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A COMPREHENSIVE REVIEW ON ASAVA AND ARISHTA: THE AYURVEDIC PREPARATION

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ABSTRACT

Ayurved has a long and strong heritage use of poly herbal drugs and formulations to treat various diseases. It comprises various types of medicines including fermented forms, namely asavas and arishta. They are alcoholic medicaments prepared by allowing the herbal juices or their decoctions to undergo fermentation with the addition of sugars. Asava and arishta are very popular forms of Ayurvedic system of medicine because of certain special properties which make them more beneficial than other preparations. They are effective, palatable, stable and most importantly they have no any side effects. The present paper gives an account of update information about asava and arishtas, different parameters that are use for standardization and preparation of marketed formulations of asava and arishtas.

KEYWORDS: Ayurvedic system, Asava, arishta, formulations.

INTRODUCTION

Asava and Aristas are the medicinal preparations processed by soaking the drugs in the powdered forms or in the form of there decoction (known as kasaya in ayurveda), in a solution of sugar and jaggery (Gur), for a specified period of time. During soaking, it undergoes fermentation generating alcohol and in process facilitating extraction of active constituents contained in the drugs. Alcohol so generated also serves as a preservative in the product.

Examples: Kumariasava, Madhukasava, Punarnavasava, Arvindasava, Chandanasava, Kanakasava, Lohasava, Kutari-sta, Draksharista, Dashmularista, Vidangarista, Ashokarista, Khadirarista.

PROPERTIES OF ASAVA AND ARISHTA

i. These formulations are very stable the bioactive products of fermentation are continuously exposed to a low concentration of alcohol. Indeed, the medicinal properties of Asava and Arishta are thought to increase with time.
ii. The constant presence of alcohol in these formations may detoxify certain phytochemicals and increase the potency of others.
iii. These fermented extract rapid therapeutics effects at low doses. Thus, the aqueous nature of the extract may promotes increase uptake of the drug by the target organs. Improvement inthe efficiency the extraction of drug molecules from the herbs and it also improves in drug delivery in the human body sites.
iv. They are moderately alcoholic (up to 12 % by volume) and mostly sweetish with slight acidic and agreeable aroma.

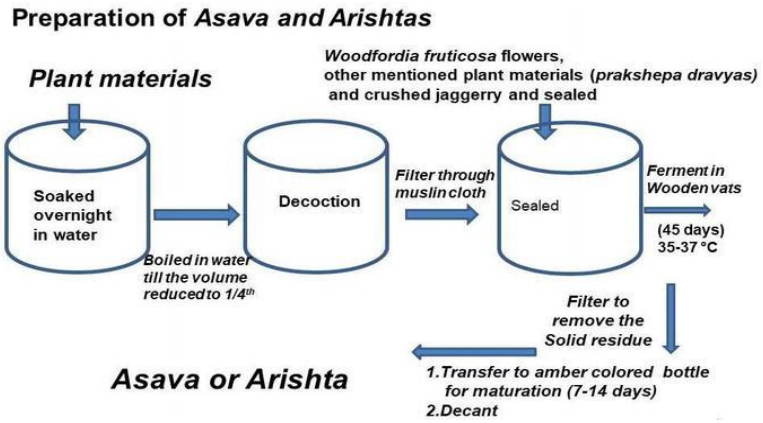
REQUIREMENTS

- The basic equipment required is an earthen pot sufficiently large and strong with gazed exterior or gazed porcelain jar of suitable size, a lid of the correct size to close the vessel, a cloth to seal the vessels, a paddle-like stirrer, a clean cloth of fine and strong texture for filtering, vessels to keep the juices or boil the drugs.
- The major components are divided into four type according to specific role in the in the process. These included:

1. The main herbs from which the extract or decoction is taken out as the case may be.
2. The name of medicine is derived from these herbs denoting there importance.
3. The flavouring agents are herbs, besides contributing to the flavour of the medicine have their pharmacological action.
4. The fermentation initiator (Woodfordia fructicosa) provide inoculums for the fermentation to start. The

medium of sugar (Jaggery) id required for the fermentation.

- In Ashokarista the main herbs is ashoka (Saraca asoca), those contributes for flavour are Jeera (Cuminum cyminum), Chandan (Santalum album) Ginger (Zingiber officinale) etc.



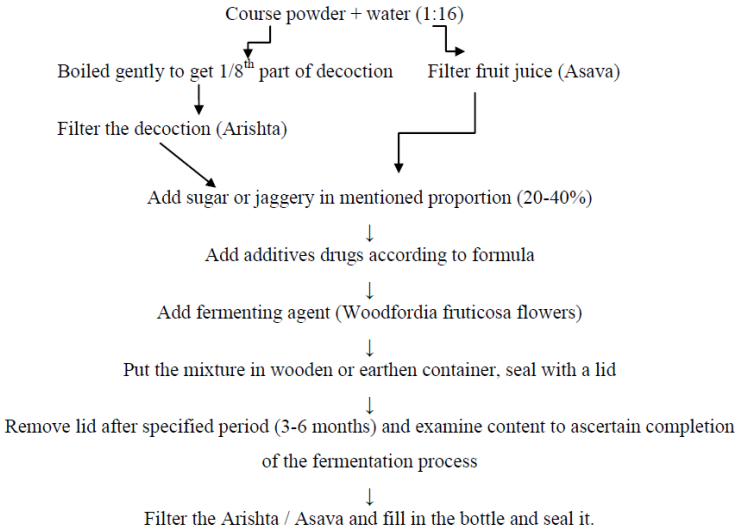
The method of preparing Asava and Arishta is termed as Sandhana Kalpana, in Ayurveda Sandhana is fermentation. General method used for the extraction of medicinal plants in asava and arishta are infusion and decoction.

1) Preparation of Arishtas

- The drug is coarsely powdered and kasaya is prepared, strained and then kept in a fermented vessel.
- Sugar, jaggery or honey, is dissolved, boiled and added as per the prescribed formula. At the end, dhaiphool/dhataki or madhukapushpa are added as per the formula.
- The mouth of the vessel is covered with an earthen lid.
- The edge sealed with a clay-smeared cloth and covered in seven consecutive layers.
- A constant temperature is for fermentation by keeping the vessel either in an underground chamber or in a pile of paddy.
- The lid is removed after a specified period and the contents are examined to ensure completion of fermentation.
- Now fluid is decanted and strained after two or three days. When the fine suspended particles settle down, arishta is filtered to ensure no particles shall sediment in the glass bottles after transfer.

(2) Preparation of Asavas

- The jaggery or sugar is dissolved in the quantity of water, boiled and cooled.
- This is poured into the fermentation vessel. Fine powder of the drugs are added in the container which is covered with a lid and the further procedure is same as that followed in the preparation of Arishta.
- The protocol for the preparation of arishta and asava is shown in following figure.



Standardization of Asava and Arishta

Standardization of asava and arishta is broadly divided into three categories:

1) Approach related to raw material and equipment.
2) Approach related to standardization of the manufacturing process.
3) Approach related to standardization properties and quality of end product.

(1) Approach related to raw material and equipment

- The quality of raw material, herbs and other ingredients used for these preparations have a strong bearing on the process and the finished product. The raw material for these preparations must be authenticated and examined for required quality.
- Testing of limits of heavy metals, microbial and residual pesticides are envisaged as these will have an impact on the main fermentation process and certain impurities may get retained through the process.
- The right storage condition should be followed for these raw materials before being taken up for the main production process.

The type of equipment used, the material used for fermentation and storage vessels, treatment methods, temperature and storage condition are the factors that will impact the process.

(2) Approach related to standardization of manufacturing processes

The three most relevant parameters for the standardization of asava and arishta are:

i. Effect of temperature
ii. Fermentation time
iii. Use of various vessels and fermentation conditions

Effect of temperature

- Temperature effect the process of fermentation. The specific gravity, total solids and total sugars are less in the cold arishta than hot arishta. When arishta is cooled after fermentation of decoction, the alcohol is generated whereas no alcohol is found on the day of filtration.
- Lower pH values and higher titratable acidity can be observed in arishta prepared from decoction with heat than cold one from fresh juice. In high temperature, the yeast cells destroy; hence it is not favourable for the fermentation process. In less temperature yeast cells do not destroys.

Fermentation time

Effect of keeping the arishta over long period results into fall into specific gravity, total solid content and sugar contents, with increasing time. The corresponding increase in the alcohol content can be obtained maximum in six months. However the pH remains constant.

Use of vessels and preparation conditions

- Material like glass, aluminium, tinned-copper, stainless steel, porcelain jars and earthen pots can be used for different preparations of asava and arishta, no change in TLC pattern and analytical values of arishtas obtained from decoction prepared in different material vessels.
- Vesel of tinned-copper were a better choice for the fermentation process. However, the decoction prepared in aluminium vessel shows the presence of traces of aluminium.
- In glass vessels and earthen pots, there is a no significant difference in quantum or alcohol production. Preparations in glass vessels will be more acidic than those from an earthen pot.

(3) Approach related to standardization of properties and quality of the end product

This includes

i. Organoleptic evaluation:
ii. Physical and chemicals parameters
iii. Analytical studies

i. **Organoleptic evaluation**: The colour, odour and taste of the formation are evaluated. The asava and arishta are clear liquid without any froth. They possess the pleasant aromatic odour of alcohol with a slightly sweet taste. It should be noted that they should not have a sour taste.
ii. **Physical and chemical parameters**: Physicochemical properties like total solid content, specific gravity, pH, density, extractive value, viscosity, surface tension, refractive index. The phytochemical screening for tannins, alkaloids, reducing sugars, non-reducing sugars, alcohol and total sugar are commonly used parameters for standardization of asava and arishta. Iron, magnesium, calcium, phosphate, sulphates, ash value, sodium and potassium are also done.
iii. **Analytical studies of asava and arishta**:
iv. Thin layer Chromatography (TLC) technique is used to test asava and arishta. Studies have also conducted for quantitative analysis of nitrogen content, proteins and lipids as additional test parameters.
v. Apart from all the evaluation parameters the dertermination of alcohol content is very important therefore it has been described here.

Determination of alcohol content in Asava and Arishtas

- The alcohol generation facilitates extraction of active constituents present in plant drugs. Self-generated alcohol also supports presentation and have better therapeutic properties.
- Total alcohol content of fermented herbal preparation can be determined by the specific gravity of distillate which involves distillation of formulation and then the measurement of specific gravity.

- This method is laborious, time-consuming and also have less accuracy. Other techniques used are electric ebulliometer and gas chromatography. These have involvement of costlier equipment.
- Arishta are brown liquid due to presence of tannins and phenolic compounds in plants. Hence these method employ solvent extraction of ethanol from arishta followed by measurement of alcohol by UV-Visible spectroscopy (UV-VIS) using acid dichromate solution.
- When alcohol (ethanol) present in an aqueous solution, chromium ions oxidize ethanol and these ions are reduced from +6 oxidation state to +3, changing the colour from orange to green. (OD at 595 nm).
- This method is convenient technique for measurement of alcohol in arishta comparison of it with quantitative determination by specific gravity of distillate.

Marketed formulation of Asavam and Arishta and their therapeutic action.

Marketed Formulations	**Therapeutic action**
Baidyanath dashmularishta	Analgesic, Antimicrobial, Antioxidant and Anti-inflammatory effects
Kerala Ayurveda Chandanaasavam	Anabolic, Appetizer, Carminative, Refrigerant and Diuretic
Dabur Ashwagandharishta	Useful in nervous disorders improves memory, Anti-epileptic, used in insanity, infertility and in piles. Also act as anti-anxiolytic.
Dhootapaprshwar Saraswatarishta	Useful in strengthening the heart, increasing longevity, and boosting the cognitive abilities and memory process of the individual
Nagarjuna Ashokarishtam	Menstrual cycle regulator, especially to control excessive bleeding for prolonged period in menstrual cycle, urinary disorder.
Baidyanath Arjunarishta	Cardiotonic
Baidyanath Drakshasava	Constipation
Patanjali Ayurveda Lohasava	Anemia, Piles, spleen disorder, diabetes, Asciyes
Dabur Aswagandharishta	Weakness, appetizer
Patanjali Mahamanjisthadyarishta	Sexual stimulating tonic, Weakness
Baidyanath Khadirarishta	Cancer
Patanjali divya Kutjarishta	Fever
Devadarvyarishta	Diabetes
Dabur Amritarishta	Malaria
Sirisharishta	Poisonous bites
Basic Ayurveda Srikhandasava	Alcoholism
Vasakasava	Leprosy
Baidyanath Loharishta/Lodhrasava	To reduce obesity
Kerala Ayurveda Balarish/Dvadarvyarishta	Rheumatism

CONCLUSION

Arishta and asava are considered as best formulation in Ayurveda because they posses better keeping quality, which is likely due to the contribution of fermentation to preservation. The microbes involved in this process mediate this process; enhanced therapeutic properties, which may be due to the microbial biotransformation of the initial ingredients of arishta and asava into more effective therapeutics as end products, alcohol-aqueous milieu, which is also produced by microbes; improvement in drug delivery in the body is also increases due to alcohol-aqueous milieu. These products in general possess preservative properties, potentization of drug due to biotransformation mediated by native microbes.

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