



Red Ocean, Efficacy and Entrepreneurial Spirit: Case-study of Astang-Ayurved Chyavanpras, Bhubaneswar

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Abstract

The article presents a case study within the broad theme of Ecological entrepreneurship, and specific to the making of herbal anti-ageing product, Chyavanpras, by a Bhubaneswar based Ayurveda professional and an entrepreneur. India has age old medical practice of Ayurveda, in which the doctors (vaidyas) prepare their own medicines, using all indigenous eco-friendly ingredients, to treat the patients. The medicines are prepared from natural herbs. The treatment is a combination of different practices, but all of them pertaining to ecological harmony of living beings with nature. Chyavanpras-making has come up both as a large scale industry, as well as MSM-Entrepreneurship. The present paper has two parts wherein the existing Indian market for Chyavanpras is discussed and in the second part a case of a local brand of Chyavanpras, made by a micro-enterprise, Astanga Ayurveda in Bhubaneswar (Odisha, India) is discussed. The case highlights entrepreneurial self-efficacy, differentiation in service and product to be a sustainable model for micro-entrepreneurship. It presents an exhaustive list of essential ingredients and also the market competition, prevailing in India, with leading brands in this category.

Key words: Chyavanprash, Micro Entrepreneur, AYUSH, Ayurveda, SWOT

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Introduction

As the Hindu mythology goes, Chyavan was an old sage. He married a beautiful princess at an old age and could not consummate the marriage. His effort to make the princess happy made him to research about different herbs and its medicinal effects. He combined it into an elixir called Chyavanpras (The story of Chyavanpras). Chyawanprash recipe is present in the ancient Ayurveda treatise Charaka Samhita.

Similarly, Yoga has gained acceptance all over the world and its role in preventing diseases is well acknowledged. It is also claimed to prevent psychosomatic disorders and improve quality of life. India has the largest network of traditional health care and delivery system (National Rural Health Mission website).



Ayurveda is known as an alternative medical practice in India. According to Ken Research group, the market has registered a CAGR of 19.5% during financial year 2008 to 2013 ("Asia Alternative Medicine Market Size - India Herbal Products, Herbal Medicine Market Analysis," n.d.). Ayurveda depends on the biodiversity of natural resources and Ayurveda has been catering to the health needs since 5000 BC. The text documents more than 2000 plant species for their therapeutic potentials. WHO estimates, that about 80 percent of the world population trust traditional systems of medicines for primary health care (Mukherjee & Wahile, 2006).

There is rising awareness in India about harmful effects of chemical based products. The government has started increasing support to promote Ayurvedic and Herbal Products, which in turn is expected to fuel market growth. Herbal products category includes herbal hair care market, herbal skin care market, herbal oral care, herbal Chyawanprash, herbal balm and herbal digestives. Government of India is expected to increase its AYUSH budget to INR 25.5 billion by FY'2021 (India Infoline 2016), which will boost the size of the industry. To support various AYUSH institutions across the country, a total of INR 266 crore has been given while INR 447 crore is allocated for research and development. It is believed that herbal medicines help in curing specific diseases such as flu, gastrointestinal ailments and life threatening diseases such as tuberculosis, cancer and others. At the same time such medicines are potent against life style diseases such as diabetes, obesity, heart diseases etc. Herbal products are expected to ensure health and work life balance of people. Additionally, booming male grooming industry in the country will spur the demand of herbal products especially products made for male customers. Expanding product lines of herbal product portfolio will also boost the size of the herbal products industry in the coming future. Use of herbal medicines for therapeutic & preventive purpose is forecasted to increase in the coming years. Rising awareness, greater marketing and promotional strategies adopted by popular brands such as Dabur, Himalaya is likely to drive the sales of herbal hair care products in India in the future. Distribution channel strength becomes important for companies in this segment, since most of the population in the country is living in rural areas and the penetration of herbal products is low in these areas. Companies have started promoting their products by organizing free health camps, yoga camps and others. It is also anticipated that the Government will set up standardization measures for herbal products and alternative medicines.

AYUSH

It is an acronym for Ayurveda, Yoga, Unani, Siddha and Homoeopathy. These are known as alternative systems of medicine in India. This has been created as a ministry in India from 2014 ("Ministry of AYUSH," 2018). National AYUSH Mission (NAM) was created to provide cost effective and equitable health care throughout the country and to ensure adoption of quality standards for drugs prepared. Since this is supposed to be alternative system of medicine, the facilities are to be co-located near primary health centres and hospitals. Also since these medicine systems depend on herbs and natural products, one of the objectives was to ensure quality practices in creating a supply chain for such products ("National Ayush Mission (NAM)," n.d.). Some other researchers have debated about if the formulations are medicines or poison (Patwardhan, Vaidya, & Chorghade, 2004).

In India, many national brands (as in Exhibit-I) are into this business. Any entrepreneurial effort can survive on its demand. In India, particularly in villages, people prefer Ayurvedic and homeopathic medicine with the belief that it is very congenial to human body system. Chyawanprash preparation and consumption is in practice in South-Asian sub-continent, since couple of centuries, in organized form of entrepreneurship. So there is age old acceptance by the people and it becomes the first choice for common ailments. The case of a first-generation entrepreneur, who is into this

green, eco-friendly entrepreneurship since last one decade, in the capital city of Odisha, India is taken.

Preparation of own formulation of Chyavanpras: Williamson (2002) has discussed about major herbs used in Ayurveda. Ayurveda considers revitalization and rejuvenation of the body system in 'Rasayan chikitsa' (rejuvenation therapy). And the drugs are used for diverse disorders. Modern medicine system has not investigated the herbs used in such drug preparation adequately (Govindarajan, Vijayakumar & Pushpangadan, 2005).

Market Challenges

Chyavanpras is manufactured and marketed in India by many established companies as well as Ayurveda Practitioners. Companies such as Dabur, Baidyanath, Zandu, Patanjali, Himalaya, Charak, Vicco, Emami manufacture and distribute their product in the generic brand name or in their own brand name (Dharmananda, n.d.).

Sriram (2016) chronicles the genesis and growth of India's first branded Chyawanprash company Dabur. Dabur was founded by Dr SK Burman in 1884 in Kolkata to provide natural, Ayurveda cures, the manufacturing plant was set up in 1896. By 1936, it became Dabur India Pvt Ltd, and brought first branded Chyawanprash, in 1949. It went public in 1986. Dabur has over 250 herbal and Ayurveda products and claims to be the world's largest Ayurvedic and Natural Healthcare Company. It has strong distribution network with over five million retail outlets and exports to about 120 countries worldwide. The company is estimated to have almost 60 per cent market share. In early 2000, Dabur Chyawanprash's sales dipped due to several factors such as perception of product being old fashioned and outdated, rise of substitute products in health/energy drinks segments, and the perception that the product is only for children or elders. In 2005, Dabur repositioned the brand as a 'holistic health provider' rather than 'immunity builder'; It signed on youthful celebrities like Vivek Oberoi and later, MS Dhoni; changed its packaging, introduced a modern bottle design and conducted an energetic and educative campaign through magazines, the internet, retailer pamphlets and on-pack flyers. The tag line was changed from "Mujhe Dabur Chyawanprash khane ki kya zaroorat hai?" to 'fit body, active mind'. Product was modified to accommodate the changing taste, mango and orange flavour was introduced in 2010. As on date there are many different flavours. A low calorie, sugar-free variant, 'Chyawanprakash' and Ratnaprash (Economic Times, 2015) was launched in 2015 for diabetics. Dabur launched an 'Immune India School Challenge' to reach the school going children, mass awareness campaign 'Swasthya Chetna Abhiyan' also was launched by conducting health camps. During 2005, the Canadian government banned several brands of chyawanprash on the grounds that they contained too much lead and mercury. In 2007, Nepal government removed chyawanprash from the list of ayurvedic drugs and imposed VAT. It is also alleged that more than 20 per cent of chyawanprash brands contain toxic heavy metal content and herbs which metabolize into anabolic steroids, so Indian Olympic athletes are not allowed to consume any brand of chyawanprash.

Patanjali Ayurveda Limited has become India's fastest growing Fast Moving Consumer Goods (FMCG) Company. It has become second only to Hindustan Unilever, by May 2017, it doubled its revenue to over Rs 10,000 crore (Economic Times, "Inside Patanjali: Here's what life is like in Baba Ramdev's company," 2017). It has also become India's most trusted brand as per TRA's Brand Trust Report 2018 (Economic Times, "Patanjali ranked as most trusted FMCG brand in India: TRA Brand Trust Report," 2018). The company and its promoter have become subject of research interest. Various aspects of Patanjali, such as the growth strategy of the company (Singh, and Gopal, 2016), marketing through spirituality (Kumar, Jain, Rahman, and Jain, 2014), Biomoral consumerism and

national duty (Khalikova, 2017), customer perception (Jaggi and Ghosh, 2017), Swadeshi product (Pandey, and Sah, 2016), so much so that it has been claimed to be the Discoverer, Differentiator and Disruptor (Raizada, 2016).

The competition has become fierce among the market participants (Economic Times, "Chyawanprash market bristles with competition," 2002). In the year 2002 (Economic Times, 2002) the market for Chyawanprash was estimated to be Rs 260-crore. The incumbent major players such as Dabur, Zandu and Baidyanath - together account for more than 85 per cent of the market share. Other new entrants such as Himani, Himalaya and Sivananda started increasing the competition. The way seems to be creating differentiation in the market (Economic Times, "Dabur India launches sugar-free Chyawanprash," 2015). Recently, Dabur has decided to get into non-Ayurvedic products after 113 years of inception. There is a sense that Ayurveda cannot take Dabur far at the same time, the success of Patanjali indicates huge market potential. As on March 2016, about 40% of its sales came from non-Ayurvedic products and Dabur Honey market share has started declining because of Patanjali's cheaper variety (Mitra, 2016). Companies have started disparaging and challenging the authenticity of products of competitors ("Delhi High Court restrains Patanjali Chyawanprash ad for disparaging rival Dabur's product - Firstpost," 2017). Similarly there are accusations that companies are trying to mislead consumers about the efficacy of the product (Firstpost, 2016). The market could be resembling a red ocean euphemistically (Kim and Mauborgne, 2007).

In addition to these established brands (Exhibit - 1), many local Ayurveda practitioners also manufacture and sell their own formulations in their own clinics. Size of ayurvedic-chyavanprash market (in India, till end of 2016) is reported to be very vibrant with over 367,000 practitioners and over 8400 manufacturing pharma-companies. The imaging of Ayurvedic brands threatens to obscure the fact that Ayurveda represents a unique way of looking upon health, disease and the human body. The proliferation of brands also makes Ayurvedic medicines more expensive and puts pressure on the natural environment as the main supplier of Ayurvedic ingredients (Bode, 2015). Indian medicines have become a commercial activity (Bode, 2006).

The Entrepreneur

The traditional knowledge base of Ayurveda has become an industry in itself. Ayurvedic medicine preparation, herbal plantation, physiotherapy, yoga etc. has given opportunities for many people and organization for self-employment and growth. Over a period such practices have gained a sense of national pride, moral obligation and ethical dimension with the advent of Baba Ramdev's promoted Patanjali (Khalikova, 2017). Patanjali as an organization has become synonymous for trust, belief, tradition and purity (Rao and Alexandar, 2016). There have been many social entrepreneurship efforts based on Vedic wisdom as well (Madan, 2017).

However the picture is not rosy on all fronts. AYUSH doctors have higher unemployment rate compared to allopathic doctors (Rangarajan, 2015). The problem is further compounded by the fact that 56.1 percent of the Ayurveda practitioners are not qualified (Rao, Shahrawat, Bhatnagar, 2016). The same study pertaining to 2011-12 national sample survey indicates that the health worker density 20.9 workers per 10 000 population in India and there were 3.3 qualified allopathic doctors and 3.1 nurses and midwives per 10 000 population compared to World Health Organization benchmark of 22.8 doctors, nurses and midwives per 10,000 population. Another study reported in the year 2016 points that there are 58 AYUSH registered doctors in India (Motkuri, Vardhan, & Ahmad, 2017). Thus the review indicates that there are shortages of health practitioners as well as unemployment in formal sector for Ayurvedic doctors. The state of Odisha has about 180 seats for

Bachelor of Ayurved Medicine and Surgery (B.A.M.S.). This professional degree is awarded after the study of five and a half years duration, including 1-year internship.

What could be the response of professionals in this sector; waiting for uncertain formal employment, switching the career to other sectors or taking up entrepreneurship in a highly competitive business segment?

The entrepreneur of this case study completed his medicine studies on Ayurveda and took up practice in his own Ayurveda clinic. The organization is named as “Astang Ayurveda” with the specialization in joint care, neurology care and skin care. Astang Ayurveda [<http://www.astangayurveda.com>] is a multi-speciality Ayurvedic clinic and hospital, founded by Dr. Ambika Prasad Nayak at Bhubaneswar, India and managed by its CEO, Dr Lopamudra Srichandan. Apart from ayurvedic treatment of patients, Astang Ayurveda prepares its own medicines and anti-ageing Chyavanpras, known as ‘Astang Chyavanpras’ in a limited scale, since 2011. It has now a small market share (of less than 5%) in chyavanpras market of coastal/ eastern Odisha (India) which includes its regular in-patients/ clients. But Astang-Chyavanpras faces tough challenge in the national market, mostly from the national brands like, Dabur, Patanjali, Zandu and Baidyanath. [Leading brand list shown in Exhibit-1.]

The entrepreneur of the case prepares Astang-Chyavanpras in his own organization Astanga Ayurved, at Bhubaneswar, India. Astang Chyavanpras is prepared in a traditional, manual method, using around fifty authentic herbs, procured from different places (of production). A brief preparation method of chyavanpras is presented in Appendix-I whereas, Appendix-II enlists the details of herbs, with their local and botanical names. It also provides average market price (as prevailed during last quarter of 2016).

SWOT Analysis

Strength (internal, positive factor) of this small enterprise is a expertise of the founder-practitioner and demand of the natural medicine loving in-patients of its own hospital. Many of the clients of OPD (out-patients) and hospital (in-patients) are aware of product (Astang Chyavanpras). It sells 2-4 quintals of this product a year, through direct sales from hospital counter. But, as the focus is more on hospital care and administration, ‘limited staff’ is a visible weakness (internal, negative factor) for this enterprise. It is a time consuming labour intensive process of making Chyavanpras under careful supervision of the practitioner. Same hospital premises are used for making/ manufacturing the product as same staff of hospital works for this product (so as to save cost of production). It is made in bulk at one go, for at least six months’ sales. So, stocking of raw-material and finished product [Exhibit -II, III] becomes a challenge.

Though there is huge challenge before this small brand, in a market dominated by big-brands, it has some silver-lining opportunities (external, positive factors) in the form of extension/ expansion to other parts of state (western Odisha) through franchising ayurvedic hospitals. However threats to this small enterprise are many. Erratic availability of essential herbs (raw-materials) is the main issue. Existing research also indicates that supply chain for medicinal plants/ products have to be developed and community based enterprise in the herbal sector is a necessity (Torri, 2012; Torri, & Martinez, 2014). Suppliers get into the trap of exclusive supply-agreement with big companies/ manufacturers, making it difficult for small enterprises. Slowly, some herbs are getting extinct, because of Government apathy. Small entrepreneurs cannot afford to have their own herbal gardens/ farming. This sector needs Government support and encouragement, opines CEO, Ms. Lopamudra. Economy of scale goes in favour of big brands of this market. But there is opportunity

for small brands to cater to specific requirement of patient-customers, and to bring in variation and changes in composition to product, more easily. It has now sugar-free product for diabetic patients.

Conclusion

There are many small players/ brands, in hundreds, now in operation in India, mostly with a (negligible) local presence only. They serve limited customers locally. This green, eco-friendly entrepreneurship suffers from problems like unavailability of seamless supply-chain, erratic market/ demand, branding and marketing. Competing with big brands is a big challenge, as economy of scale goes in favour of the biggies. The enterprise needs support of government agencies, with priority on protection and cultivation incentives for herbs and medicinal plants. There is now a need for creating local herbs market, in organized regulated form. There is also need for looking into training and process-development issues of this particular entrepreneurship.

Teaching Note

Case Overview

This is an ex post facto case study highlighting the entrepreneurial decision and perseverance. The broad market scenario looks positive with significant growth in the segment. The market is dominated by big players with huge resources at disposal compared to a small scale entrepreneur.

Research Methods

This case study was developed after a couple of interviews with the entrepreneur and CEO of the organization. The interview took place at the Ayurvedic Hospital, situated in the suburb of Bhubaneswar. Basic literature about various services offered to the patients was collected and the location for preparation of Chyavanprash was visited. The names of the entrepreneur, CEO and the organization have been mentioned after their consent. None of the facts presented in this case study is disguised.

Learning Objectives

Entrepreneurship always has a unique individual context and market situation. In two by two matrix of favourable and unfavourable versus individual and market situation quadrants, entrepreneurial decision is possible in all four scenarios. In fact, it is indicated to be daunting for the entrepreneur. This case study refines our understanding of

1. Classical market entry strategies versus Entrepreneurial decision for market entry.
2. Maintaining a niche market and differentiation of the product to ensure sustainability.
3. Product and service diversification as a means to reduce risk by spreading sources of revenue.
4. Role of trust in service offerings.

Questions

1. Should entrepreneurs take up a text book prescribed market analysis and decide about market entry?
2. Chyavanprash has become commoditized, however, the composition of the ingredients can be varied and many ingredients have substitutes. How the mass production and mass marketing challenges can be overcome?

3. To what degree the trust between a medical practitioner and patient can be instrumental in sustaining the product business?

Answers to Questions

Most often than not, the entrepreneurial entry is against the favourable situational factors. Available entrepreneurial resources and skills are insufficient to carry out an exhaustive market analysis. The market analysis is regressive and not forward looking. There are various possibilities of outcome of the existing market conditions. Thus a fully predictive model is not feasible. In such kind of situation, entrepreneurial effort is undertaken from an individual context.

Chyavanprash has become a generic medicine but in earlier days the doctors used to vary the compositions for specific ailment. Similarly different ingredients and its substitutes available in a specific locality are expected to give different variants of the medicine. This provides the opportunity for product differentiation for different medical practitioners. However the effectiveness of such different products needs to be established.

In a situation of illness, the patient completely depends on the opinion of the doctor. This aspect arises because of information asymmetry between the patient and doctors. The doctor's role changes from an influencer to decider in case of illness. However, Ayurvedic doctors don't deal with patients having life threatening diseases, thus ability to influence the Chyavanprash buying behaviour would be limited. Without a strong differentiation, prescription drug and easy access to the product, the entrepreneur is less likely to establish strong repurchase for his product.

General Discussion or Additional Issues

The case points to other issues such as drug manufacturing, distribution and consumption. Ayurveda medicines and products are less regulated and highly accessible. Actual research on medicinal values is scant and less satisfactory. The efficacy of such drugs need to be established in a scientific manner and has to have wider acceptability among the medical practitioners as a whole. Evidence based research practices would ensure the practice to be scientifically acceptable.

Epilogue

Entrepreneurial journey is often experiential. Sustenance strategy often evolves through the individual and situational context. For small entrepreneurs sustainability often becomes more important than growth and market share.

Additional Pedagogical Materials

1. <http://www.astangayurveda.com/>
2. <http://www.astangayurveda.com/ayurvedic-hospital-bhubaneswar/>
3. <http://www.dabur.com/Products-Health%20Care-Chyawanprash>
4. <http://www.itmonline.org/arts/ayurind.htm>
5. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3253585/>
6. <http://www.nrhmorissa.gov.in/frmMainstreamingAyushUnderNRHM.aspx>
7. <https://www.kenresearch.com/consumer-products-and-retail/cosmetics-and-personal-care/india-herbal-products-market/55358-95.html>

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Authors' Profile

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Brajballav Kar is currently an Associate professor in Technology and Operation Management area in School of management, KIIT Deemed to be University, Bhubaneswar, India. He had an entrepreneurial stint and promoted a technology company. His research interest includes entrepreneurship and operation management areas. During his professional career, he was involved with technology evaluation, business process reengineering, ERP implementation and Systems integrations.

Ambika Prasad Nayak is an alumnus of Gopabandhu Ayurveda Mahavidyalay, Puri, India. He practiced for five years under the direct supervision of Prof Dr Radhakant Mishra, who hails from the famous Vaidya (Somanath Shastry) dynasty. He underwent training in Arya Vaidyasala, Kottakal and started panchakarma practice initially from a small room in Bhubaneswar Ekamra Haat and then started a multi-speciality Ayurveda hospital, Astang Ayurveda. He delivered talks on Ayurveda at Meiji University of Integrative medicine, Kyoto, Japan and also in UK.

Appendix: I

Preparation of Chyavanpras: Clean/ wash Amla with fresh water and put it neatly in a cloth as a bundle. After some time boil those clean amla and other herbs for minimum one hour. After boiling, the amla becomes soft and it is kept in that container overnight (for minimum 12 hours). It turns blackish in colour. Separate amla seeds from fruit. Take out fruit-part; keep remnant water that contains nutrients. Use grinder to make boiled amla as paste and then sieve/ filter this paste to separate fibre completely. It takes lots of time and is bit labour intensive. Then boil/ fry this filtered amla-paste (fibre removed), adding the remnant nutrient-water in a big iron-pan (kadhai/ karai). Add ghee, sugar and other ingredients. Finally honey, kesar, cardamom can be added as per taste/ flavor. Keep it for 5-6 hours. And home-made chyavanpras, the health tonic, is ready. [Note: It is just a generic description and for scientific process, one should refer manuals or consult an expert in the field.]

Appendix: II

List of ingredients/ inputs for making Astang-Chyavanpras and its cost at source in Odisha, in INR (Rs)/ 100gm

Botanical name	Family	Synonyms	Part used	Major chemical constituents	INR/
100 g					
Aegel marmelos	Rutaceae	sriphala, gandha garbha, kantaki, maha kapittha	fruit, leaves, root	Xanthotoxin, Umbelliferone, Marmesin	16
Gmelina arborea	Verbinaceae	kasmari, madhuparni, sriparni	root, fruit, flower, leaves	Ceryl alcohol, gmelinol, apigenin, premnazole	16
Stereosprum sauvealens	Bignonaceae	Kasthapatala, Tamrapuspi, Sitapatala	Root bark, flower, seed, leaf, kshara	Bark contains crystalline bitter substance	16
Phaseolus trilobus	Fabaceae	kaka mudga, kshudrasaha	whole plant	Vitexin, kaempferol, lutcolin, quercetin	16
Teramnus labialis	Fabaceae	mahasaha	root, whole plant		16
Desmodium gangeticum	Fabaceae	guha, dirgha patra, vidarigandha, triparni	root, whole plant	N-dimethyltryptamine, hordenine, desmodin, gangetinin	16
Uraria picta	Fabaceae	citraparni, atiguha, pruthakparni	Root	U.lagopodioides-fiavonoids	16
Tribulus terrestris	Zygophyllaceae	iksugandhika, trikantaka, palankasa		T. terrestris, gitogenin, stigmaterol, astragaline	20
Leptadenia reticulata	Asclepiadaceae	shaka shrestha	Root		80
Aqualaria agollacha	Thymaliaceae	Krmija, Pravara, Srestha vruksha	Wood, Oil	Agarospinol, holocellulose, jinkohol	16
Tinospora cordifolia	Menispermaceae	Jivantika, Jvaranasini, Rasayani	Stem, leaf, Areal roots	T. cordifolia, T. malabarica	10
Inula racemosa	Asteraceae	Padmapatra, Kustha bheda, Vatahva	Root	Alantolactone, isoalantolactone, D-mannitol	40
Sida cardifolia	Malvaceae	Vatya, Vatyalika, Vatyapuspi	Root	Ephedrine, choline, betaine, phytoosterol	20
Phyllanthus niruri	Euphorbiaceae	Bhudhatri, Bahuphala, Bahupatra	Whole plant, Root	Phyllanthin, lintetralin, nirphyllin	16
Curcuma longa	Scitaminae	Pita, Kancani, Krmighni	Rhizome	curcumene, curdione, borneol	8
solanum surattense	Solanaceae	Vyaghri, Nidigdika	Whole plant, root, fruit	diosgenin, carpesterol, solasonine	16
Solanum indicum	Solanaceae	Mahati, Hinguli, Simhi	root, fruit	Solanine, carotene, lanosterol	16

Continued...

Clerodendrum phlomidis	Verbinaceae	Arani,Ganakarika, vataghni, tarkari	Root bark, Leaf	Apigenin,clerodin,raffinose	30
Oroxylum indicum	Bigonaceae	Tuntuka, Mandukaparna	Root bark, Leaf	Baicalein, tetulin, chrysin, p-coumaric acid	16
Pureria tuberosa	Fabaceae	Ikshugandhi, Vidari	Tuber		10
Pterocarpus santalinus	Fabaceae	Tila parna, Raktasara	Heart wood	Pterocarpol, santalin A, lupenediol	30
Prunus puddum	Rosaceae	Padma gandhi	Stem bark,seeds	Puddumin A, genistein, prunetin	30
Santalum album	Santalaceae	Gandhasara, srikhanda, sweta candana	Heart wood, Volatile oil	santenol, teresantalol, plamitone	100
Piper longum	Piperaceae	capala,vaidehi,ushana	Fruit,root	caryophyllene, piperine, sesamin	90
Pistacia integerrima	Anacardaceae	Ajashrungi,vakra,shrungi	Galls	camphene, cineol, tannins, amino acid, pistacinin	200
Mesua ferrea	Guttiferae	Naga renuka,Ahi puspā	stamens, leaf	mesuaxanthone-A/B, mammeisin, mesuarin	30
Vitis vinifera	Vitaceae	Mrudvika,Gostani	Fruit	Catechin, epicatechin, ergosterol	25
Adhatoda vasica	Acanthaceae	Vasika,basa,bagidanta, simhi	Leaf, root, flower	Vasicine,kaempferol,luteolin	12
Cyperus scariosus	Cyperaceae	Hima,raja kaseruka,ambhoda	Tuber	Cineol,copaene,sugenol	16
Curcuma zedoaria	Zingiberaceae	Drabida,beghamukhya	Kanda		25
Tricosanthes tricuspadata	Cucurbitaceae	Dhavamkshanasa	Roots, fruit		20
Cinnamomum zeylanica	Lauraceae	Utkata,tvak patra, ramapriya	Stem bark, oil	Cinnamaldehyde,eugenol, cymene	30
Cinnamomum tamala	Lauraceae	Patra,tamala patra,dala	Leaf	Eugenol,cinnamic aldehyde,Linalool	16
Cyperus rotundus	Cyperaceae	Gundra,Megha,Sugandhi	Tubers	Copaene,cyperol,isocyperol	16
Saphed gadahpurna	Aizoaceae	Shothaghni,shwetapatra, virechani	Whole plant,root		20
Elettaria Cardamom	Scitaminae	Korangi,Tripata, Dravidi	Seeds	Bornneol, heptane, myrcene	120

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Exhibit – I: 10 Leading brands of Chyavanpras

<u>10 Leading Chyavanpras brands in India (in alphabetic order):</u>	
<i>Apollo Pharmacy</i>	<i>Baidyanath</i>
<i>Brahmi</i>	<i>Dabur</i>
<i>Himalaya</i>	<i>Himani Sona-Chandi</i>
<i>Multani</i>	<i>Organic India</i>
<i>Patanjali</i>	<i>Zandu, Zandu Keshari Jivan</i>

Exhibit – II: Astanga-Ayurved Chyavanpras, Bhubaneswar: Raw material



Exhibit – III: Final product: Astang -Ayurved Chyavanpras



Exhibit – IV: Leading National Brands of Chyavanpras in India

