



A Review: Exploring the science of Nutraceuticals, Market Growth and Leading Industries.

Kale S.B.,Shinde P.S.,Ghadage B.C.,Shendage A.B.,Mali M.R.

Student,student, Student,student, lecturer

Shri Ganpati Institute of Pharmaceutical Sciences & Research, Tembhorni

Abstract:-

The words "nutrition" and "pharmaceutical" are combined to form the term "nutraceuticals," which refersto a food or food product that allegedly has health and medical benefits, including the ability to prevent and treat disease.

In addition to being nutritional, nutraceuticals can be utilised as medications.A chemical that has physiologicalbenefits or offers protection against chronic diseases including cardiovascular disease, cancer, irritable bowel syndrome, diabetes, or Alzheimer's disease is referred to as a nutraceutical product. Nutraceuticals can be used to prolong life or to support the body's structure or functions Nutraceuticals have received a lot of interest recently because of their potential to have positive effects on nutrition, safety, and therapy. These medicines have showed promising benefits in recent research in a variety of problems.

The current review has put a lot of effort into putting out fresh suggestions for nutraceuticals based on their abilityto treat or prevent diseases.

Keywords:-

Nutraceuticals,Nutrition, Health benefits, cardiovascular disease,cancer,irritable bowel syndrome,diabetes,Alzheimer's disease.

Introduction:-

It is described as food products that have health advantages, whether they are dietary supplements or fortified foods. Nutraceuticals are non-specific biological medicines that are used to control symptoms, prevent disease, and promote wellness.

The same testing and regulations that apply to pharmaceutical medications do not apply to nutraceutical foods. Food should be categorised as follows in accordance with the Food Safety Standard Act of 2006

- Novel foods
- Genetically modified food
- Organic foods
- Foods for special dietary use
- Functional foods
- Nutraceuticals
- Health supplements(1)

The term "nutraceutical" refers to bioactive chemicals that are found in everyday foods or botanical sources and can be delivered as dietary supplements or functional foods, providing additional benefits beyond the fundamental nutritional components. The bioactive substances obtained in food sources that make up nutritional supplements include antioxidants, phytochemicals, fatty acids, amino acids, and probiotics, to name just a few. Nutraceuticals are well known for their involvement in illness treatment and prevention, antiaging characteristics, and cancer prevention, either with established effects or potential effects. The substantial role that probiotics play in the treatment and prevention of gastroenterological illnesses encourages people to consume them (2).

Study of herbs as health food Table no :-1

Alfa-alfa: <i>Medicago sativa, Fabaceae</i>	PUFA, carotins, vitamins from the B group, C, D, E, and K; phytoestrogens such as spinasterol, coumesterol, and coumestan; high protein content	Antioxidant, Hypocholesteremic
Amla: <i>Emblica officinalis, Euphorbiaceae</i>	Phyllembin, ascorbic acid, tannins, proteins, and carbs.	Antioxidant, hair tonic, Diarrhea, anemia, diuretics, laxative, jaundice.
Ashwagandha: <i>Withania somnifera, Solanaceae</i>	Steroidal lactones, tropane and pyrrolidine alkaloids	Immunomodulatory, antistress, anti-inflammatory
Chicory: <i>Cinchorium intybus, Asteraceae</i>	Vitamins A, B complex, carotenes, minerals, sesquiterpene lactones, dietary fibres like insulin, fructo-oligosaccharides, and carotenes are just a few examples.	Roots are coffee substituent, anti-inflammatory, antiparasitic, hepatoprotective
Garlic: <i>Allium sativum, Liliaceae</i>	Volatile oils, proteins, vitamins, lipids, allin, allicin, polysulphides, diallyl disulfide, and amino acids	Food supplements, treatment of cough, cold, bronchitis, hypertension, cancer, atherosclerosis, antifungal, hypoglycemic.
Ginger: <i>Zingiber officinale, Zingiberaceae</i>	zingiberol, zingiberine, shagol, fat, sesquiterpene, volatile oil, starch,	Stimulants, carminative, stomachic, scistosomiasis

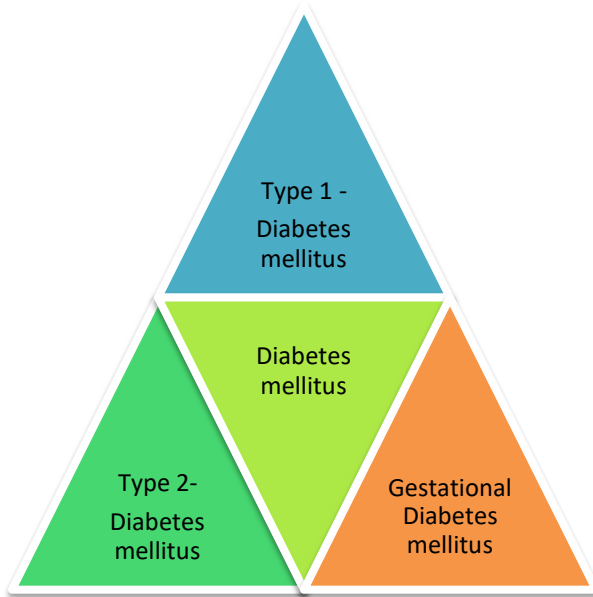
Ginseng: Asian or Korean ginseng(<i>Panax ginseng</i>) and American ginseng (<i>Panax</i>	Phytosterols and steroidal saponins	Immunomodulatory, Antistress
<i>quinquefolius</i>) <i>Araliac</i> <i>eae</i>		
Honey: <i>Apis mellifera</i> , <i>Apidae</i>	Ingredients: Dextrin, diastase, succinic acid, glucose, fructose, sucrose, maltose, traces of vitamins, and proteins.	Demulcent, expectorant, suspending agent, antiseptic
Fenugreek/Methi: <i>Trigonella foenemgra</i> <i>cum</i> , <i>leguminaceae</i>	Trigoneline saponins, phytosterols, mucillating hydrocolloids, proteins, lipids, and volatile oil	Hypoglycemic, demulcent, flavouring agent, condiments, emollient in indigestion
Spiruline (type of blue green algae) <i>Arthrospira</i> <i>platensis</i> and <i>A. maxima</i>	It is a cyanobacterial biomass that is abundant in protein, vitamins, minerals, and carotenoids.	Antioxidants, potent dietary support in malnourishment (3).

Health benefits and role of Nutraceuticals in ailments

Diabetes:-

Diabetes mellitus (DM), also referred to as just diabetes, is a spectrum of metabolic illnesses characterised by persistently elevated blood sugar levels.

There are three varieties of type 2 diabetes.



Type-1 Diabetes:

It is also known as "juvenile diabetes" or "insuline dependent diabetes mellitus" (IDDM). It is brought on by the pancrease's inability to produce adequate insulin as a result of Beta cell loss. Beta cell loss is brought on by an autoimmune reaction. This autoimmune reaction's origin is uncertain.

Type-2 Diabetes:-

Insulin resistance, a disease in which cells do not respond to insulin as intended, is the first sign of "adult onset diabetes" (also known as "non insulin dependent diabetes mellitus" or "NIDDM").

Gestational diabetes:-

This third major kind develops during pregnancy in pregnant women who have never had diabetes before. Recent studies have shown that a variety of herbal dietary supplements and herbal medications can reduce the risk of type 2 diabetes mellitus by increasing GLP-1 and glucosidase, decreasing phosphoinositide 3-kinase (PI3K), and lowering AGES.

Mechanism:-

As an incretin hormone, glucagon-like peptide-1 (GLP- 1) stimulates insulin secretion and inhibits glucagon production. AMPK, 5' adenosine monophosphate-activated protein, or 5' AMP-activated protein kinase When cellular energy levels are low, the enzyme kinase (EC 2.7. 11.31) primarily activates the absorption and oxidation of glucose and fatty acids. In addition to increasing postprandial GLP-1 secretion, metformin has a direct and AMP-activated protein kinase (AMPK) dependent effect on L cells that secrete ULP-I, which may help explain how metformin lowers blood sugar.

Riosphonositide 3-Kinase (PI3K) is a key enzyme in the signalling pathway that controls how the body reacts to insulin and other growth hormone.

Table no:-2

Phytochemicals	In addition to improving mitochondrial activity, phytoestrogens cause an increase in the levels of antioxidant enzymes such superoxide dismutase (SOD), catalase (CAT), and glutathione peroxidase (Gpx). A variety of anti-diabetic plants, including fenugreek, bitter gourd, and gymnema malabur plum, contain phytochemicals that lower blood sugar levels, decrease hepatic glucose uptake, increase insulin secretion, and limit GI tract absorption of glucose.
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Fatty acids	<p>Omega-3 fatty acid supplementation in type 2 diabetes has a positive effect on lowering triglycerides and VLDL cholesterol, as well as blood pressure and inflammatory indicators. These nutrients come from sources like sunflower, sesame, olive, flaxseed, salmon, and avocado. Since insulin is required for the synthesis of long chain omega-3 fatty acids, the heart may be particularly vulnerable to their depletion in diabetes. Omega-3 fatty acids have been reported to reduce glucose tolerance in persons prone to diabetes. Omega-3 fatty acid ethyl esters may be advantageous for diabetic people. Antioxidant lipoic acid appears to be helpful as a long-term dietary supplement for protecting diabetics from problems and is used to treat diabetic neuropathy.</p>
Dietary fibers	<p>Dietary fibres from psyllium have been widely utilised as food additives, pharmaceutical supplements, and processed food to help people lose weight, control their blood sugar levels when they have diabetes, and lower their lipid levels when they have hyperlipidemia. In both diabetic and healthy people, soluble dietary fibre is linked to reduced postprandial glucose levels and enhanced insulin sensitivity. These effects are typically attributed to the viscous and/or gelling characteristics of soluble fibre.</p>

Minerals	A trace element called chromium may belacking in diabetics. Supplementing with chromium may help type 2 diabetic individuals with their glucose tolerance and insulin sensitivity. By assisting insulin's signal transduction and lowering the generation of cytokines, which cause beta- cell death during the disease's inflammatory phase in the pancreas, zinc appears to have effects that are similar to those of insulin. A diet high in magnesium is associated with a lower risk of developing diabetes, and there is an inverse relationship between magnesium consumption and fasting insulin levels, which may indicate improved insulin sensitivity(4).
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Parkinson's disease:-

Parkinson's disease, a degenerative illness of the central nervous system, manifests as motor symptoms because dopamine-producing cells in the substantia nigra inexplicably die. The movement-related signs and symptoms that stand out the most include stiffness, sluggishness, tremor, and issues with gait and walking. Issues with thinking and behaviours are signs of the disease in its advanced stages. Depression, which also involves sensory, emotional, and sleep problems, is the most prevalent mental symptom. Parkinson's disease is more common among senior people because it often develops after the age of 50.

While there is currently insufficient information to recommend dietary supplements for Parkinson's disease, some of these nutrients have shown some promising results in preliminary studies. Vitamin E, creatine, and glutathione among others (5).

Obesity:-

Obesity is a complicated disorder that affects almost all ages and socioeconomic groups and has major social and psychological implications. Between 1980 and 2008, the prevalence of obesity roughly doubled globally. In the WHO European Region, approximately 50% of both men and women were overweight in 2008, and roughly 23% of women and 20% of men were obese. Effective measures for its prevention and treatment are crucial given the global rise in obesity and its negative health effects. Programmes for losing weight are advised to concentrate on a modest weight loss of 7–10% of the starting weight. An energy imbalance occurs when energy intake exceeds energy expenditure, and the result is obesity.

To address obesity through either prevention or treatment, one or both of the factors must be changed. To cure or prevent obesity, one or both of the energy balance's components must be changed. Thus, weight control solutions (including a functional diet strategy) can focus on three distinct parts of the energy balance systems: nutrition intake, energy expenditure, and energy storage. All of these tactics are already used by pharmaceutical companies, but developing meals that are functional and help individuals manage their weight may be a more appealing approach to addressing the 61% of the population that is currently overweight or obese.

The current state of dietary supplements for obesity:

Nutrition and exercise are essential for the prevention and treatment of obesity, which has a relatively high occurrence worldwide. Conjugated linoleic acid (CLA), capsaicin, *Momordica charantia* (MC), and psyllium fibre are among the nutraceuticals that may be effective against obesity. The combination of the dietary supplement's glucomannan, chitosan, fenugreek, G Sylvester, and vitamin C dramatically decreased body weight and encouraged fat reduction in obese people. The risk of adverse effects and long-term efficacy require further research (6).

Cardiovascular disease:-

The term "cardiovascular diseases" (CVD) refers to issues with the heart and blood vessels. These ailments include peripheral vascular disease, heart failure, heart attack, and stroke. By 2010, CVD would surpass all other causes of mortality in emerging nations, where it only made up a third of global fatalities in 1999. The majority of CVDs can be both prevented and managed. Statistics show that a low intake of fruits and vegetables is associated with a high risk of dying from cardiovascular disease. Numerous studies have demonstrated that a diet high in fruits and vegetables can help lower the risk of cardiovascular disease (CVD) (6).

One of the most common health-related and monetary issues in the globe is cardiovascular disease (CVD). Dietary factors play a substantial role in cardiovascular risk, either directly or through their impact on other cardiovascular risk factors as hypertension, dyslipidemia, and diabetes mellitus. The use of natural nutritional substances called nutraceuticals in the treatment and averting disease has been validated. Numerous foods and dietary supplements have been shown to delay the onset of CVD (7).

For the prevention and treatment of CVD, nutraceuticals in the form of vitamins, minerals, antioxidants, dietary fibres, and omega-3 polyunsaturated fatty acids (omega-3 PUFAs) are advised. The cellular metabolism and signalling are altered by chemicals like polyphenols, which is thought to lessen artery disease (8).

Table no:-3

Phytochemicals	<p>Circulating LDL-C levels are negatively associated with how much plant sterol/stanol is consumed. In both primary and secondary prevention of CVD events, lowering total cholesterol (TC) and low-density lipoprotein cholesterol (LDL-C) is helpful. Particularly, severe coronary events are related with reduced rates when LDL-C levels are low. Flavonoids suppress the angiotensin-converting enzyme, inhibit the cyclooxygenase enzymes that break down prostaglandins, and prevent platelet aggregation. They also protect the circulatory system, which delivers oxygen and nutrients to the cells. Haemorrhoids, myocardial infarction, coronary heart disease, and venous insufficiency are among conditions that can be treated with the flavonoid hesperidin. It has been demonstrated by numerous research that pectin lowers serum cholesterol levels. It is believed those plant foods' anthocyanins, tannins (proanthocyanidins), tetrahydro-p-carbolines, stilbenes, dietary indoleamines, serotonin, and melatonin will have positive effects on</p>
	<p>one's health. Buckwheat seeds contain thiamin-binding proteins, phytosterols, flavonoids, flavones, proteins, and more. Buckwheat proteins reduce blood cholesterol levels the hypertension-causing Zingiber rhizome. officinalis, sometimes known as ginger, has strong anti-inflammatory properties. Anti-inflammatory and antioxidant properties.</p>

Prebiotics and probiotics	A putative biomarker of a poor cardiometabolic outcome is trimethylamine N-oxide (TMAO), a tiny colourless amine oxide produced from choline, betaine, and carnitine by gut microbial metabolism. Supplemental prebiotic and probiotic bacteria prevent the development of TMAO, preventing CVDs.
Dietary fibers	Additionally, dietary fibres have the ability to decrease cholesterol, which helps to prevent and treat diabetes and CVDs.
Fatty acids	Omega-3 fatty acids, which are found in fish, are dietary elements that have an impact on plasma lipids and CVD, including arrhythmias. Octacosanol is
	a lipid-lowering substance with no negative side effects that is found in whole grains, fruits, and leaves of many plants. Consuming PUFAs decreases cholesterol levels, increases vasodilation, and prevents platelet aggregation (8).

Cancer:-

Cancer is one of the worst diseases and is marked by the unrestrained multiplication of abnormal cells, claim Pérez-Herrero and Fernández-Medarde (2015). The International Agency for Research on Cancer's GLOBOCAN study estimates that there were around 8 million cancer-related deaths and 14 million new cancer diagnoses worldwide in 2012. Nearly 700,000 of these deaths and almost 1 million new cases occurred in India, which has about 17% of the world's population (9).

Recently, it was discovered that a number of naturally occurring bioactive substances had anticancer capabilities, killing altered or malignant cells without harming their healthy counterparts. This result happens when natural products are mixed with traditional treatments, indicating that consuming nutraceuticals may help boost the potency of anticancer therapy (10).

Table no:-4

Phytochemicals	<p>Due to their powerful antioxidant properties, plants high in resveratrol, berberine, lupeol, and carotenoids suppress the proliferation of cancer cells. Gallic acid, ellagic acid, and epigallocatechin-3-gallate are examples of tannins that also scavenge dangerous free radicals and detoxify carcinogens. "Phytoestrogens," such as kaempferol, apigenin, and genistein, are advised for the prevention of breast and prostate cancer. There is evidence that phenolic substances like curcumin, gallic acid, ferulic acid, and caffeic acid have anticancer properties. By preventing the cancer cells from sticking to other cells in the body, prostate cancer can't spread. In particular, the enzymes that support the growth of tumours in the liver, colon, lung, breast, stomach, and oesophagus are blocked by glucosinolates and the hydrolysis products of glucosinolates, such as indoles and isothiocyanates. Flavonoids from citrus fruit, isoflavones from soy. Tea polyphenols and turmeric's curcumin have anti-cancer effects that can prevent breast, uterine, lung, colorectal, and prostate cancers.</p>
Vitamins and minerals	<p>Consuming foods high in cysteine, glutathione, selenium, vitamin E, and vitamin C increases one's body's ability to fight off free radicals (11).</p>

Nutraceuticals global market:-

With a compound annual growth rate (CAGR) of 9.9%, the global market for nutraceuticals grew from \$372.27 billion in 2022 to \$409.12 billion in 2023. The possibility of the global economy recovering from the COVID-19 epidemic was hindered, at least briefly, by the Russia-Ukraine conflict. Economic sanctions against a number of countries, an increase in commodity prices, and supply chain disruptions as a result of the dispute between these two countries have all increased the cost of goods and services and had an effect on various global markets.

The global market for nutraceuticals is anticipated to reach \$596.81 billion in 2027 at a CAGR of 9.9%. The nutraceuticals industry sells dietary supplements, therapeutic foods, functional foods, and medications. Values in this market are established at the "factory gate," or the price at which items are sold by producers or creators to customers or other companies (like upstream producers, wholesalers, distributors, and retailers), as well as to other firms.

Any additional services supplied by the product's makers are included in the pricing of products in this market. Despite being categorised as food, nutraceuticals are also used in medicine. Nutraceuticals, which are carefully prepared ingestible products from a variety of food sources, have a high concentration of bioactive compounds with a variety of nutritional, medicinal, and health benefits.

A person can complement their regular daily diet with nutraceutical items and supplements to get more nutrients that will support outstanding health and wellness. The use of nutritional supplements promotes better physical and mental health, prolongs life, prevents chronic diseases, and enhances overall health. Any additional services supplied by the product's makers are included in the pricing of products in this market. Despite being categorised as foods, nutraceuticals are also used in medicine. Nutraceuticals, which are carefully prepared ingestible products from a variety of food sources, have a high concentration of bioactive compounds with a variety of nutritional, medicinal, and health benefits.

In 2022, North America will dominate the global market for nutraceuticals. Asia-Pacific is predicted to experience the fastest increase during the projection period. The nutritional supplements market analysis covers the following geographical regions: Asia-Pacific, which the western part of Europe, Eastern Europe, the United States, South America, the Near East, and Africa.

Numerous substances, such as vitamins, minerals, probiotics, which proteins, peptides, omega-9 fatty acids, and others are used as nutraceuticals. Every single day, minerals and vitamins are required for the body to function efficiently. To boost the nutritional value of food products, vitamins and minerals are added, which benefits human health and immune system strength. Depending on their source which may be microbial, animal or plant these are classed.

Numerous uses for these nutraceuticals include animal nutrition, dietary supplements, personal care, and functional foods and drinks. In addition to gummies, powder, liquids, softgels, capsules, and tablets, they also provide a variety of product formats. One of the many channels via which nutraceuticals are offered includes specialty stores, supermarkets and hypermarkets, convenience stores, drugstores and pharmacies, online retail stores, and other distribution channels.

The growth of the nutraceutical industry is significantly influenced by the rise in the senior population. Nutraceuticals are products that one can take in addition to a regular diet to get extra nutrients that boost immunity and overall health.

In order to maintain immunity and fend off diseases like diabetes, hypertension, high cholesterol, and other age-related issues, an individual requires additional nutrients as they age, especially after the age of 65. Nutraceuticals are used as supplements to help people get all the nutrients they need each day. For instance, according to UN predictions, there will be 1.5 billion individuals over the age of 65 in the world by the year 2050, up from the estimated 727 million in 2020. As a result of the rising older population, the market for nutraceuticals is growing. New product development is the main trend that companies in the nutraceutical market are pursuing.

This is a result of the large number of nutraceutical companies that are operating on the market and their desire to grow in order to control the sector.

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By using the plant-based ingredient mulberry leaf extract powder as an artificial sweetener for prediabetic patients, Nestlé Health Science, a nutrition company with headquarters in Switzerland, developed a product called Reducose in December 2021 that aids in maintaining a normal blood glucose response. The Reducose from Nestle Health Science has been demonstrated to improve blood sugar levels when postprandial blood glucose levels are reduced by 40% dish can be sweetened with it without the flavour or texture of the dish or beverage being altered. Deerland Probiotics & Enzymes was acquired by ADM, an international food processing company with US headquarters, in November 2021 for an undisclosed fee. The goal of this acquisition is to help ADM meet growing consumer demand for a range of dietary supplements, functional foods, beverages, and pet nutrition that enhance health and wellbeing by expanding its prebiotics, probiotics, and postbiotics supplement portfolio in customised food and beverage products. Consumers all throughout the world are driving this demand.

Deerland Probiotics & Enzymes, Inc. is a maker of nutritional supplements with its corporate headquarters in the US. The company specialised in combining probiotic, prebiotic, and enzyme technology to develop health solutions with scientific backing.

Australia, Brazil, China, France, Germany, Greece, Hong Kong, India, Indonesia, Japan, Russia, South Korea, and the United States are among the countries covered in the industry analysis for nutraceuticals. The market value is defined as the profits that businesses generate from the sale of goods and/or services within the specified market and geography, expressed in terms of the currency (in USD, unless otherwise indicated). The revenues for a given territory are consumption values, which are the revenues generated by enterprises there, regardless of where they are produced.

The nutraceuticals research report is one of a new series of reports that provide statistics on the nutraceuticals industry, including the size of the global market for the sector, regional shares, stakeholder competitors, in-depth Nutraceuticals segments, market trends and opportunities, and any other data you might need to succeed in the industry. This research paper on nutraceuticals provides a full overview of everything you need, as well as a careful analysis of the sector's present state and anticipated futures (12).

India's Nutraceuticals market growth:-

India has the potential to dominate the global nutraceuticals market with a market worth roughly USD 4-5 billion. It is projected to rise by more than 18 billion USD by 2025. According to estimates, India's market for dietary supplements was valued at USD 3924.44 million in 2020 and is expected to increase by 22% yearly to USD 10,198.57 million by 2026. Due to the ongoing epidemic and the increased importance of preventative healthcare, this industry is growing at an exponential rate. Due to the Indian population's growing belief in immunity-boosting supplements, there has been a significant change in consumer behaviour. A few examples of the adaptable shopping preferences of healthcare consumers are vitamin capsules, chewable tablets, and gummies.

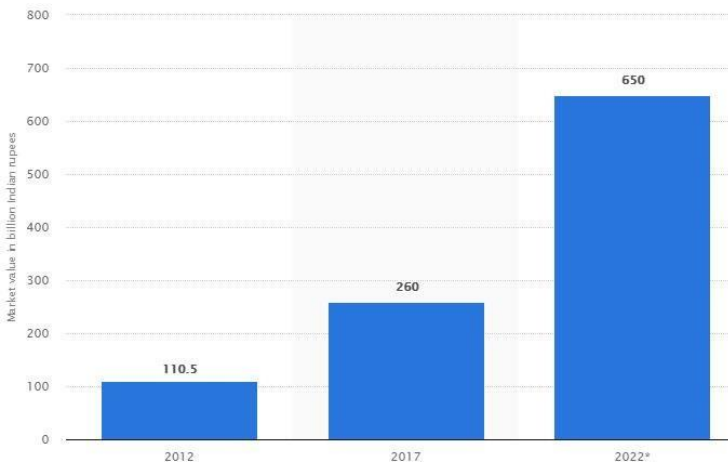
Rise of Preventative Healthcare:-

Preventive healthcare has become an essential line of defence during the pandemic, highlighting the importance of the nutraceuticals business as a trustworthy source of revenue for the general public. Demand for nutraceuticals is soaring even after the pandemic's intensity has subsided. The second wave proved that the market share of the nutraceutical business has been established and would grow. (Naresh, n.d.) In the midst of the present epidemic, India's nutraceutical industry can step up to address the country's health concerns and significantly boost its Gross Domestic Product (GDP). With a market value of roughly USD 117 billion, nutraceuticals have a sizable global following.

In order to boost immunity, consumption of potential minerals and micronutrients, such as Vitamin A, Vitamin D, Vitamin C, folate, selenium, zinc, etc., has considerably increased in recent years. In order to perhaps increase immunity or provide protection against the coronavirus, a number of ingredients can be regularly added to the diet, according to a study by Nutrition and Dietary Supplements. Proteins such as whey protein, polyphenols, and legume seeds that contain plant protease inhibitors may be included in the diet.

Indian Nutraceutical Market Stats:-

Once these global markets have matured, the nutraceutical sector is now shifting to developing nations in the Asia Pacific. By 2019, it is expected that the Indian market will be worth \$5 billion. In 2017, it held a 2% market share of the global nutraceutical market. By 2023, it is projected to increase at a CAGR of 21% and reach USD 11 billion. In addition, it is expected that by 2023 India will have at least 3.5% of the global market under its hands.



India exported pharmaceuticals worth 16.3 billion USD in FY20. As on the end of 2020, India exports pharmaceutical worth USD 15.86 billion. Pharmaceutical exports totalled USD 2.07 billion in FY20 and USD 16.28 billion in October 2020, respectively. Nutraceuticals are being imported into the Indian market for USD 2.7 billion vs being exported for USD 1.5 billion. The market is expected to grow at a remarkable 22% CAGR by 2023. The Indian nutraceuticals market has expanded at a 25% yearly rate throughout the epidemic. In addition, FDI increased, rising from 131.4 USD in FY12 to 584.7 USD in FY19.

Current Trends and Future Predictions:-

The urban population of India has never been more concerned about maintaining their physical health. India's nutraceuticals sector now has a fantastic opportunity to grow as a result. The industry is therefore expected to grow quickly as a result. Nutraceutical producers and marketers have created cutting-edge marketing techniques to educate people about the product, its benefits, and its usage in both medical treatment and preventative healthcare. With a renewed focus on improved product quality standards, increased transparency, and competitive pricing for innovations, players in the sector are now initiating a variety of initiatives on their own. This will aid in the growth of nutraceuticals in the health and wellness sector. The pharmaceutical industry currently dominates the supplement market, which is already controlled by the nutraceutical market to the tune of 67%.

Measure to Attract Investors & Entrepreneurs:-

The Food Safety and Norms Authority of India (FSSAI) is getting ready to create standards for nutraceuticals in India that are compliant with international norms in order to encourage new company owners to enter the nutraceutical industry. Once these laws are in place, they will pave the way for sizable foreign investment, especially from new businesses, leading to a swift doubling of the industry's value. Nutraceuticals will undoubtedly become commonplace in Indian families and swiftly rise in popularity (13).

World's Top Nutraceutical Companies:-

As you are all aware, a variety of nutraceutical products have become widely available in supermarkets, health food stores, and pharmacies during the past few years. If you want to take a franchise of nutraceuticals pharmaceuticals products, stick with us here as we provide an accurate list of the Top Nutraceutical Companies in the World. Finding top-notch pharmaceutical and PCD pharmaceutical franchises is made easier by all of the companies listed on this site.

Everyone is now concerned about their health because of the ageing population, a growth in chronic diseases, and increased consumer knowledge about nutraceutical products. Nutraceuticals are foods with medical benefits, such as the treatment and prevention of disease, as well as nutritional value or medicinal value. Market growth for nutraceuticals is anticipated to reach a CAGR of 7.2% from 2019 to 2025, rising from USD 267 billion in 2019 to USD 404.8 billion. You have a wonderful opportunity to sign up with the companies listed below and benefit from a variety of services.

Top 10 Global Nutraceutical Companies:-

This list of the Top Nutraceutical Companies includes reliable and well-known organisations in the global healthcare industry. In addition to this, all of the mentioned businesses offer a PCD pharma list of branded items, making them perfect for the nutraceutical PCD franchise business. All of the companies on the list have ISO certification and adhere to GMP, WHO, and other legal laws in order to maintain a quality system for their products. The greatest Nutraceutical PCD businesses for the pharmaceutical industry are listed below.

Table no:-5

1	• Vox Nutrition
2	• Elmed Life Sciences Pvt Ltd
3	• Divi's Nutraceutical
4	• Lifecare Neuro
5	• Matsun Nutrition
6	• Kerry
7	• Glanbia
8	• BioVit Laboratories
9	• Nutriwell
10	• Cosmo Pharma

1. Vox Nutrition:-

The leading supplier of vitamins and nutraceuticals is Vox Nutrition. They believe that a company's ability to sell healthy products can only be measured by the company that manufactures those products. They currently carry over 100 different luxury dietary supplements and products, including vitamin capsules, powders, pills, softgels, liquids, lotions, and creams. They also help their customers develop their own line of distinctive vitamins and formulas. On Amazon and other online retailers, many of their in-stock dietary supplement goods are best-sellers.

The company was created in 2002 by President Charlie Estes, who is aware of the particular challenges faced by both retail and wholesale businesses. The company also has a cGMP and FDA Registered Manufacturing Facility, and its main goal is to provide its clients with high-quality supplements quickly and at cheap prices. Since the company's start, they have helped customers differentiate themselves from the competition by exhibiting products manufactured with the highest-quality ingredients available. The company also maintains a state-of-the-art laboratory that is fully equipped for the best results.

Some of their nutraceutical products range includes:-

Table no:-6

Joint Care Gummies
L-Glutamine Capsules
Glutamine Powder
Testosterone Support
Beetroot Capsules
Emergency Immune
Vitamin C Gummies
Probiotic Gummies
Prenatal Multivitamins
Horny Goat Weed Extract
Beta-Alanine Capsules
Neuro Plus Brain Formula
Anti-Anxiety Formula

Address: 5647 Wells Park Rd, West Jordan, UT 84081, United State

2. Life Sciences Pvt Ltd.:-

Elmed Life Sciences has established itself as one of the most trustworthy companies since they started making nutraceutical products. They are accredited to ISO 9001:2015 and hold a USFDA registration. With

products available in liquid, powder, capsule, tablet, and syrup dosage forms, they specialise in the manufacturing of probiotics and nutraceuticals. They also have a recognised manufacturing facility with roughly 20,000 square feet of space devoted to packaging, quality control, and quality assurance.

The firm also offers contract manufacturing and contract research services in order to produce pharmaceuticals globally. To build on their reputation, they plan to keep providing a large assortment of high-quality products and a dependable supply chain. Its products satisfy consumer needs, which ultimately results in healthcare becoming more generally accessible. Their main objective is to deliver the highest level of quality and happiness to their clients in the most efficient way possible. They make an effort to maintain integrity and honesty in their interactions with all business partners.

Nutraceutical Products manufactured by them includes:-

Table no:-7

Mega fit Capsules
Omega Forte
Evening Primrose Oil Capsules
Adall Plus Capsules
Alpha Lipoic Acid
Mother's Choice
Lecithin Capsules
Garlic Oil Capsules

Carbonyl Iron Capsules
Vitamin E Capsules U.S.P.
Cod Liver Oil Capsules
Vitamin A & Vitamin D capsules

Office Address: #303, V R Sunshine, Pathrika Nagar, Madhapur, Hyderabad, Pincode – 500081, India

3. Divi's Nutraceutical:-

Research & Development is listed as one of Divi's Nutraceutical's core strengths when company first goes public in 1990. Beta-Carotene, Lycopene, Lutein, Apocarotenal, and Canthaxanthin are just a few of the more than 65 distinct carotenoid and vitamin product types they now create. They also offer a wide range of technical resources and sales services to help their worldwide clients find and meet the demands of their product development. Their production processes are designed to boost productivity, use less energy and raw materials, and produce no waste. The company has provided the best carotenoid and vitamin component products ever since it was founded.

Their manufacturing facilities follow GMP requirements,FSMA regulations, and the highest quality standards,including ISO 9001, ISO 14001, OHSAS 18001, FSSC 22000, and SEDEX. They aim for the highest quality possible in both their goods and services, and all of their products are produced in state-of-the-art facilities. They adhere to international quality standards in their management, services, and decision-making, and they successfully carry out their strategies. All items completely comply with the current regulatory requirements of the US and EU standards.

Divi's Nutraceutical can serve worldwidewith quality products such as:-

Table no:-8

Natural Beta-Carotene
Apocarotenal
Vitamin D3 100 SD/SUN
Canthaxanthin
Astaxanthin 2.5% DC/AFN-X
Lycopene 5% DC/AF
Lutein 0.1% SD/SF
Vitamin A Acetate 250 SD
Vitamin E 50 DG/Q
Zeaxanthin 14% LF

Contact Details: 25A Hanover Road, Suite 300, Florham Park, NJ 07932 USA

4. Lifecare Neuro:-

A reputable pharmaceutical company called Lifecare produces supplements and third-party nutraceutical products. Every dietary supplement type is being attempted to be covered, including liquid prenatal vitamins, vitamin D3, garcinia cambogia, raspberry ketone pills, and green tea extract. Given that their quality level conforms with WHO Form, they are India's most dependable maker of nutraceutical medications. They currently manufacture more than 100 distinct nutraceutical products. They have a production plant in Baddi that has been accredited by the WHO.

They also have the capacity to create pharmaceuticals on a large scale. The company is also well known for its pharmaceutical section, which is expanding quickly and has over 400 registered items. The company is dedicated to developing, manufacturing, and distributing solid dosage forms that are well-known globally

and satisfy the requirements for their intended usage. The company's main objective is to outperform GMP and WHO-run global quality standards. Their entire stock and line of prepared items has earned the endorsement of the DCGI and FSSAI.

Product List also includes:-

Table no:-9

Lecithin-Softgels
Coenzyme Q10 – ubiquinone
Omacor (Pro) – omega-3 polyunsaturated fatty acids
CoQ10 – ubiquinone
L-Carnitine (Pro)- levocarnitine
TheraTears Nutrition
Epanova (Pro)
Genicin
Aminomine- tryptophan
GlutaSolve – glutamine
LiQ-10 – ubiquinone
MegaKrill
Prenatal DHA
Pryflex

Head Office: #70/1 Dharampur, Sai Road, Near Export Promotion Zone, Baddi, Himachal Pradesh, Pincode – 173205

5. Matsun Nutrition:-

The creation of liquid vitamins and dietary supplements for the general population was pioneered by Matsun Nutrition. They agree that everyone deserves to enjoy a healthy life, even animals. When the company was first established in 1992, it produced dietary supplements like tablets, capsules, and powder. The company is NSF registered, conforms with FDA regulations, and follows good manufacturing practises, all of which are industry norms for making vitamins. Their team does internal testing to ensure that their products have a shelf life of at least two years from the date of manufacture.

They also offer a private label service for affordable premium liquid vitamins and nutraceuticals. In order to focus on finding the best natural ingredients and developing quality supplements in a market that is underserved, the company has decided to specialise in this area. Their facilities are set up to produce supplements, and their salespeople are adept at creating a suitable product line for customers who need private marking and specific contract manufacturing. They also inspect the individual pieces and the complete product to make sure that every item you receive satisfies or surpasses industry requirements for premium wellness supplements.

They are leading manufacturers of:-

Table no:-10

Advanced Daily Liquid Multivitamin
Liquid Vitamin D3 Supplement Drops
Whole Food Daily Liquid Multivitamin
Liquid Sleep Aid Supplements
Liquid Calcium Supplement
Hair, Skin Care, and Nails Supplement
Extra Strength Glucosamine Chondroitin MSM Liquid Supplement
Liquid Vitamin B12 Drops
Liquid Vitamin B-Complex Energy & Stress Supplement

6. Kerry:-

For more than 40 years, Kerry has expanded to meet the constantly shifting demands and expectations of customers. For business owners in the dietary supplement, food, and beverage sectors, they are now the market leader in terms of flavour and nutrition. Healthier lifestyles, the globalisation of dietary guidelines, and shifting consumer needs are their top goals. They innovated, developed new products, and set up a network of international technology and innovation centres as well as regional development and applications centres in order to respond to the shifting needs of their customers. They also employ 1,000 highly skilled nutritionists and food scientists who provide insight into the development of new products.

More than two billion people receive sustainable dietary advice from the company, which significantly lessens its environmental effect. Kerry is at the vanguard in anticipating and driving the industry's recognition of this complex need thanks to its customer insights, excellent modification, and management abilities. The company helps to create foods and beverages that are tastier, more real, and nutrient-dense. Its goods are more organic,

Long-lasting, and socially and environmentally conscious.

Their nutritional product range includes:-Table no:-11

Beta Glucan
Lipids and Bases
Prebiotics and Probiotics
Proteins
Cell Nutrition
Excipients

Kerry Group Headquarters: Prince's Street Tralee County Kerry, V92 EH11 Ireland

7. Glanbia:-

Glanbia is committed to creating exceptional nutrition for people at all stages of life. The organisation wants to discover how to develop goods that are better, healthier, and smarter to fit the requirements and lifestyles of people all around the world. They constantly innovate, improve, and reinvent products in order to make them easy for consumers to use in their daily lives. In partnership with supplement producers, Glanbia Nutritionals' Nutritional Solutions division offers a range of clients' protein-based, plant-based, bioactive, aseptic processing solutions. Additionally, a large amount of the cheese that is most favoured globally is produced there.

The company runs 14 Innovation & Collaboration Centres across China, Singapore, Germany, Ireland, Canada, and the US. To provide the highest-quality nutritional components, the company invests in research and development. They ensure the supply chains' flexibility, responsiveness, and dependability so that they can consistently provide customers with the materials they need to do amazing things. They also talk about how they work with partners to establish trustworthy bonds with their clients, consumers, and the communities they influence.

Product List:-

Table no:-12

PepForm® Peptides
Hydrovon®
WheyXR™ Extended Release
GroPlex®
AminoBlast® Technology – BCAAs, EAAs & Encapsulated Leucine
FitNox®
HydroMax®
Prolibra®

CapsiAtra®
SatieTein®
Bioferrin® Lactoferrin
MenaQ7® Vitamin K2 MK-7

Direction: Ring Road, R95 E866, Kilkenny, Ireland

8. BioVit Laboratories: -

BioVit Laboratories is a New Zealand-based manufacturer of nutraceuticals and dietary supplements. The best options are offered to their clients by them.

Their exceptional level of nutraceutical expertise is their main strength. Innumerable formulae in various dosage forms have been developed by them for speedy production and client delivery. To develop high-quality products, they make use of cutting-edge production methods and technology. The company is committed to maintaining the highest standards of quality in compliance with the tight regulations set forth by the NZFSA and other international standards in other countries.

Some of their product range includes:-

Table no:-13

CALDAY C CAP
ANCER LM 60ML SYP
ANCER TAB
ANATRA TAB
TENDAR TAB
Soft Gel Capsule

Office address: 6 Wilk Lane, Browns Bay, Auckland 0630, New Zealand

9. Nutriwell:-

The company creates premium health & wellness goods using cutting-edge technology and ongoing innovation in order to give its clients the best value possible. They conceptualise the products, produce them, and assess them with the assistance of our expert team of scientists before making them available to clients. Their labs have undergone inspection and approval by the Indian Food Safety Standard Authority. Additionally, their facility is GMP and ISO certified. For consumers to be able to access this market, the company delivers seamless production and top-notch quality.

There is a senior scientist in charge of research and development who over the years has given the nation a wide variety of high-quality formulations, earning him a good reputation in the area. Technology-differentiated products from this company cover the whole spectrum of dosage applications. They are committed to providing customers with premium nutraceutical products at fair costs.

Key Products:-

Table no:-14

High Protein Supplements
Pre Workouts- Intra Workouts- Post Workouts
Mass Gainers
Weight Management
Lean Gainers
Meal Replacements
BCAA'S
Casein based products

Get in touch: 322, (IGC) Industrial Food Park, HSIIDC Saha, Ambala.

10. Cosmo Pharma:-

Cosmo Pharma is a company with GMP and ISO 9001:2015 certifications. The business started producing in 1985 with the motto "do not compromise on principles, core values, and professional ethics." For their cherished customers, they will continue to go above and beyond. They adhere to and closely monitor "Safe Behaviour" since it is essential for the security of our clients, staff, and products. The company will provide employees with fulfilling work and opportunities for advancement in an environment that feels like a family.

By modernising conventional medicine and doing ground-breaking research, the company offers professional, high-quality, regulated, and secure Nutraceuticals products.

Their nutraceutical products include a wide range of:-

Table no:-15

Amyflo Sachet
Betacran Sachet Box
Bronkeez Syrup
Caycal D Tablet
Cosfer Tablet
Coslax Syrup
Energina Syrup
Femi 9 Tablet

Head Office: A1-37, Block 13B, Gulshan e Iqbal Town, Karachi, Pakistan.(14)

Conclusion:-

Overall health is improved, energy is increased, anxiety is reduced, mental clarity is improved, sleep quality is improved, drug cravings are reduced, the ageing process is delayed, and biological functions are supported and controlled by the nutraceuticals.

Nutraceuticals, taken as a whole, are foods or components of foods that have a major impact on changing and sustaining optimal physiological function in humans.

The use of nutritional supplements can avoid the onset of chronic diseases and lessen their effects.

This review highlights the possible benefits of nutritional supplements for healthy people. However, genetic predisposition and lifestyle diseases like cancer, cardiovascular disease, Parkinson's disease, obesity, and diabetes play a major role in a person's vulnerability to any given disease.

So, each person will react differently to nutraceuticals. When consumed within the appropriate Recommended Dietary Intakes, nutraceuticals have been shown to have positive effects on health and can help people stay healthy in general.

The market for nutraceuticals is projected to reach USD 291.33 billion in value in 2022 and to grow at a CAGR of 9.4% from 2023 to 2030. The primary market growth drivers are preventive healthcare, an increase in ailments associated with a sedentary lifestyle, and a rise in consumer interest in foods that promote health. Furthermore, it is predicted that increased consumer spending power in economies with strong rates of economic growth will boost the expansion of the market for nutraceutical products. Another factor influencing the rise in demand for dietary supplements and Nutraceuticals is the shift in consumer attitudes towards self-directed care in the treatment of lifestyle conditions like cardiovascular diseases and malnutrition.

The leading makers of nutraceutical products, including Vox Nutrition, Kerry, Elmed Life Sciences Pvt Ltd, Glenbia, Divi's Nutraceutical, BioVit Laboratories, Lifecare Neuro, Nutriwell, Mushin Nutrition, and CosmoPharma, are now readily available in stores.

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