

PREPARATION AND STANDARDIZATION OF AYURVEDIC FORMULATIONS

Arishtas

Arishtas are prepared by the process of fermentation for a specific time period after boiling the main decoction substance and adding other ingredients.

Arishta is an ancient medicinal preparation mentioned in the vedas, having Ayurvedic medicines.

Example:- Dasmularishta, Balarishta

ARISTA PREPARATION

Crude Drug mention in the formula

↓
Crude drug is coarsely powdered

↓
Decoction(kasaya) is prepared and strained

↓
Transferred to Fermentation Vessel/pot/barrel

↓
Solution of Sugar, Jaggery or Honey is added (Heated to Dissolve)

↓
Any other additive/prakshepa dravya added along with Dhataki pushpa(*Woodfordia fruticosa*) added(if mentioned)

↓
• Close the earthen lid sealed edges with clay smeared cloth edges sealed with clay-smeared cloth wound in seven consecutive layers.

↓
Fermented at constant temp

↓
Set aside to settle down matter

↓
Fluid decanted & filtered

↓
Boil to avoid further fermentation

↓
Filled in bottle and sealed

Asavas

- ▣ Asavas are a famous ancient medicinal preparation mentioned in the Vedas.
- ▣ Asavas are prepared by the process of determination for a prescribed time after mixing all the specified ingredients with required quantity of unboiled water.
- ▣ Example:- Kumaryasava, punarnavasava, Madhuhukasava

ASAVA PREPARATION

Crude Drug mention in the formula



Crude drug is coarsely powdered



Transferred to Fermentation Vessel/pot/barrel



Solution of Sugar, Jaggery or Honey is added (Heated to Dissolve)



Any other additive/prakshepa dravya added along with Dhataki pushpa (*Woodfordia fruticosa*) added (if mentioned)



- Close the earthen lid sealed edges with clay smeared cloth edges sealed with clay-smeared cloth wound in seven consecutive layers.



Fermented at constant temp



Set aside to settle down matter



Fluid decanted & filtered



Boil to avoid further fermentation



Filled in bottle and sealed

Precaution

- If the fermentation is to be carried in an earthen vessel, it should not be new.
- Water should be boiled first in the vessel. Absolute cleanliness is required during the process.
- Each time, the inner surface of the fermentation vessel should be fumigated with Pippali churna and smeared with ghee before the liquids poured into it. (In large scale manufacture,
- wooden-vats, porcelain-jars or metal vessels are used in place of earthen vessels).

Properties:

- Should be Clear
- No froth 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

Standardization of Asavas and arista

1. Physical appearance
2. Alcohol content
3. Water soluble extractive
4. Alcohol soluble extractive
5. pH
6. Total solid
7. Density
8. Viscosity
9. Surface tension
10. TLC profile

Gutikas

- ❑ Gutikas are available as medicated pills, prepared by combining the vegetables, mineral or animal drugs together.
- ❑ Gutikas should be consumed within two years.
- ❑ The pill forms of gutikas having mineral ingredients can be used for life long.
- ❑ **Preparation:-**
- ❑ Drugs obtained from plants are separately dried and finely powdered. The minerals are made into bhasmas or sindura.
- ❑ When parada and gandhaka are stated , kajjali is made first and added with other drugs one at a time as given in the formula.
- ❑ This mixture is grounded properly in khalva to yield a soft paste containing the prescribed fluids.
- ❑

- ▣ The mass after reaching a condition that it can be casted as pills is again grounded with added sugandha dravyas like kasturi karpura.
- ▣ The mass obtained should not stick upon rolling between the fingers.
- ▣ The mass is shaped into many pills, which are dried in shade or in sun.
- ▣ If sugar or jaggery is added , paka is vigorously mixed.
- ▣ In warm state, vatakas should be rolled and shade dried.
- ▣ Pills of plant origin are stored in air-tight containers and should be consumed within two years.

- ▣ Pills of mineral origin can be used indefinitely.
- ▣ Gutikas should retain their original colour, odour and taste after formulation.
- ▣ Gutikas containing salt or sugar should be prevented from moisture.
- ▣ **Standardization:-**
- ▣ Organoleptic parameters
- ▣ Total sugar
- ▣ Reducing sugar
- ▣ Phytochemical assessment
- ▣ Particle size

- ▣ Identification: Microscopy, HPTLC & TLC
- ▣ Test for Heavy metals & toxins
- ▣ Microbial contamination
- ▣ Pesticide residue
- ▣ **Physical evaluation:**
- ▣ Ash value
- ▣ Acid insoluble ash
- ▣ Water insoluble ash
- ▣ Alcohol soluble extractive
- ▣ pH
- ▣ Volatile oil

- ▣ Melting temperature
- ▣ Loss on drying
- ▣ **Pharmaceutical parameters:-**
- ▣ Hardness
- ▣ Uniformity in weight
- ▣ Uniformity in diameter
- ▣ Friability test
- ▣ Dissolution time
- ▣ Disintegration time

CHURNAS

- ▣ Churnas are finely powdered drug.
- ▣ Drugs stated in patha are first cleaned dried , pilverised , and then seived.
- ▣ Churnas are stored in air-tight containers to mentain their potency and free flowing nature for a year.
- ▣ **Preparation:-**
- ▣ The drug prescribed in the yoga is cleaned, dried, finely powdered and sieved.
- ▣ In case of many drugs, each drug is separately

- ▣ Powdered, sieved and weighed, followed by mixing together all the resultant powder.
- ▣ For large scale production, all the drugs are cleaned, dried, powdered together in disintegrators and then screened through mechanical sifters.
- ▣ The powder should be made fine enough to pass through 80 mesh sieve.
- ▣ The powder particles should not adhere or become moist.

- ▣ The therapeutic efficacy of fine powder is comparatively better.
- ▣ **Standardisation:-**
- ▣ Determination of sieve size
- ▣ Loss on drying/ moisture content
- ▣ TLC
- ▣ Acid-insoluble ash
- ▣ Water-soluble ash
- ▣ Extractive value in water, alcohol and other solvents
- ▣ Phytoconstituents

- ▣ Microbial contaminations
- ▣ Heavy metal limit test for mercury, arsenic, cadmium and lead
- ▣ Microscopic analysis

LEHYAS

- ▣ Lehyas is a semisolid drug product prepared by adding sugar, jaggery or sugar candy to the drug and further boiling with drug juice or decoction.
- ▣ **Preparation:-**
- ▣ Lehyas are prepared by dissolving jaggery or sugar candy in liquid, followed by moderate boiling and straining the obtained mixture to remove impurities.
- ▣ Boiling is stopped when the paka becomes thready on pressing between two fingers or if it sinks in water without getting dissolved.

- ▣ Small quantities of the fine powdered drugs are added and stirred in a constant and vigorous manner to yield a homogeneous mass.
- ▣ The hot preparation is added and properly mixed with ghee or oil; while if honey is to be added the preparation should be first cooled.
- ▣ **Standardisation:-**
 - ▣ Loss of drying
 - ▣ Ash values
 - ▣ Extractive values

- ▣ pH
- ▣ TLC

Bhasmas

- ▣ Bhasmas are grey, whitish, yellowish or black coloured powdered form of substances.
- ▣ These can be obtained from metals, minerals or animal sources by a process named calcination carried out in closed crucibles or pits covered with cow dung cakes.
- ▣ They are typically stored in glass containers.
- ▣ Bhasmas are stable and retain their potency for a long time.

▣ **Preparation:-**

- ▣ Bhasmas are prepared in two steps, namely sodhana and marana.
- ▣ These are time consuming processes and require attention:
- ▣ First stage(sodhana):
- ▣ Bhasmas as already known are obtained from minerals, metals, marine and animal products.
- ▣ Sodhana is a purification process which is of the following two types:

- ▣ **Samanya sodhana:-**

- ▣ In this method, thin metal sheets are heated and immersed in taila, takra, gomutra, etc.

- ▣ This method can be used for large number of metals or minerals.

- ▣ **Visesa sodhana :-**

- ▣ This method can be used for some drugs and preparations.

- ▣ **Second stage (marana):-**

- ▣ This second stage of bhasma preparation occurs in the following steps:

- ▣ The purified drug is grounded for a specified time with juices of particular plants or kasayas of drugs in a stone mortar and pestle
- ▣ Small cakes are prepared from the obtained mixture.
- ▣ These cakes are sun dried and arranged in a shallow earthen plate as a single layer.
- ▣ Thereafter the plate is closed with another plate, edges are sealed by windig clay-smearred cloth in seven consecutive layers, and then it is dried.

- ▣ A pit is formed in an open space and filled with cow dung cakes up to the half level.
- ▣ The sealed earthen container is kept in the pit and more cow dung cakes are added to fill up the remaining space.
- ▣ All the four sides and the middle of the pit are put on fire.
- ▣ After complete burning, the pit is cooled the earthen container is taken out, opened and its contents are removed.
- ▣ The content if required is again grounded with juice in a khalva to yield a fine powder, from which cakes are made, and putas are obtained.

- ▣ Bhasmas are yellowish, black, dark, white, grey, red or reddish black in colour as per the major drug and the other drugs in the process of marana.

STANDARDIZATION OF BHASMA

- **Organoleptic characters**
- **Sound** : The Bhasma should have imperceptible sound
 - on grinding the Bhasma between teeth.
- **Colour** : depends
- **Touch** - Soft ~ Imperceptible coarseness in the Bhasma
- **Taste** - should be tasteless
- **Odour** -should be odourless



- **Physico-chemical parameters**
- pH :
- Ash Value (AV):
- Acid Insoluble Ash (AIA) :
- Particle Size Distribution
- X-ray Diffraction
- Inductively Coupled Plasma – Emission Spectroscopy
- UV-Visible Spectrophotometry

