

# **AYURVEDIC FORMULATIONS**

## **(ASHAVA, ARITHA, KWATH, etc.)**

### **1. INTRODUCTION**

The term "Ayurveda" combines the Sanskrit words *ayur* (life) and *veda* (science or knowledge). It is one of the traditional medicinal systems, with an established history of many centuries. It is based on the belief that health and wellness depend on a delicate balance between the mind, body, and spirit.

The primary focus of Ayurvedic medicine is to promote good health and prevent illness, rather than fight disease. Other traditional systems include Siddha, Unani, Iranian, Islamic, Vietnamese, Chinese, Acupuncture, Muti, Ifá, African and other treatments all over the globe. When adopted outside of its traditional culture, traditional medicine is often called complementary and alternative medicine (CAM)

There are three kinds of ingredients used in Ayurvedic medicines:

Herbal

Mineral and

Animal

The herbal medicines dominate the practice of Ayurveda. The worldwide use of herbal products decreased in the 20th century as these were believed to be less profitable than synthetic drugs and medicines. Post 1960, increasing concerns over the side effects of the synthetic drugs and medicines led to an increase in the demand for traditional alternative medicines across the world. Herbal medicine is still the mainstay of about 60% of the world population, mainly in developing countries for their primary healthcare needs.

This potential also needs to be tapped since our country has a lot of medicinal plants, plants with essential oils and the demand in the overseas markets for its concentrates is growing fast. Since the flavourists and perfume experts are facing the challenging tasks of creating and developing complex compositions to meet the present and future consumer demand, it is also necessary to set up world standard research and development facilities in this sector.

The proposed manufacturing facility for Ayurveda research and formulations would be a GMP certified facility, licensed by the State Drug controlling authority. The facility will focus on “new generation medicines” instead of classical Ayurvedic products. This will include patented and proprietary drugs such as range of active pharmaceutical ingredients for the *Kashyas*. In addition, it will also manufacture tablets, granules and gels. The unit will have multiple sections such as pre-processing and processing section and clean room.

## 2. PRODUCT AND ITS APPLICATION

In India, alternate medicinal system, commonly referred to as “Indian system of Medicine and Homeopathy” (ISM&H) includes

- Ayurveda
- Siddha
- Unani and
- Homeopathy

This particular project profile focuses is mainly on Ayurveda



Products Aristha, Awleha, Churna, chyanpras, and taila are the common drugs of present era & these medicines may be used without doctor's prescription.

The Ayurvedic drugs are derived from vegetable sources from the various parts of the plant like root, stem, leaf, flower, fruit extract or plant as a whole.

There are about 21 varieties of compound formulations in which some of the single drugs of animal origin (52 nos.), Mineral origin (55 Nos.) and plant origin (351 Nos.) are used. The details of the single drugs and other particulars can be had from the Ayurvedic Formulary of India, published by Govt. of India, Ministry of Health and Family Welfare.

Since ancient times India is a preacher for Ayurvedic medicines and its use for mankind. Earlier their use was only confined to the rural area, but due to increasing side effects of allopathic medicines use of such type medicines increasing both in rural and urban areas and demand for Ayurvedic medicines is increasing till date. The rural areas are still using Ayurvedic medicines for the treatment of their sickness and only in chronic disease cases use to take allopathic medicines.

Products Aristha, Awleha, Churna, chyanpras, and taila are the common drugs of present era & these medicines may be used without doctors' prescription. The Ayurvedic drugs are derived from vegetable sources from the various parts of the plant like root, stem, Leaf, flower, fruit extract or plant as a whole. There are about 21 varieties of compound formulations in which some of the single drugs of animal origin (52 nos.), Mineral origin (55 Nos.) and plant origin (351 Nos.) are used. The details of the single drugs and other particulars can be had from the Ayurvedic Formulary of India, published by Govt. of India, Ministry of Health and Family Welfare.

### **3. DESIRED QUALIFICATION FOR PROMOTER**

The promoter should ideally be having formal qualifications in the field of Ayurveda (Bachelor or Diploma). A formal qualification in Naturopathy may also do. Further he / she should have experience of working in a unit manufacturing Ayurvedic medicines

### **4 INDUSTRY OUTLOOK/TREND**

The Indian herbal medicines market includes OTC, ethical and classical formulations and home remedies of Ayurveda, unani, homeopathy and siddha systems of medicines. Over the period of 2008 and 2013, the herbal medicine market in the country grew at a CAGR of 26.7%<sup>1</sup>. The growth of herbal medicines reflects the shifting trend of consumers from allopathic to herbal medicines

### **5 MARKET POTENTIAL AND MARKETING ISSUES, IF ANY**

The Indian herbal market consists of herbal products such as herbal hair care, herbal skin care & other herbal personal care products, as well as herbal medicines. The Indian herbal medicines market includes OTC, ethical and classical formulations and home remedies of Ayurveda, unani, homeopathy and siddha systems of medicines. Over the period of 2008 and 2013, the herbal medicine market in the country grew at a CAGR of 26.7%<sup>1</sup>. The growth of herbal medicines reflects the shifting trend of consumers from allopathic to herbal medicines

In India, there are about 20 well-recognized manufactures of herbal drugs and 140 medium or small-scale manufactures. In addition, thousands of vaidyas have their own miniature manufacturing facilities. About 1200 licensed small manufactures in India are on record. The estimated current annual production of herbal drugs is around Rs. 100 crores. This value is low as compared to the production allopathic pharmaceuticals, which is around Rs. 800 crores. The demand for herbal medicines is increasing and it is estimated that the production of herbal drug may be around Rs. 4000 crores in the year

2010 AD. There are 1650 herbal formulation in Indian market and number of major plants involved in their formulation is 540.

Medicinal plants have been a major source of cure of human diseases since time immemorial. Today, one fourth of the world population depends on traditional medicines. Despite the introduction of antibiotics since the 1940's, even 80 per cent of the population today relies on indigenous medicinal plants and the drugs. It is estimated that the global traditional medicine market is growing at the rate of 7-15 per cent annually. The medicinal plant value is about Rs.5000 crores in India and it is estimated that the country exports about Rs.550 crore worth of herbal drugs but with the rich and diverse botanical resources in our country, this is not an impressive export performance considering the worldwide herbal market worth US 60 billion dollars.

In order to withstand competition in the global market, it is necessary to create a brand image, especially in cosmeceuticals and natural products. Craze among the people for a slim body, fair skin as fashion is growing considerably. Out of the Rs.12, 000 crores industry, Rs.700 crores belongs to skincare products and Rs.100 crores for general cosmetics. Over and above current herbal drugs used in cardio vascular is 27%; respiratory 15.3%, digestive 14.4%; hypnotics and sedatives 9.3%; miscellaneous 12%. The perfumery industry is also around Rs. 700 crores.

The Indian herbal industry is likely to double from present Rs. 7,500 crore to Rs. 15,000 crore by 2015, according to a new study published on Friday.

The study, brought out by the Associated Chambers of Commerce and Industry (ASSOCHAM) has viewed that the domestic herbal industry will grow rapidly in the coming years and by 2015, it is expected that the size of the domestic market will rise to Rs. 15,000 crore, reflecting a compound growth rate of over 20 percent.

Releasing the study, ASSOCHAM Secretary General, D.S Rawat said that ideally, the niche market that India can focus on include Ayurvedic Medicines and Dietary

Supplements (including health drinks), extracts, Oils and other derivatives, skin care and beauty aids.

According to the study, the Indian domestic market can be broadly segmented into two categories. The first one will cover raw materials required by the industrial units and direct consumption for household remedies, whereas the second category will cover ready to use finished medicines, health supplements etc.

The study has found that there is a strong demand for raw stock which mainly comprises Amla, Isabgol, Senna, Henna, Ashwagandha, Aloe-vera and Myrobalans (Hartaki), which accounts for over 75% of the raw materials used in Ayurvedic preparations. In terms of volume, it is estimated that current consumption of the key raw ingredients (as mentioned above) totals approximately 400,000-500,000 MT.

With value addition, the market for herbal based products is around Rs.7, 500 crores, which is roughly the current size of the Indian market, it is stated.

The study points out that globally the dependence on herbal medicines, dietary supplements and skin and beauty aids will continue to gain greater share in view of the awareness and comfort level which is akin to the use of organic food products.

The ASSOCHAM study, however, is of the view out that India's share in the global herbal market is very meagre considering the country's rich source of medicinal plants and traditional treasure of knowledge in this area.

A quick estimate of the potential reveals that India can generate raw stock of around Rs. 300 billion and easily achieve around Rs. 150 billion value added products. Thus, India is hardly able to exploit less than 50% of its potential, the study adds.

Markets	Present Demand	Project Demand (for 2015)
Europe	US\$ 35 Billion	US\$ 70 Billion
North America	US\$ 6.5 Billion	US\$ 25 Billion
China	US\$ 4.0 Billion	US\$ 12 Billion
India	US\$ 1.5 Billion	US\$ 3 Billion
Others	US\$ 13 Billion	US\$ 30 Billion
Total	US\$ 60 Billion	US\$ 140 Billion

The Associated Chambers of Commerce and Industry of India (ASSOCHAM) has projected that the market size of herbal industry which is currently estimated at Rs. 7, 500 crores (Rs. 75 billion) will double to levels at Rs. 15, 000 crore by 2015 since this industry would be growing at a compounded annual growth rate of over 20% henceforth.

In a study brought out by ASSOCHAM on Herbal Industry and Global Market 2015, it is pointed out that India's rich source of medicinal plants and traditional treasure of knowledge in this area, its share at present is considered very meagre. A quick estimate of the potential reveals that India can generate raw stock of around Rs. 300 billion and easily achieve around Rs.150 billion value added products. Thus, India is hardly able to exploit less than 50% of its potential. Interestingly both raw materials (herbs) and herbal products have ready market globally.

## 6 RAW MATERIAL REQUIREMENTS

A large number of herbs, medicinal plant extracts, etc would be required for this project. This is because one particular formulation would have about 8 to 10 active ingredients. Raw materials is different type of herbal plants, mineral, sugar, honey, Bhasma etc are available indigenously and consumables including packaging materials like glass bottles, paper containers etc. is available

All the raw materials such as herbs, minerals etc. for preparation of Ayurvedic medicines are available in India abundantly, particularly in N.E. Region and Himalayan Range as a

whole. States like Gujarat also have large biodiversity and availability of medicinal plants.

## **7 MANUFACTURING PROCESS**

### **Arishta & Asava :**

Asavas and Arishtas are made by soaking the herb either in powder form or in the form of decoction (Kasaya) in a solution of sugar or jaggery, as the case may be, for a specific period of time, during which it undergoes a process of fermentation generating alcohol and facilitate the extraction of the active ingredients contained in the drugs. The alcohol so generated, also act as a preservative.

#### **a) Arishta :**

The drugs in the text are coarsely powdered and kasaya is prepared. The kasaya is strained and kept in a fermentation pot, sugar or honey according to the formula is dissolved, boiled and added. Drugs mentioned as praksepa dravyas are finely powdered and added. At the end, dhataki puspa, if included in the formula should properly clean and added. The mouth of the pot, vessel or barrel is covered with an earthen lid and the edges sealed with clay smeared cloth in seven consecutive layers. The container is kept either in special room, in an underground cellar or in a heap of paddy, so as to ensure that for duration of fermentation, as far as possible, a constant temperature is maintained, since varying temperature may impede or accelerate the fermentation. After the specified period, the lid is removed and the contents examined to ascertain whether the process of fermentation (sandhana) has been completed. The fluid is first decanted and then strained after two or three days. When the fine particles settle down, it is a strained and bottled.

#### **b) Asava :**

The required quantity of water, to which jaggery or sugar as prescribed in the formula is added, is boiled and cooled. This is poured into the fermentation pot, vessel or barrel. Fine powders of the drugs mentioned in the formula are added. The container is covered



with a lid and the edges are sealed with clay smeared cloth wound in seven consecutive layers. The rest of the process is as in the case of Arista.

### **Rasayan Rasa or Rasa Yoga :**

Ayurvedic medicine containing mineral drugs as main ingredients are called Rasa Rasayan or Rasa-Yoga. They are in pill form or in powder form. First minerals such as Abhraka. Drugs such as abhraka maksika, svarna, rajata, tamra, karmsya etc. are used only in bhasma form in these preparations. Drugs such as gandhaka, manahisila etc. are used in purified form. Where rasa and gandhaka are drugs, kajjali (Mixture of equal amount of sulphur & mercury) is prepared first with these two and then only other drugs are added in small quantities and ground in the khalva itself and mixed well. Bhavana with the prescribed svarasa, kvatha etc.; should be given to this for a prescribed period.

### **Goggula:**

Ayurvedic medicines prepared from and exudate (Niryasa) obtained from the plant commiphora mukul, are known as Goggula. There are five different varieties of goggula in Ayurvedic shastra. But usually two varieties, mahisakasa and kanaka are preferred for medical preparation. Exudate in small pieces are taken in a piece of cloth and boiled in gomutra or Dugdha or Triphala kasaya until the exudate passes into the fluid through the cloth to the maximum. The fluid after filtering is boiled till it forms a mass. After drying the mass is formed into a paste by adding ghee till it becomes waxy.

### **Taila:**

Taila are prepared by boiling prescribed kasayas (decoction) and kalkas of drugs in oils according to the formula prescribed in Ayurvedic formulary. In normal practice taila oil is used as basic oil for preparation of such Ayurvedic oils. There are generally three essential components for the preparation of sneha (ghrta or taila) viz: i) drava (a liquid which may be one or more as kasava, svarasa, dugdha, mastu, etc.); ii) kaka (a fine paste of the drug(s)); iii) sneha dravya (ghrta, taila, etc.)

**Parpati :**

First kajjali is prepared with purified Mercury and Sulphur. Other drugs mentioned in the formula are added one by one and filtered by trituration in a kshls. The powder put in iron vessel and kept over fire in the sikatayantra. A shallow pit in fresh cow dung is made and a kadali leaf or an eranda leaf is spread over the pit. When the medicine melts and becomes liquid it is poured on the lead carefully. Another leaf is covered over it and fresh cow dung is spread and gently pressed. After it is allowed to cool the flakes of the medicine are removed and powdered.

**Use of Modern Technology**

It is also necessary to integrate modern knowledge with traditional knowledge. The drugs and products of the industry are working on the scientifically defined techniques and explained with modern biological and chemical definitions and tools, and that alone will give a therapeutically active herbal original drug available for health care worldwide.

**Quality Control and Standards**

At present there is no pharmacopeial standard on each of the active ingredients of Ayurvedic medicine like allopathic medicine. For standardization and quality control of Ayurvedic drugs, various steps can be followed like physical description, physical tests, pharmacognisised techniques etc, to ascertain the species of plant and study their pharmacognostic character for the purpose of identification detection and analyzing the crude drug.

Generally quality of Ayurvedic products is fully dependent on the quality of raw materials and process of manufacture. The quality control process of some Ayurvedic formulations can be contained from 'Pharmacopica Laboratory of India Medicine, near ALTC, Ghaziabad (U.P)'. The products are to be manufactured as per Indian system of medicines of Ministry of Health.

Schedule "T" is to be followed as per Food & Drugs Administration norms.

## 8 MANPOWER REQUIREMENTS

Sr. No.	Designation	Number	Approx. Salary (Rs. per month)
1	Manager cum Manufacturing Chemist	1	10000
2	Analytical Chemist	1	7000
3	Sales representative	1	8000
4	Clerk cum Accountant	1	5000
5	Skilled Worker	2	8000
6	Unskilled Worker	3	9000
7	Peon cum Watchmen	1	4000
	Sub Total		41000
	Perks @ 15 %		6150
	<b>Total</b>		47150/- Say 47000/-

## 9 IMPLEMENTATION SCHEDULE

The implementation time required for this project will be approximately eight months after arranging the finance from the bank.

Sr. No	Activity	Time
1	Preparation of Project report	Six weeks
2	E M Registration & approval from Director of Ayurveda	One month
3	Financial/Loan from Banker or Financial Institutions	Two months
4	Power connection/Building construction Six months	One month
5	Machinery procurement & Trial run.	Two months
6	Recruitment of Staff & Labour	One month
7	Actual commercial production	One month

## 10 COST OF PROJECT

The total cost of project is estimated as below:

Sr. No	Component	Particulars	Cost ( Rs. Lakhs
1	Land	700 sq. mtrs @ Rs. 500/-	3.50
2	Building	300 Sq. mtrs @ Rs. 2000/	6.00
3	Plant & Machinery	As per list	20.00
4	Other Assets	-	1.00
5	P & P Expenses	-	0.50
6	Contingencies @ 10 %		2.60
7	WC Margin	As per separate table	1.50
	<b>Total</b>		34.70

## 11 MEANS OF FINANCE

Particular	Rs. In lakhs
Term Loan	24.00 lacs
Promoter own contribution	10.70 lacs

## 12 WORKING CAPITAL CALCULATION

Sr. No	Particulars	Duration	Estimated cost ( Rs. Lakhs)
1	Raw materials/ Packing materials	1 month	1.70
2	Working expenses	1 month	1.00
3	Finished goods	15 days	1.50
4	Receivable	7 days	0.80
		<b>Total</b>	5.00

### 13 LIST OF MACHINERY REQUIRED & SOURCES

Sr. no.	Machine	Number	Approx. Cost ( Rs. Lakhs)
1	Pulveriser with 7.5 Hp and 2.5 HP motor	4	2.40
2	Disintegrator with 7.5 Hp size with sieve of different mesh size	4	1.20
3	Wooden vessel for fermentation with lid, Cap. 50 ltrs and 100 ltrs	4	1.60
4	M.S. Vat cap. 750 kg & 1000kgs	2	1.00
5	Earthen Pots with lid for bhasma production	12 @ 2 kg each	0.60
6	Tableting machine	2	1.20
7	Bottle filling machine	2	0.60
8	Bottle Sealing Machine	2	0.40
9	S.S. mixing Vessel with stirrer Cap. Various capacities	5	1.50
10	Hot Air oven with 24 trays	1	0.70
11	Bottle washing & Drying machine	2	1.00
12	Mixing machines	3	1.20
13	Roller flakers	2	1.00
14	Water treatment plant , 100 liters capacity	1	3.00
15	QC and Testing equipments	-	3.00
	<b>Total</b>		20.00

#### Indicative Sources:

- Pharmatech Engineers, Indore
- Ambica Machineries, Vatva, Ahmedabad
- ARV Engineering, Thane

### 14 PROFITABILITY CALCULATIONS

Installed Capacity: 2.00 lakhs Tab / annum

3 lac liters p.a

Total Sales turnover: 80. 00 lakhs

Cost of production & other expenses: 64.00 lakhs

Profit: Rs. 16.00 lakhs

### **Profitability Projections (Indicative only)**

<b>Particulars</b>	<b>YEAR 1</b>	<b>YEAR 2</b>	<b>YEAR 3</b>	<b>YEAR 4</b>	<b>YEAR 5</b>
<b>Capacity utilisation (%)</b>	<b>60</b>	<b>75</b>	<b>80</b>	<b>80</b>	<b>80</b>
Production ( number - lakhs)	1.20	1.50	1.60	1.60	1.60
Sales	48.00	60.00	64.00	64.00	64.00
Expenses	38.50	48.00	51.00	51.00	51.00
Gross profit	11.50	12.00	13.00	13.00	13.00
Profit to Sales (%)	23.00	22.00	25.50	25.50	25.50

### **Key Assumptions and The basis of profitability calculation:**

As mentioned above, The Unit will have capacity of 2.00 lakhs Tab / annum 3 lac liters pa. The capacity build up is taken considering the sales related from OEM/ Retail network that is built up by the entrepreneur based on his prior experience in the industry.

This project has to have group of Ayurvedic formulations. The sales prices of these products vary. Accordingly an average sales price of Rs. 40/ per unit has been assumed. The cost of production, inclusive of major cost heads such as raw materials, labour & power has been considered based on prevailing industry standards and assumed @ 80 %.

On indicative basis, power Costs are considered at Rs 5/- per Kwh and fuel cost is considered at Rs. 50/- per liter. The depreciation of plant is taken at 10-12 % and Interest costs are taken at 12 % depending on type of industry. All these are wherever applicable.

It may be kindly noted that basis / assumptions for such kind and size of the projects in a profile can be on indicative basis only. At the same time it does provide a reasonably accurate scenario.

## **15        BREAK-EVEN ANALYSIS**

$FC \times 100 : 15.00 \times 100 = 1500$

$FC + Profit : 15.00 + 16.00 = 31$

$BEP = 48.30 \%$

## **16 STATUTORY/ GOVERNMENT APPROVALS**

Generally quality of Ayurvedic products is fully dependent on the quality of raw materials and process of manufacture. The quality control process of some Ayurvedic formulations can be contained from 'Pharmacopica Laboratory of India Medicine, near ALTC, Ghaziabad (U.P)'. The products are to be manufactured as per Indian system of medicines of Ministry of Health. Schedule "T" is to be followed as per Food & Drugs Administration norms. MSME & GST registration, IEC Code for Export of end products and local authority clearance may be required for Shops and Establishment, for Fire and Safety requirement and registration for ESI, PF and Labour laws may be required if applicable and approval from Pollution Control Board.

## **17 BACKWARD AND FORWARD INTEGRATION**

As forward integration, Entrepreneur may think of going for the production of newer dosage forms.

## **18 TRAINING CENTERS/COURSES**

For Ayurvedic & allied industry training and short term courses may be availed from the Institutions of Aurvedic Research & Education in respective states. Also EDP centers.

Udyamimitra portal ( link : [www.udyamimitra.in](http://www.udyamimitra.in) ) can also be accessed for handholding services viz. application filling / project report preparation, EDP, financial Training, Skill Development, mentoring etc

Entrepreneurship development programs help to run businesses successfully and are available from Institutes like Entrepreneurship Development Institute of India (EDII) and its affiliates all over India.

**Disclaimer:**

Only few machine manufacturers are mentioned in the profile, although many machine manufacturers are available in the market. The addresses given for machinery manufacturers have been taken from reliable sources, to the best of knowledge and contacts. However, no responsibility is admitted, in case any inadvertent error or incorrectness is noticed therein. Further the same have been given by way of information only and do not carry any recommendation.