.- In one study, the omega- 3 polyunsaturated fattyacids(PUFAs) administered at a cure of>2.7 g/ day for at least three months to cases with rheumatoid arthritis(RA) showed reductions in the inflexibility of rheumatoid arthritis(RA) symptoms.[12]

Herbs: Herbs are plants that have no woody tissue and can be processed in many ways dependingon each individual preference. Herbs can be dried; however, the drying process leads to areduction in the effectiveness of herbal properties. Herbs that are rich in antioxidant havebeen used in flavoring and aroma for more than two thousand years. Garlic extracts, gingerroot, and aloe gel are herbs that have health benefits such as reducing cholesterol, wound healing, and anti-ulcer and antioxidant activities.

Phytochemicals: Phytochemicals are salutary, concentrated or purified chemicals from shops thathave active factors for biochemical and metabolic responses in humans, similar as luteinand lycopene. Phytochemicals can help in maintaining chemical balance of the brain, therefore furnishing neuroprotective exertion. also, high consumption of vegetables and fruits that contain phytochemicals can reduce the threat of cancers, and cardiac andneurodegenerative diseases.[13]

Dietary fiber: Filaments are factory- groundednon-starch carbohydrates that are inadequately digestible and providevarious health benefits, as mentioned by numerous studies, and can be set up naturally in a widevariety of foods including vegetables, fruits, wheat bran, oats and ispaghulahusk. Dietary filaments can be classified into further than two orders on the base of their solubility in hot water- retaining capacity, and density into answerable and undoablefibers. Soluble fila, ments comprise thick factors similar as β-glucans, fructans, andnon-viscousfibers similar as hemicellulose. undoable filaments tend to lose the specific of viscosityand they're undoable in water; undoable filaments tend to accelerate gastric evacuating timewhich helps in relieving constipation.[14]

CONCLUSION

Nutraceuticals give all the essential substances that should be present in a healthy diet for the mortal. From the below study it can be concluded that colorful chemical ingredients from natural sources can be attained and prepared into colorful optimized, safe, stable phrasings for the treatment and opinion of conditions. Nutraceuticals embody a novel and exhilarating exploration field for the discovery of innovative health products with tremendous capabilities of health benefits including safety, efficacity, and frugality. Encyclopedically, experimenters have realized the fact that proper nutrition and salutary supplements can help and cure habitual conditions. Several types of nutraceuticals have been insulated from foods, and massive amounts are produced using biotechnology and inheritable engineering tools which give pharmaco- profitable benefits. The raised demands for health care have dramatically increased the cost of medical care. thus, people have tried to achieve a better quality of life by eating further vegetables, fruits, and other factory foods, taking salutary supplements or nutraceuticals.

REFERENCE

1. Ames BN, Mark KS, and Tory MH. Oxidants, Antioxidants and the Degenerative Disease of Aging.

2. Biesalski HK. Nutraceuticals: the link between nutrition and medicine. In: Kramer K, Hoppe PP, Packer L, editors. Nutraceuticals in health and disease prevention. New York: Marcel Dekker Inc, 2001; 1-26.
3. Nasri, H.; Baradaran, A.; Shirzad, H.; Rafieian-Kopaei, M. New Concepts in Nutraceuticals as Alternative for Pharmaceuticals.Int. J. Prev. Med, 2014; 5: 1487–1499.
4. Caramia, G.; Silvi, S. Probiotics: From the Ancient Wisdom to the Actual Therapeutical and Nutraceutical Perspective. In PProbioti Bacteria and Enteric Infections: Cytoprotection by Probiotic Bacteria; Malago, J.J., Koninkx, J.F.J.G., Marinsek-Logar, R., Eds.; Springer: Dordrecht, The Netherlands, 2011.
5. Hathcock J. Dietary supplements: How they are used and regulated. J. Nutrition, 2001; 1114-1117.
6. Ruchi, S. Role of nutraceuticals in health care: A review. Int. J. Green Pharm, 2017; 11.
7. Heldman, D.R. Food Science Text Series. 1994. Availableonlinehttp:// www.springer.com/series/5999 (accessed on 22 April 2020).
8. Alkhatib, A.; Tsang, C.; Tiss, A.; Bahorun, T.; Arefanian, H.; Barake, R.; Khadir, A.; Tuomilehto, J. Functional Foods and LifestyleApproaches for Diabetes Prevention and Management. Nutrients, 2017; 1310.
9. Lee, Y.; Hu, S.; Park, Y.-K.; Lee, J.-Y. Health Benefits of Carotenoids: A Role of Carotenoids in the P.revention of Non-Alcoholic Fatty Liver Disease. Prev. Nutr. Food Sci, 2019; 103–113.
10. Lee, Y.-H.; Bae, S.-C.; Song, G.-G. Omega-3 Polyunsaturated Fatty Acids and the Treatment of Rheumatoid Arthritis: A Meta-analysis. Arch. Med. Res, 2012; 43: 356–362.
11. Kumar, G.P.; Khanum, F. Neuroprotective potential of phytochemicals. Pharmacogn. Rev, 2012; 81–90.
12. Lobo, V.; Patil, A.; Phatak, A.; Chandra, N. Free radicals, antioxidants and functional foods: Impacton human health. Pharmacogn Rev, 2010; 4: 118–126.
13. Embuscado, M.E. Spices and herbs: Natural sources of antioxidants—A mini review. J. Funct. Foods, 2015; 811–819.
14. Lust, J. The Herb Book: The Most Complete Catalog of Herbs Ever Published; Courier Corporation: North Chelmsford, MA, USA, 2014; p. 642.