



# Ayurvedic Dosage form



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## Ayurvedic dosage form

Liquid	Semisolid	Solid (Powder)	Solid (Tablet)
<ul style="list-style-type: none"><li>• Asava,</li><li>• Arishtha,</li><li>• Taila</li><li>• Hiama</li><li>• Kwath</li><li>• Taila</li><li>• Arka</li></ul>	<ul style="list-style-type: none"><li>• Avaleha</li><li>• Ghirta</li><li>• Lepa</li><li>• Malam</li></ul>	<ul style="list-style-type: none"><li>• Churna</li><li>• Bhasma</li><li>• Parapatii</li><li>• Kakipak rasayana</li><li>• Khsar</li></ul>	<ul style="list-style-type: none"><li>• Tablet</li><li>• Vatika</li><li>• Guti</li><li>• varti</li></ul>

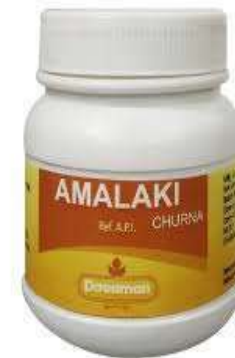
# Churnas

Churna is defined as a fine powder of drug or drugs in Ayurvedic system of medicine. Drugs mentioned in patha, are cleaned properly, dried thoroughly, pulverized and then sieved. Churna is solid ayurvedic preparation of powder of drugs with often taken with some anupan like milk, ghee, honey. fine the powder the better its therapeutic effect.

**These are two types:**

**1. Simple churana:**

It contains only one medicament.



**2. Compound churana:**

It contains two or more than two medicaments.



# Preparation of churnas

Drug mentioned in yoga are cleaned and dried properly They are finely powdered and sieved. If more than one drug are present then each one is separately powdered, sieved, accurately weighed and then all mixed together. The powder is fine to the extent of at least 80 mesh sieves. It should not adhere together or become moist. The finer powder has better therapeutic value.



## **Evaluation of churna**

**1. Description:** Colour, Odour, Taste

**2. Physical Parameter** Foreign matters

Powder microscopy

Particle size (80-100 mesh for Cuma)

Bulk density and Tap density, Hausner ratio Angle of repose

**3. Physiochemical parameter**

- *pH* (1% aqueous extract)
- Loss on drying at 105 C /Moisture content
- Total ash
- Acid -insoluble ash
- Sulphated ash
- Water- soluble extractive
- Alcohol- soluble extractive
- Crude fibre contents

#### **4. Chemical Parameter**

- a) Assay for major ingredients/Major constituents of main ingredients
- b) TLC/HPTLC/HPLC/LC-MS (with marker)
- c) Test for heavy/toxic metals Lead, Cadmium, Mercury, Arsenic (Limits as per ASU Pharmacopoeia)
- d) Pesticide residue Organo chlorine pesticides, organophosphorus pesticides, pyrethroids (Limits as per ASU Pharmacopoeia)

#### **5. Biological Evaluation:**

- a) Microbial contamination Total viable aerobic count, *Enterobacteriaceae*, Total fungal count (Limits as per ASU Pharmacopoeia)
- b) Test for specific Pathogen *Escherichia coli*, *Salmonella* spp., *Staphylococcus aureus*, *Pseudomonas aeruginosa* (Limits as per ASU Pharmacopoeia)
- c) Aflatoxins, (Bi, B2, Gi, G2) (Limits as per ASU Pharmacopoeia)

#### **4. Shelf life: Accelerated Stability study**

## Bhasma

- Bhasma in *Ayurveda* has been defined as a substance obtained by calcination.
- Use of both bhasma (Residue after incineration – calcined preparation) as well as in pishti (powdered gem or metal) form along with appropriate herbs for treatment of critical ailments is a medicinal preparation in Ayurveda and unani. Both Indian branches of medical science using natural curative methods. The procedures for preparing these medicines are time-consuming and complicated.
- Bhasma is a calcined preparation in which the gem or metal is converted into ash. Gems or metals are purified to remove impurities and treated by triturating and macerating in herbal extracts.

**Bhasmikaran:** A preparation of bhasma

*Bhasmikaran* is a process by which a substance which is otherwise bioincompatible is made biocompatible by certain *samskaras* or processes.

The objectives of samskara are :-

- a) Elimination of harmful matters from the drug
- b) Modification of undesirable physical properties of the drug
- c) Conversion of some of the characteristics of the drug
- d) Enhancement of the therapeutic action



Various steps involved in the preparation of bhasma(or bhasmikaran) are:-

1. Shodhan -Purification,
2. Maran - Powdering,
3. Chalan- Stirring,
4. Dhavan - Washing,
5. Galan- Filtering,
6. Putan- Heating,
7. Mardan- Triturating,
8. Bhavan- Coating with herbal extract,

## Steps of bhasmikaran

**1.Shodhan:** The principle objective of shodhan is to remove unwanted part from the raw material and separate out impurities( Vaiday and Dole 1996b). Metals obtained from ores may contain several impurities, which are removed by subjecting them to Shodhan process. In context of bhasma, shodhan means purifying and making the product suitable for the next step i.e. Maran. Ayurveda classifies shodhan into

- a) General process and
- b) Specific process.

- a. General process for shodhan: “ The sheets of metals are heated till red hot and are successively dipped into liquids like oil, buttermilk, cow’s urine etc. The procedure is repeated seven times”.
- b. Specific process for shodhan For some metals a specific process is described for shodhan e.g. for purification of Jasad, the molten mass is poured in cow’s milk 21 times .

## **2.Maran**

Maran literally means killing. As the name suggests in maran process, a change is brought about in the chemical form or state of the metal. This makes it to lose its metallic characteristics and physical nature. In short, after maran, metal can be converted into powder or other form suitable for administration. To convert various metals into a form appropriate for human consumption which ultimately gave birth to concept.

Bhasma prepared by using Rasa i.e. mercury is the best, whereas the one prepared using herbs are of better quality and those prepared using Gandhak (sulfur) are of inferior quality. Thus there are 3 methods given for maran. It is carried out by heating the metal in presence of

- 1) Mercury
- 2) Plants and
- 3) Sulfur

When various maran procedures for different metals were reviewed, it was found that mercury is mainly used. The unique property of mercury to amalgamate with many metals must have been the reason behind its maximum use in the process of Bhasmikaran. Ancient practitioners might have found it as the most suitable chemical and therefore probably have mentioned that bhasmas using mercury are superior. Plants used in maran process may be serving as catalyst in the process or the minerals in the plants may be forming complexes with the metals. However, no such explanation can be obtained for the use of sulfur.

**3.Chalan:** Process of stirring during heating the metal is chalan. Stirring is carried out either with iron rod or stick made from a specific plant. As we know today, iron serves as catalyst in many chemical reactions.

The phytoconstituents of plant stick may be enhancing the therapeutic effect. For example, stick of Neem is used for chalan process of Jasad bhasma, which is used topically for ophthalmic diseases. We can interpret the significance of this process now. Neem is an antiseptic. Zinc is antiseptic , astringent and has ulcer healing property These effects of both the constituents may impart the final product better therapeutic activity.

#### **4. Dhavan:**

In this process, several water washes are given to the product obtained in the previous stage. Perhaps this is to remove the excess amounts of agents used in shodhan or maran stage. Such agents may adversely affect the quality of final product. Hence intermediates are washed with water, thereby water soluble constituents are removed .

**5.Galan:** The product is then sifted either through a fine cloth or through sieves of suitable mesh so as to separate residual material larger in size

## **6.Puttan:**

The term puttan means ignition. The general term used for heating in the process of Bhasmikaran is puta. A special earthen pot, Sharav is generally used for the process. It has two parts, each having a shape of soccer. Sharav is used for direct heating of the material. Its shallowness is useful in heating the material faster and uniformly. After keeping the material on the shallow surface, other part is used as a lid, by placing it in an inverted position.



## Evaluation of Bhasma

**1. Description:** Colour, Odour, Taste

**2. Physical Parameter**

- Particle size
- Nishchandrica (Lusterless)
- Rekha pumatva (Fine enough to enter within lines of finger)
- Varitara (Floats on water)
- Nirthoom (Smokeless)
- Niswadu (Tasteless)
- Apumar Bhav (Irreversible)

**3. Physiochemical parameter**

- *pH* (1% aqueous extract)
- Loss on drying at 105°C /Moisture content
- Total ash
- Acid -insoluble ash
- Sulphated ash
- Water- soluble extractive
- Alcohol- soluble extractive

#### **4. Chemical Parameter**

- Assay for element(s) (if available)
    - Test for heavy metals like arsenic copper
  - IR/XRF/XPS/XRD/SEM/EDX/AFM (As per requirement)
- 5. Biological Evaluation:**
- 6. Shelf life:**  
Accelerated  
Stability study

## **Asava/Arishta**

**Asava/Arishta** are the ayurvedic dosage form processed by soaking the drug in powdered form / decoction form, in a solution of sugar or jaggery for a specific period of time to undergo fermentation

Arishta or Asava treatment is suggested for a variety of diseases and conditions



## **Properties:**

- It should be Clear
- No foam should be produced
- Should not become sour on standing
- It has characteristic, aromatic & alcoholic odour
- During fermentation, Alcohol is produced which facilitates extraction of active constituents contained in the drug
- Alcohol also serve as preservative in the product
- Earlier, The wooden pots are fumigated with pippali powder and also smeared with ghee before the fermentation liquids are pour into them

## **Shelf Life:**

- Much longer time / no expiry date

## **Storage Conditions:**

- Should be stored in air tight container
- Narrow mouthed
- Store in cool place
- Away from sunlight



Marketed Preparations:

Asavas	Arishtas
Kumariasava	Dashmularishta
Madhukasava	Draksharista
Punarnavasava	Idangarista
Chandanasava	Asokarishta

## Evaluation of Asava and Arista

1. **Description:** Colour, Odour, Taste, Apperance

2. **Physical Parameter**

Specific gravity/ Weight/ml

Refractive index

Viscosity

Optical rotation

3. **Physiochemical parameter**

*pH* value

Total Solid Content



#### **4. Chemical Parameter**

- a) Total acidity by Acid value
- b) Total Alcohol Content
- c) Non reducing sugars
- d) Test for methanol
- e) Reducing sugars
- f) GLC/TLC/HPTLC/HPLC/GC-MS (any one of all)
- g) Test for heavy/toxic metals like Lead, Cadmium, Mercury, Arsenic (Limits as per ASU Pharmacopoeia)
- h) Pesticide residue: Organo chlorine pesticides, organophosphorus pesticides, pyrethroids (Limits as per ASU Pharmacopoeia)

#### **5. Biological Evaluation:**

- a) Efficacy and Toxicity Study
- b) Microbial contamination Total viable aerobic count Enterobacteriaceae  
Total fungal count (Limits as per ASU Pharmacopoeia)
- c) Test for specific pathogen Escherichia coli, Salmonella spp., Staphylococcus aureus, Pseudomonas aeruginosa (Limits as per ASU Pharmacopoeia)
- d) Aflatoxins ( B<sub>1</sub>, B<sub>2</sub>, G<sub>1</sub>, G<sub>2</sub> ) (Limits as per ASU Pharmacopoeia)

#### **6. Shelf life**

# Lehya/ Avaleha

**Avaleha** or **Lehya** is a semi-solid preparation of drugs, prepared with addition of jaggery, sugar or sugar-candy and boiled with prescribed juices or decoction or pulp



## **Method of preparation**

The Avaleha preparation involves following

1. Kasaya or other liquids
2. Jaggery, sugar or sugar-candy
3. Powders or pulps of certain drugs
4. Ghee or oil or Honey.

### **Procedure:**

Decoction is prepared, strained it. Jaggery, sugar or sugar-candy is dissolved in the decoction or liquid mentioned in formulas and strained to remove the foreign particles. This solution is boiled over a moderate fire. When pressed between two fingers if paka becomes thready (Tantuvat), or when it sinks in water without getting easily dissolved, it should be removed from the fire. Fine powders of drugs are then added in small quantities and stirred continuously to form a homogenous mixture. Ghee or oil, if mentioned, is added while the preparation is still hot and mixed well. Honey, if mentioned is added when the preparation becomes cool and mixed.

## **Characteristics**

The Lehya should neither be hard nor a thick fluid. When pulp of the drugs is added and ghee or oil is present in the preparation, this can be rolled between the fingers. When metals are mentioned, the bhasmas of the metals are used. In case of drugs like **Bhallātaka**, purification process is to be followed.

## **Preservation**

- The Lehya should be kept in glass or porcelain jars. It can also be kept in a metal container which does not react with it. Normally, Lehyas should be used within one year.

## Evaluation of Avleha

1. **Description:** Colour, Odour, Taste, Apperance

2. **Physical Parameter**

Specific gravity at 25°C

Consistency(Viscosity)

3. **Physiochemical parameter**

- a) Loss on drying at 105 C / Moisture content
- b) Total ash
- c) Acid- insoluble ash
- d) Alcohol- soluble extractive
- e) Water -soluble extractive
- f) *pH* (10% aqueous extract)
- g) Total acidity
- h) Total solid content



#### 4. Chemical Parameter

- a) Fat content
- b) Reducing sugar/ Non-reducing sugar
- c) Total sugars
- d) Assay for major ingredients/Major constituents of main ingredients
- e) TLC/HPTLC/HPLC/LC-MS (any one or all)
- f) Test for heavy/toxic metals Lead, Cadmium, Mercury, Arsenic (Limits as per ASU Pharmacopoeia)
- g) Pesticide residue Organo chlorine pesticides, organophosphorus pesticides, pyrethroids (Limits as per ASU Pharmacopoeia)

#### 5. Biological Evaluation:

- a) Microbial contamination Total viable aerobic count, *Enterobacteriaceae*, Total fungal count (Limits as per ASU Pharmacopoeia)
- b) Test for specific Pathogen *Escherichia coli*, *Salmonella* spp., *Staphylococcus aureus*, *Pseudomonas aeruginosa* (Limits as per ASU Pharmacopoeia)
- c) Aflatoxins, (Bi, B2, Gi, G2) (Limits as per ASU Pharmacopoeia)

#### 6. Shelf life: Accelerated Stability study



*Thank you*



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