





ORGINAL ARTICLE

Current status and prospects of Ayurveda nutraceuticals in Kathmandu, Nepal

Bijendra Shah^{1*}, B.D. Patel², Sahara Shrestha³, S.M. Prasad⁴, R.K. Shah⁵

^{1,2} Teaching Assistant, ³ Assistant Professor, ^{4,5} Associate Professor, Ayurveda Campus and Teaching Hospital, Kirtipur, Kathmandu, Nepal

ABSTRACT:

Background: Holistic considerations and personalized dietary planning constitute the basic features of the Ayurvedic concept of nutrition, which enhances optimal health and disease prevention. Nutraceuticals is a connecting link where both the system of medicine should shake their hand with enduring hardcore research and mutual acceptance of both the systems. Nutraceuticals are all about the nutritional fulfilment of the body requirement. There are many reasons for nutritional deficiencies which lead to ailments and degenerative processes. Nutraceutical products provide nutritional supplement which alleviate the symptoms and prevent from further degeneration. **Methods**: A cross-sectional study was planned to collect information regarding Ayurveda nutraceuticals available in the market of Kathmandu Valley. The electronic databases like Google scholar, Cochrane library, Pubmed, Scopus, Web science, Science direct, Research gate etc. were searched for related published articles. Libraries of universities as well as departments of different ministries and websites and publications of different departments of government of Nepal as well as ancient/Ayurvedic literatures were searched for relevant literature. **Results and Conclusion:** This work may be considered as a potential source for generating data on the current status of Ayurvedic nutraceuticals in Nepal. Some recommendations have also been put forward to strengthen the field of Ayurvedic nutraceuticals in Nepal.

Keywords: Ayurveda nutraceuticals, Nutraceutical, Kathmandu, Nepal

Access the article online			
Quick Responde Code	www.thehealerjournal.org		
	DOI: 10.51649/healer.55		

*Corresponding Author:

Dr. Bijendra Shah Teaching Assistant Ayurveda Campus and Teaching Hospital Kirtipur, Kathmandu, Nepal Email: bijendrashah17@gmail.com Submitted: 18.11.2020 Received: 20.01.2021 Revised: 21.01.2021 Accepted: 26.01.2021

INTRODUCTION

Ayurveda, a5000-year-old health science, has mentioned benefits of food for therapeutic purposes. The term nutraceuticals has been applied to products thatother than nutrition, are isolated from herbal products, dietary supplements (nutrients), specific diets and processed foods such as cereals, soups and beverages that are also used as medicine. Nutraceuticals are food or part of food that provide medical or health benefits including the prevention and/or treatment of a disease. Nutraceutical has more advantages over anymedicine as they avoid side effect, have been fortified naturally with dietary supplement etc. Nutraceutical, on the basis of their natural source, chemical grouping, can be broadly categorised into three key terms -nutrients, herbals, dietary supplements and dietary fibres. The most rapidly growing segments of the industry are dietary supplements (19.5 percent per year) and natural/ herbal products (11.6 percent per year). Nutraceuticals, in contrast to pharmaceuticals, are substances, which usually do not have patent protection. Though both pharmaceutical and nutraceutical compounds might be used to cure or prevent diseases, but only pharmaceutical compounds have sanction of the government. Dr Stephan De Felice coined the term Nutraceuticals from "nutrition" and "pharmaceutical" in 1989. Related terms are "functional food" and "dietary supplement". Ayurvedic principles, dietetics, nutrition, pharmaceutical preparations can also be correlated with nutraceutics in the present scenario. This includes antioxidants, digestive stimulants, probiotics etc which are very important in the present scenario. Through Ayurveda, we can bridge the gap between food and medicines. Ahara(diet) is indicated as best medicine as per Ayurveda which is similar to that of the concepts of Hippocrates. [1]The levels at which an Ahara becomes preventive or curative (Aushadha) depends on a lot of factors like properties and qualities of Ahara used, Prakriti(Constitution), Sara(tissue quality) and Dosha(humour) of the individual etc. Although the concept of nutraceuticals is gainingmomentum and popularity more recently, its roots can be traced to the ancient Ayurveda system of medicine.^[2] Other divisions of Ayurveda like Rasavana(Ayurvedic nootropics), Panchakarma(detoxification regimen) also have benefited from Pathya-Apathya(wholesome and unwholesome diet and regimen) concepts. The nutraceutical application spread

in these areas have yet not been explored. Hence imparting more focuson nutraceutical applications will be beneficial for the growth of Ayurveda in this direction.^[3] The Pathya-Apathya, Hitha-Ahitha, Sathmya–Asathmya(tolerable/ untolerable)are based on an individualistic approach. Apart from this, Rasayana is the most advanced form of preventive application specific to disease, age, climate etc which is similar to current nutraceutic practice. ^[4]Since principles of both are complementary to each other and go together hand in hand, it would yield better result especially in present era. Demand for quality of life has fuelled the 'nutraceutical revolution' and increased the trend of seeking traditional or alternative beneficial products. The association of nutraceuticals with traditional medicine brings the long-standing consumer acceptance. The classical texts of Ayurveda are scattered with references on the implication of food products in various diseases. [5] Ayurveda plays a great emphasis on the quality of nutritious food for (i) preventing the degenerative changes caused by ageing (Rasavana-Ayurvedic nootropics), (ii) post illness/ convalescence phase nutrition (Balya), (iii) enhancing the immunity (Vyahikshamatwa) (iv) maintaining the vitality (Vajikarana). [6,7]Supplementation of nutrients which improves the quality of Ahara rasa, improving the process of absorption in other words improving bioavailability of nutrients by handling digestive fire (Agni), by improving proper assimilation of nutrients by cleaning the body channels (Srothoshoushathva) and making the nutrients available for the tissue, by enhancing tissue utilization or tissue uptake of the available nutrients. This is very important for proper functioning of tissues with above four steps of circulation that leads to DhathuUpachaya. The concept of Rasayana (Rejuvenation therapy) is a broad concept in Ayurveda and embraces more components than today's nutraceuticals.[8]

PURPOSE

To gather upto date information regarding the current status and prospects of Ayurveda nutraceuticals in Nepal.

OBJECTIVES

The present study aims to validate the nutraceutical aspect in Ayurveda. It explains the Ayurvedic perspective of nutraceuticals and provides details about*Rasayana*. The study also correlates and discusses nutraceuticals and *Rasayana*.

SPECIFIC OBJECTIVE:

- 1. To enlist natural, herbal or Ayurveda nutraceuticals.
- 2. To assess ingredients, composition, dose, price and manufacturing companies of the nutraceutical products.

RATIONAL

A significant proportion of population consumes nutraceuticals to achieve good health and ensure longevity. Most of the companies or manufacturers are producing their products in the name of herbal or natural products and claim no harm or side effect of the products. There is a well-known understanding that herbs practised in Ayurveda are safe and effective, which they are, if used under proper supervision. Nowadays, many products have been imported from abroad and are marketed as natural or herbal food supplements. Almost all importers and suppliers are located in Kathmandu valley. Hence, this study aims to evaluate herbal ingredients, its composition and description of the ingredients in Ayurveda. It is interesting to learn that Ayurveda lays a great emphasis on the quality of nutritious food for (i) averting the degenerative changes caused by ageing (Rasayana), (ii) convalescence after an illness (Balya), (iii) enhancing the defence system (Roga Pratibandhaka Rasayana), (iv) maintaining vigor and vitality (Vajikarana) and (v) for maintaining the joie-de-vivre (Jeevaniva). The category of Rasayana drugs is broadly sub-divided into three categories, Kamya (for vitality, intellect etc.), Naimmitika (for specific disorders) and Aajasrika (general) wherein the last one deals with the daily consumption of specific food products to rejuvenate the body. These food products are said to improve the quality of life by offering protection from internal and external stress factors. The probable mode of action of Rasayana is the direct enrichment of the nutritional quality of Rasa Dhatu, promotion of digestion, metabolism and nutrition through improving Agni and enhancement of the competence of Srotas (microcirculation). In classics, Rasayana has been indicated not only for maintenance of health but also for the treatment of disease. In today's medical practice it has a vital role to serve mankind through improvement in the body-mind-spirit system. Rasayana therapy is used to achieve the physical, mental and social well-being. Many

Ayurvedic formulations have tremendous nutritional benefits. There are many preparations in classics which have not been used in therapeutics which also put forth also challenges for pharmaceutical.

The usage of nutraceuticals as advocated by Ayurveda can also be classified depending upon the age of the individual, season of consumption, time of consumption, physiological conditions and according to the target organ. Ayurveda states that sound health depends on three biological forces named as Vata, Pitta and Kapha, which are all pervading and in their state of equilibrium, are responsible for healthy structural and functional setup. Although different levels of their predominance are said to determine different types of physical disposition (called Prakruti), their levels tend to vary according to age as well. Nutraceuticals may range from isolated nutrients, herbal products, dietary supplements, genetically improved foods and processed food products. Generally, nutraceuticals contain vitamins, lipids, protein, carbohydrates, minerals and other necessary nutrients. These are marketed in concentrated forms as pills, capsules, powders and extracts as a single compound or in a combined form. Hippocrates known as the father of medicine accepted that food is medicine. Avurveda has already stated that food is the greatest medicine.^[9] Vitamin and mineral supplements contain isolated nutrients or a combination of nutrients. Nutraceutical supplements contain the compounds that are actually extracted from the whole foods. After extraction, they are concentrated and marketed in the form of pills or capsules.[10]

Classification of Nutraceuticals: Nutraceutical is a broad term. There are multiple types of products that are compassed under the umbrella term of nutraceuticals. ^[11]

- 1. Dietary supplements
- 2. Functional foods
- 3. Pharmaceuticals
- 4. Medical foods

1. **Dietary supplement:** A dietary supplement is a product that contains dietary nutrients derived from food products and are intended to add further nutritional value to the diet. These are concentrated in liquid, capsule, pills and tablet form. It covers the following nutraceutical products. ^[12]

a) Nutrients: Substances such as vitamins, minerals, amino acids, fatty acids and antioxidants are dietary ingredients. Vitamins play an important role in metabolism and enzymatic interaction systems. Minerals are important for immunity, reproduction and growth. Fatty acids are responsible for healthy cell membranes, skin and hair and proper functioning of nervous system, immune system and hormones. Antioxidants prevent cellular damage and aging.^[13]

b) Herbals: Nutraceuticals holds a great promise to improve health and prevent chronic diseases with the help of herbals. Some examples are flax seed oil and powder which contain omega-3 fatty acids which is anti-inflammatory, analgesic, antipyretic, astringent and anti-arthritic.^[14]

c) Phytochemicals: Phytochemicals are secondary metabolites and also act as nutraceuticals. These are non-nutritive plant chemicals that have either defensive or disease protective properties. Chief phytochemicals are polyphenols, isoflavonoids, anthocyanidins, phytoestrogens, terpenoids, carotenoids, limonoids, phytosterols, glucosinolates, and polysaccharides. Dietary intake of phytochemicals may promote health benefits, provide protection against chronic degenerative disorders such as cancers, coronary heart diseases, diabetes, high blood pressure, inflammation, microbial, viral and parasitic infections, psychotic diseases, spasmodic conditions, ulcers, osteoporosis and associated disorders. Majority of foods such as whole grains, beans, fruits, vegetables and herbs contain phytonutrients/ phytochemicals.^[15] For example, carotenoids (Isoprenoids) found in various fruits, vegetables and egg yolk, are anticarcinogenic, boost immune cells and protect cornea against UV light.^[16]

d) Probiotics: These are live microbial feed supplement for improving its intestinal microbial balance. Specific probiotics are used to treat lactose intolerance, acute diarrhoea and antibiotic-associated gastrointestinal side effects. They help in the production of specific enzyme (β -galactosidase) that hydrolyse the offending lactose into its component sugars. Lactobacillus bacteria and bifidobacteria are the most important probiotics. ^[17]

e) **Prebiotics:** Prebiotics are nutraceuticals which promote the flourishing of probiotics. These are the dietary

ingredients that affect the host by selectively altering the composition or metabolism of gut flora. These are shortchain fructo-oligosaccharides that have unique chemical structures that are not digested by humans. The prebiotic consumption generally promotes the lactobacillus and bacterial growth in the gut which helps in metabolism. It is beneficial in improving lactose tolerance, detoxification, and dyslipidaemia, relief from constipation and in certain tumours. Inulin is prebiotic that has been widely used in processed foods. Prebiotics are commercially extracted and concentrated from fruits and vegetables through the hydrolysis of polysaccharides from dietary fibres or starch, or through enzymatic generation. Some sources of prebiotics are chicory roots, onion, garlic, banana, tomato, alliums and beans. ^[18]

e) Nutraceutical Enzymes: Enzymes are an essential part of the body which are responsible for many biological functions. Enzyme supplements in diet help to eliminate many symptoms of hypoglycaemia, hyperglycaemia, digestive problems and obesity.^[19]

f) Dietary Fibres: Dietary fibres are the edible plant material that is not hydrolysed by enzymes of digestive tract but digested by the microflora of gut. Dietary fibreincludes non-starchy polysaccharides such as cellulose, hemicelluloses, gum and pectin, lignin and resistant dextrin. The soluble components of dietary fibres have bulking and viscosity producing capabilities which retard the gastric emptying of the stomach. This affects the rate of digestion and uptake of nutrients and feeling of satiety. It lowers the LDL and improves glucose tolerance. ^[20]

2. Functional food/ Fortified nutraceutical:

Functional food is food in which components or ingredients have been added to give it a more specific medical or physiological benefit, other than having purely nutritional effect alone. The concept of functional food was first-ever introduced by Japan in 1991. When functional food aid in prevention or treatment of disease other than anaemia is called as nutraceuticals. It constitutes fortified food from added nutrients or ingredients. For example- milk enriched with Vit. D, orange juice fortified with calcium, cereal flour added with fibre and folic acid.^[21] **3. Pharmaceuticals/ Recombinant nutraceuticals:** The term pharmaceuticals is more frequently associated in agricultural circles, with medical applications of genetically engineered crops or animals. Energy-providing foods such as bread, alcohol, fermented starch, yogurt, cheese, vinegar and others are produced with the help of biotechnology. The production of probiotics and the extraction of bioactive components by enzyme/ fermentation technologies as well as genetic engineering technology are achieved through biotechnology.^[22]

4. Medical food: The medical foodis formulated to be consumed or administered internally under the supervision of a physician, that is intended for the specific dietary management of certain disease or conditions for which distinctive nutritional requirements, on the basis of recognized scientific principle, are established by the medical evaluation. Medical foods are regulated by the FDA and can be prescribed or monitored under medical supervision. For example- supplement for a patient with inborn errors in amino acid metabolism, hyperhomocysteinemia, pancreatic exocrine insufficiency, cachexia in cancer. ^[23]

METHODOLOGY

This is a cross-sectional study that had been planned to collect information regarding Ayurveda nutraceuticals available in the market of Kathmandu Valley with reference to company name, ingredients composition, uses. Furthermore, it includes both Ayurveda products under food and food supplements, nutraceuticals registered at Food and Quality control department, Kathmandu, Nepal. Products will be included on the basis of inclusion of herbs as major ingredients in the composition. This study will provide an overall scenario of manufacturing nutraceutical products and marketingtrends under the name of herbal or natural products.Google scholar, Cochrane library, Pubmed, Scopus, Web science, Science direct, Research gate etc. were searched for related published articles. The data collection was done through libraries of universities and departments of different ministries and websites, publications of different departments of government of Nepal for obtaining export and import data as well as ancient/Ayurvedic literatures for use patterns of the medicinal herbs.

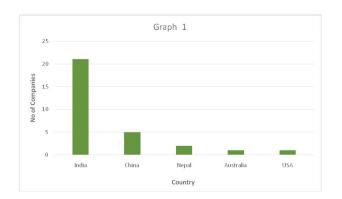
Data collection: All data of different company products of nutraceutical were collected on following manner as explained in chart.



RESULTS

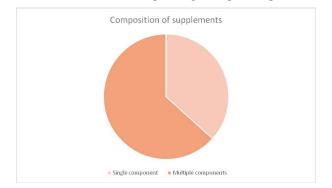
Rasayana therapy is a broad aspect ranging more than nutraceuticals because it not only provides nutrition but also increases longevity, vitality, immunity and body strength. Among other approaches to prevent diseases, nutraceuticals also play an integral role. Preventing or retarding the onset of diseases has become a more attractive and cost-effective strategy in the medical arena. Here Ayurveda provides a holistic and better drug delivery system for dietary supplements and nutrients, which is a proven individualistic protocol since long time. Here we can apply the nutraceutical potential of Ayurveda as preventive, palliative and health promotive measure. Agni(digestive function) is responsible to change the Panchabhautika composition of any Dravvavia the Paka or Pachana(metabolic process) which changes the whole composition. Therefore, all the principal food articles described in Brihattrayi are SaagniAhara Kalpana. This can be better applied in the context of Samsarjanakrama. Since, these krama is done to stimulate Agni and nourish body; the same can be used in diseases where Agnimandata is observed. So nutrition in Ayurveda is strictly based on the absorption, assimilation and other host factors. Ayurvedic aspect of nutrition is very comprehensive as well as holistic which is beyond the level of conventional nutritional practices. In Samsarjana karma, Ayurveda emphasises on calorie intake as well as nutrient supplementation.

A. Nutraceutical products of different countries: We found around 30 Ayurveda nutraceutical products manufactured by more than 15 companies which has been presented in a graph below. It shows that Ayurveda nutraceuticals are still in regular use by the Nepalese people.

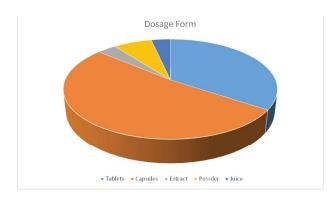


B Nutraceutical supplements according to

Composition: The study showed that major supplements had been formulated incorporating multiple components.



C Nutraceuticals according to Dosage Form: The study showed that the major nutraceutics were in solid form majority of which were in the form of tablets. The liquid dosage forms were found to be in lesser proportions in the Nepali market wherein juice and extract were found to be 1 in number.



DISCUSSION

The global market is currently experiencing a period of growth post-recession. Even after effect of recession fades, the market for nutraceutical is likely to remain in the growth phase which is driven by an emerging market of countries like India, China, Brazil etc. Numerous nutraceutical combinations have entered the international market through exploration of ethnopharmacological claims made by different traditional practices. In case of plant extracts and phytochemicals, various Indian companies have entered their place as prominent suppliers both locally as well as globally, which will help in flourishing nutraceuticals sector in the near future.In the context of Nepal as well major companies that supplied nutraceutical products belonged to India. India being a neighbouring country could also have been a great reason for the majority of products being imported from India. Government regulations regarding holistic considerations and personalized dietary planning constitute the basic features of the Ayurveda nutraceutical supplements, which will provide optimal health and disease prevention. Nutraceuticals is a connecting link where both the system of medicine should shake their hand with enduring hardcore research and mutual acceptance of both the systems.Many Ayurvedic formulations have tremendous nutritional benefits. Most of the supplements marketed in Nepal consisted of herbs of Ayurvedic origin. The dominance of multi components were seen. Nutraceutical products with single constituent herbs were less in number. The broad spectrum of nutritional coverage could have been a major reason for the majority of products having plural components. Though only a small fraction of Ayurvedic herbs have been dispensed as nutraceuticals in the Nepali market, there are many preparations in classics which have not been used in therapeutics which showcase challenges and promising fields for pharmaceuticals. There is a need for further research, development and proper planning and execution of government regulations for the emergence of these preparations. Majority of the nutraceuticals were dispensed in solid dosage form as tablets and capsules. It could have been due to the ease of marketing and administration. Such dosage forms help to maintain accuracy of dose in competitive unit production costs with least content variability. Nepal being a country rich in natural resources and herbs can itself be more industrialised in the nutraceutical sector. The presence of fresh local herbs could also be a major reason for less consumption of nutraceutical products. The residents of urban areas like Kathmandu are accustomed to using the nutraceutics as they are aware of the benefits. The tendency of Nepalese people to prefer traditional medicine, ignorance of rural people, nutraceutical products being marketed in major cities alone etc. could be some of the reasons for the inability of such products to reach the actual networkingpotency.

The association of nutraceuticals with traditional medicine is bound to bring the long-lasting consumer acceptance. When backed with current modern medical research, the acceptance will be whole hearted. The examples quoted above are of the few nutraceutical preparations picked in their original form from the classical texts of Ayurveda in which fortification in terms of desired effects has been done in a natural way. It is not always possible to find the active phyto-constituent and the rationality of a particular combination of herbs in terms of modern scientific methods as is evident in the black box design of Ayurveda. But all that which is beyond the reach of scientific proof is not irrational and non-existing, as rightly depicted by Acharya Charaka (one of the earliest Ayurvedic scholars) - "Pratyakshama hi alpam, analpamapratyakshama" (i.e. what is visible to human beings is only a small fraction of this universe and what we cannot perceive is much more than that, which doesn't make that non-existent). The formulations cited above are in use for centuries and have survived due to the benefits that they offer.

CONCLUSION

To truly consume a healthy diet, the vast majority of the diet must be composed of health-promoting foods and nutraceuticals but disease-promoting foods or junk food must be avoided. Ninety percent of the daily diet should be made up of nutrient rich plant foods, whose calories are accompanied by health-promoting phytochemicals, vegetables, fresh fruits, beans and legumes, raw nuts, seeds, and avocados, starchy vegetables and whole grains. In the Kathmandu scenario, most nutraceutical products were imported in solid dosage form. The study showed that there is also a need for further research and development of these preparations for nutritional supplements.

RECOMMENDATIONS

Promotion of Ayurveda Nutraceutical Supplements in education and practice all over the country.Education policy should incorporate Ayurveda Nutraceutical Supplements.Industrial initiatives should be taken. Development of formulations and assurance of quality standards is to be done. The conservation, development and sustainable management of medicinal plants in a planned way by government and private sector with proper coordination is needed.Initiatives to promote Ayurveda Nutraceutical Supplements industry for private sectors is required. Regulatory mechanism for Ayurveda Nutraceutical Supplements i.e., education and practice need to be incorporated. Regulation and quality control of Ayurveda Nutraceutical Supplements should be done in an effective way.Good clinical practice guidelines for Ayurveda Nutraceutical Supplements should be formed. Government regulations allow greater legal security and more predicable environment. Government regulations regarding unfair competition from manufactures using false or misleading claims should be formulated and implemented properly and effectively.

ACKNOWLEDGEMENTS: Not Applicable

CONFLICT OF INTEREST: Author declares that there is no conflict of interest.

SOURCE OF SUPPORT: None

REFERENCES:

- Dr Arun R Et All: Nutraceutical Applications In Ayurvedic Dietetics And Nutrition. International Ayurvedic medical Journal {online} 2016.
- Charaka. Charaka Samhita (Ayurveda Dipika Commentary of Chakrapanidatta), JadavajiTrikamji Acharya, editor; reprint edition 2011; Varanasi; Chaukhambhaorientalia, 138.
- Shastri, K.N. and Chaturvedi, G.N. ChikitsaSthanaRasayanadyay. Charak Samhita, "Vidyotini" Hindi Commentary Part-II. Varanasi, Chaukhambha Bharti Acadami; Edition Reprint, pp. 1–64. Complement. Alternat. Med., 1998; 3: 349–57.
- 4. Sharma, P.V. Charaka Samhita Chikitsasthana, (Chaukhamba Orientalia, Varanasi, 1981; 2: 62–74.
- Kalra, E.K. Nutraceutical-AAPS. Pharma. Sci., 2003; 5: 2–3.
- The Ayurvedic Pharmacopoeia of India. Part II. Vol
 1. 1st ed. New Delhi: Ministry of Health and Family

Welfare, Government of India, 2007; 13. 10. Narayna, S. CharakShahinta, IInd Edition, (Choukhamba Bharti Academy, Varanasi), 1983; 1–44

- Pandey, K.N. and Chaturvedi G.N. (Eds.) (CS.Su.28.3) Charak Samhita, Chaukhamba Bharti Academy, Varanasi. (2009).
- Singh,A.K., Gupta, A.K., Manish and Singh, P.K. Rasayana Therapy: A Magic contribution of Ayurveda for healthy long life. Int. J. Res. Ayurveda Pharm. 5(1) 2014, 41- 47.
- 9. Pal, S. (Ed) Kashyap Samhita (KS.Khi.4.5) Chaukhamba Sanskrit Sansthan, Varanasi
- Nasri, H., Baradaran, A., Shirzad, H., and Kopaei, M.R. New Concepts in Nutraceuticals as Alternative for Pharmaceuticals. Int J Prev Med. 2014 Dec; 5(12): 1487–1499.
- Radhika, P.R., Singh, R.B.M. and Sivakumar, T. Nutraceuticals: An area of tremendous scope, International journal of Research in Ayurveda and Pharmacy; 2(2) 2011, 410-415.
- Radhika, P.R., Singh, R.B.M. and Sivakumar, T. Nutraceuticals: An area of tremendous scope, International journal of Research in Ayurveda and Pharmacy; 2(2) 2011, 410-415.
- Singh, J. and Sinha, S. Classification Regulatory Acts and Applications of Nutraceutical for Health; International Journal of Pharmacy and Biology Sciences, 2(1) 2012, 177-187.
- Ehrlich, S. D., (Willow bark), private practice specializing in complementary and alternative medicine. Phoenix, AZ. Review, VeriMed Healthcare Network, 2008.
- 15. Prakash, G., Gupta, C. and Sharma, G. Importance of Phytochemicals in Nutraceuticals. Journal of Chinese

Medicine Research and Development Oct. 2012, Vol. 1 Iss. 3, pp. 70-78.

- Duthie, G.G., Gardner, P.T., Kyle, J.A. Plant polyphenols: are they the new magic bullet? Proc Nutr Soc. 2003 Aug; 62(3):599-603
- Michail, S., Sylvester, F., Fuchs, G. and Issenman, R. Clinical efficacy of Probiotics: Review of the evidence with focus on children, Clinical practice guideline. J PediatrGastroenteroNutr; 43(4):550-7,2006.
- O'Bryan, C.A., Pak, D., Crandall, P.G., Lee, S.O., Ricke, S.C. (2013) The Role of Prebiotics and Probiotics in Human Health. J Prob Health 1:108.1-8.
- Singh, J. and Sinha, S. Classification Regulatory Acts and Applications of Nutraceutical for Health; International Journal of Pharmacy and Biology Sciences, 2(1) 2012, 177-187.
- Anderson, J.W. 1995. Dietary fibre, complex carbohydrate and coronary artery disease. Can. J. Cardiol. 11 Suppl:55G-62G
- Casey, C. F., Slawson, D. C. and Neal, L. R., Vitamin D supplementation in infants, children, and adolescents. Am. Fam, 81:2010, 745-748.
- Bhowmik, D., Gopinath, H., Kumar, B.P., Duraivel, S. and Kumar, K.P.S. Nutraceutical – A Bright Scope and Opportunity of Indian Healthcare Market; The Pharma Innovation. Vol.1(11). pp.29-41.
- Radhika, P.R., Singh, R.B.M. and Sivakumar, T. Nutraceuticals: An area of tremendous scope, International journal of Research in Ayurveda and Pharmacy; 2(2) 2011, 410-415.

How to cite this article:

Shah B, Prasad Patel BP, Shrestha S, Prasad SM, Shah RK,Current status and prospects of Ayurveda nutraceuticals in Kathmandu, Nepal, The Healer Journal, 2021;2(1):8-16

D Available Nutraceutical supplements of Ayurveda in Kathmandu:

S.N.	Product	Company	Ingredient	use
1	Tab. Tribull	Contact Manufacturing, Australia	Tribulus terrestris (Gokshur), Avena sativa	Supplement
2	Cap Testrol Gold	Bactolac Pharmaceutical, USA	Shilajit, Avena sativa, ferugeents, B12, B6	"
3	Cap Gulcen	Qinghai Qiyng, China	Phyllanthus emblica(Amla), Saffron, myosbala	"
4	Cap Absest	Xiongbalagn, Tibetan , china	Phyllanthus amarus(Bhuiamla)	"

5	Cap Drodge	Xiongbalagn, Tibetan , china	IndulaRacemosa (Pushkarmul)	"
6	Cap Brotis	Qinghai Qiyng, H.B. Pharmaceutical China	<i>Tinospora cordifolia</i> (Guduchi), Gentiana(Kutaki), Myrobalan(Haritaki)	"
7	Cap Haya	Kayamon Tibetan medicine china	<i>IndulaRacemosa</i> (Pushkarmul), Myrobalan(Haritaki), Lithospermum	"
8	Tab Curculas	Tactus Nutrascience, India	Turmeric(Haridra)	"
9	Tab Pycorel	Tactus Nutrascience, India	Terminalia arjuna (Arjuna), Mimosa pudica (Lajwanti), Azadirachta indica (Neem)	"
10	Pow. Testo Pow- er Booster	Athen life science H.P. India	Shilajit , Karen, Ginsen root	"
11	Tab Glyca Care	Zeon life science, India	Cinnamomum zeylanicum (Dalchini)	"
12	Tab Toxiflush	Tripati life science,India	Trigonella foenum(Methi)	"
13	Noni Gold Juice	Almighty agro Jaipur india	Alovera, Ashwogandha, Grape seed, combogia, Gracine	"
14	Cap Garlic	VritikHerbotak India	Garlic oil	**
15	Pow. Herbo spro	LA Gronde, India	Satavari , Ashogandha, Kushkush, Brahmin, Shakhapuspi	**
16	Tab. Curcumina	Zeon Lifescienceindia	<i>Curcuma longa</i> (Turmeric), Rhizome ext., Piper nigrum	"
17	Tab. Sami sharp	Zeon Lifescienceindia	Bacopa Monneri (Brahmi), piper nigrum fruit, oroxy indium root.	"
18	Tab. Livstrong	Zeon Lifescienceindia	Silybum marinum seed, Phyllanthus amorus (Bhuai Amla)	"
19	Cap CURAR	Phyto specielitiesindia	Centella asiatica (Brahmin)	"
20	Tab Urofizz	Tactus Nutra Science india	Cinnamomum tamala(Tejpat)	"
21	XEN Met-E	Quantum Naturals Guragan	Plant Ext only	"
22	Cap Morinda	Organic world group ktm	Morinda(Mulberry), polyphenols	"
23	Cap Alovera	Organic world group ktm	Aloe vera	"
24	Cap Asparase	Vijayani Nutraceutical india	Asparagusracemosus (Satavari), carotere, theopoly	"
25	Cap Naturovita	Vijayani Nutraceutical india	<i>Boswelliaserrata</i> (Shalaki), Spirulina	"
26	O' Moringa	Vijayani Nutraceutical india	Moringa olifere ext.	"
27	Cap Premium garlic	Vijayani Nutraceutical india	Premium garlic	"
28	Cap Oiacare	Vijayani Nutraceutical india	<i>Tinospora cordifolia</i> (Guduchi), banana ext, cymnemaext	"
29	Oriensstrongliv	Vijayani Nutraceutical india	Phylunanthusasmorus, Tinospora cordifo- lia(Guduchi)	"
30	Orient slim	Vijayani Nutraceutical india	Terminalia, garcinia, cambosia	"