

ASAVA'S & ARISHTAS – THE HERBAL WINES OF THE AYURVEDIC THERAPEUTIC ARMOURY.

by Vikrama

Introduction

Ayurvedic therapeutic agents are of diverse types. They include herbal teas, infusions, decoctions, tinctures, capsules and powders, infused oils, ointments creams and lotions as well as *Asavas* and *Arishtas*.

Asavas and *Arishtas* are the fermented biomedicines of the Ayurvedic system, and their production process is unique. It is called *Sandana Kalpana* or autofermentation. In these auto-generated fermentations based on traditional Ayurvedic technology, the herbal juices as in the case of *Asavas* and the aqueous herbal extracts as in the case of the *Arishtas*, are permitted to undergo fermentation generating alcohol in situ, to enable completion of a progressive extraction process.

Asavas are prepared by directly using fresh herbal juices and *Arishtas* are made with decoctions of herbal materials in boiling water. In both instances fermentation is promoted by the addition of a supplementary source of sugar and facilitated with the flowers of *Woodfordia fruticosa* Kurtz, or sometimes, sans any agent to force the development of the yeast to aid the fermentation process.

The diverse physical nature of herbs which include leaves, fruits and flowers which are soft and juicy and roots, barks and heartwoods make the technological aspects difficult, particularly in the comminution of the material.



These medicinal wines or herbal tonics as they are called in modern terminology, generated from the diverse mixtures of herbs by autofermentation, generally contain 10-12% alcohol. They are named after a major plant or group of plants that characterize the mixture from which the preparation is made. Many of them contain various spices too, added for flavor or to augment the medicinal value by synergistic action. They are generally sweetish with a pleasant agreeable taste and aroma. The medicinal wines are used as tonics and do have several advantages over other Ayurvedic preparations. They

are deemed to have superior keeping qualities and are to possess better bioavailability and thereby better therapeutic value. It is argued that the fermentation process wherein alcohol is generated in situ in slow fashion in progressively increasing quantity, enables better extraction of the drug molecules from the plant material, and further it is felt that the preparation is a more facile drug delivery system into the human body. They are an important part of Ayurvedic therapy.

Features of the Therapeutics of Ayurveda.

According to Ayurvedic theory the main objective of a health care system is to enable the individual to attain the body's own characteristic state of optimal health. This is known as *Swasthiya*. This state presupposes that several states of equilibria are achieved namely the following:

- Structural & Physiological equilibrium or *Samadasa*
- Equilibrium of metabolic processes or *Samagni*.
- Equilibrium of body tissues or *Samadhatu*
- Equilibrium of the elimination systems or *Samamalkriya*
- Equilibrium of the senses or *Prasannandriya*
- Equilibrium of the mind or *Prāsanamana*
- State of contentment or *Prasannathma*

Ayurveda also recognizes a mandatory daily routine and a seasonal routine for the prevention of disease known respectively as: *Dinacharya* and *Ritacharya*.

Ayurveda recognizes the variations between individuals and the diagnosis is based on its main *Tridosha* theory or the theory of the equilibrium of the three humours. *Vata*, *Kapha* and *Pitta*. Disease results from the disturbance of the equilibria. (Vide Link Natural Digest No.2-2011)

Technology of Asava and Arishta Processing

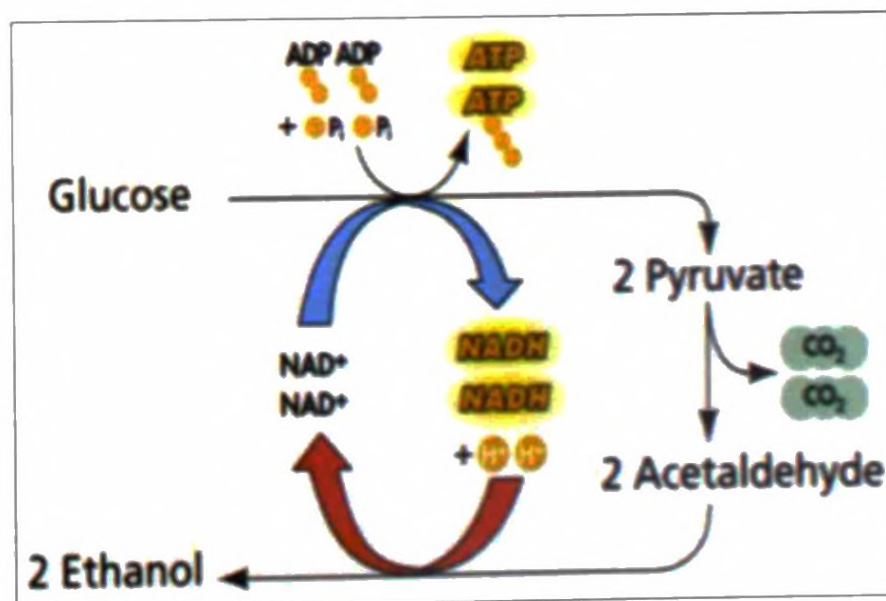
The preparation of *Arishtas* and *Asavas* by traditional technology was originally carried

out using clay vessels with a glazed exterior and later replaced with porcelain vessels. The vessels had suitable lids as covers with a paddle as a stirrer. The main process is an auto-fermentation with simultaneous extraction of the medicinal factors into an aqueous alcoholic medium. It is known in Ayurvedic terminology as: *Sandana Kalpana*. In modern factories the process of *Sandana Kalpana*, has been carefully simulated with modern process technology. Now the process is conducted in stainless steel equipment and the fermentation technology observes the modern trends developed as in the case of the production of wines.

Briefly the original Ayurvedic technology of *Sandana Kalpana* consisted of the following operations:

- Making a decoction or cold infusion of the coarsely powdered, prescribed herbs.
- Addition of a measured quantity of a sugar source such as jaggery, (from molasses or Kithul palm), together with flowers of *Woodfordia fruticosa* as an inoculum to initiate fermentation.
- The substrate mixture is placed in a vessel - a Clay Pot in the traditional mode, (now a stainless steel vessel in the modern mode), for fermentation by anaerobic method.
- After fermentation followed by maturation, flavoring agents are added.
- The substrate is stored for a time in a cool room, filtered, and bottled, and ready for the consumer.

Principle of the Sandana Kalpana technology.



Science of the Process of fermentation



Sorting & checking the herbs before extraction

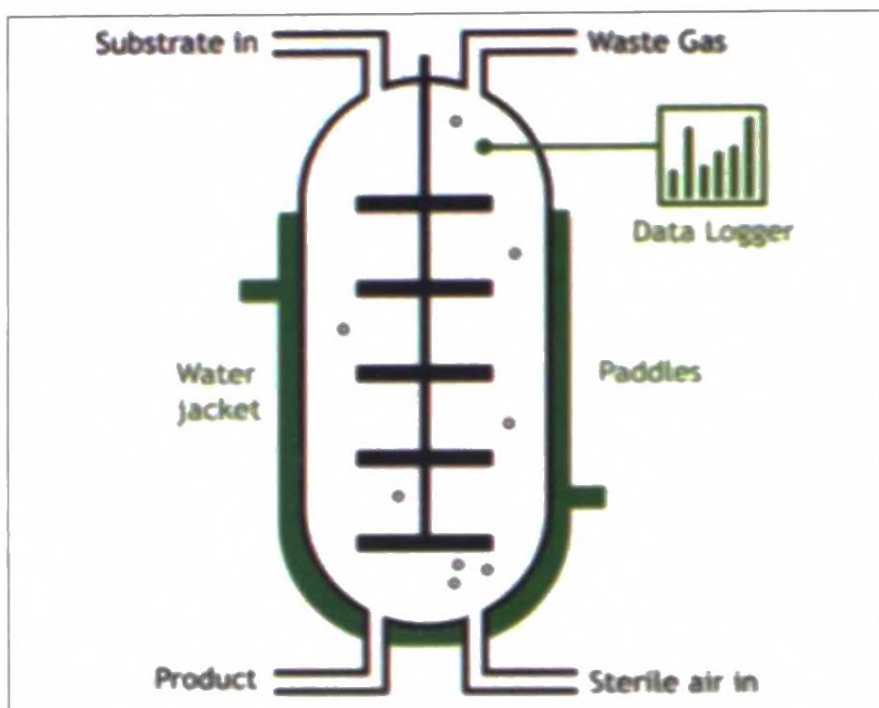


Diagram of a modern Fermenter vessel



Fermentation in a modern factory (LINK)

The process of *Sandana Kalpana* is characterized by the four types of components employed. In each *Arishta* or *Asava*, there is a characteristic assembly of prescribed herbs by which the preparation is therapeutically identified and known. The decoction or infusion is

made from these main herbs. They are believed to yield the therapeutic agents which are important in the medicine. Then the flavoring agents which are added are also herbs and spices, which besides contributing to the overall flavor also have a role in synergistically enhancing the therapeutic effect of the main herbs. The fermentation initiator, in the form of flowers of *Woodfordia fruticosa*, which provides the inoculum is then introduced, and this will start the fermentation process. Finally the sugar medium, which is required for the fermentation is added. This is generally in the form of molasses jaggery, palm jaggery, or sometimes even sugar itself. The process of fermentation is similar to that which occurs in any form of alcohol production from a sugar base. In the case of *Arishtas* and *Asavas* the slow auto-production of the alcohol in situ with the herb is believed to bring about a smooth and continuous extraction of the biologically active plant metabolites which have the required therapeutic properties. In the Ayurvedic system the texts describe further details of the technology of the *Sandana Kalpana*. These include the relative ratios of herbal material, water, sugar medium and inoculum, which should form the substrate to be loaded into the fermentation vessel. Something that is unique in the preparation of alcoholic medicaments in the Ayurvedic system is that the inoculum of yeasts needed for fermentation comes from the flame red flowers of *Woodfordia fruticosa*. These contain a wild species of yeast and its chemical constitution with the presence of an array of polyphenolic substances is believed to be uniquely favorable to the growth of yeasts. There are however instances where the fermentation is allowed to go ahead without any inoculum but these are for special cases.



Woodfordia fruticosa flowers



Jaggery from the Kithul Palm

The fermentation process takes about a week to ten days but the process parameters in a modern factory situation are worked out scientifically and an optimized process protocol for the entire operation for each type of preparation is compiled. This is based on examination of the final product by modern analytical techniques such as TLC-densitometry, and HPLC to ensure that the product itself is no different from that which results from the original methodology.

The final preparation after filtration, is bottled and labeled for consumer distribution but although it is time dated, there is a belief that the effectiveness is enhanced with ageing and maturation.. However other factors such as sedimentation may occur as with all plant extracts and the efficacy enhancement is not established. Here again the factory depends on its scientifically optimized methodology.

Merits of the Herbal wines

There are some established beliefs in regard to Ayurvedic herbal wines, and some of the attributed characteristics could indeed have a scientific basis. As regards the therapeutic efficacy the time honored usage is a most significant factor in support of the preparations. The merits of the process and the products are summarized as follows by Prahst. (2007).

- Fermentation extracts a wider range of active ingredients from the herb than any other method since the menstruum undergoes a gradient of rising alcohol levels.
- Fermentation ruptures the cells of the plant material exposing it openly to the

menstruum and the bacteria have enzymes that can break down the cell walls to further assist the leaching process. Thus an active transport system is created that can move the dissolved constituents from the herbal material to the menstruum.

- Fermentation removes most of the undesirable sugars from the plant material and renders the product more bio-available, eliminating side effects such as gas and bloating.
- The fermentation method removes any contaminating heavy metals, and lowers the toxicity of some of the toxic components in plants.
- The fermented products have much longer shelf life periods under severe conditions.

Concluding Observations

Arishtas and *Asavas* are dominant therapeutic products used within the Ayurvedic system. Given the established merits of this class of products, and the well-established process technology that is associated with their production, they form an important class within the armory of Ayurvedic therapies. Technologies for the processing of these herbal wines have now been modified on modern lines to ensure better and more efficient extraction of the inherent chemical metabolites. The use of stainless steel equipment falls in line with modern processing trends although the technology itself is carefully adapted to simulate the original principles required by the Ayurvedic system of *Sandana kalpana*. There is a large variety of *Arishtas* and *Asavas*, based on the combination of plant species selected to each formulation. This category of therapies, are available to address almost all ailments recognized within the system of Ayurveda. What is now well recognized is that the combination of herbs can cause amazing synergistic effects whose benefit it is not easy to evaluate. Accordingly the research now known as "synergy research" is a step in the correct direction. Research in regard to the mode of action of this class of therapeutic agents is by no means simple but indeed most warranted. It would be in the interests of all mankind.

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Some of my cousins who had the great advantage of University education used to tease me with arguments to prove that nothing has any existence except what we think of it. ... These amusing mental acrobatics are all right to play with. They are perfectly harmless and perfectly useless. ... I always rested on the following argument... We look up to the sky and see the sun. Our eyes are dazzled and our senses record

the fact. So here is this great sun standing apparently on no better foundation than our physical senses. But happily there is a method, apart altogether from our physical senses, of testing the reality of the sun. It is by mathematics. By means of prolonged processes of mathematics, entirely separate from the senses, astronomers are able to calculate when an eclipse will occur. They predict by pure reason that a black spot will pass across the sun on a certain day. You go and look, and your sense of sight immediately tells you that their calculations are vindicated. So here you have the evidence of the senses reinforced by the entirely separate evidence of a vast independent process of mathematical reasoning. We have taken what is called in military map-making "a cross bearing." ... When my metaphysical friends tell me that the data on which the astronomers made their calculations, were necessarily obtained originally through the evidence of the senses, I say, "no." They might, in theory at any rate, be obtained by automatic calculating-machines set in motion by the light falling upon them without admixture of the human senses at any stage. When it is persisted that we should have to be told about the calculations and use our ears for that purpose, I reply that the mathematical process has a reality and virtue in itself, and that once discovered it constitutes a new and independent factor. I am also at this point accustomed to reaffirm with emphasis my conviction that the sun is real, and also that it is hot--in fact hot as Hell, and that if the metaphysicians doubt it they should go there and see.

Winston S. Churchill, My Early Life, Fontana, London, 1972, pp 123-124. (1) Newer edition available from Amazon.com