Traditional alcoholic beverages from Ayurveda and their role on human health

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The traditional medical system of Indian Ayurveda indicates availability of a variety of alcoholic beverages named generally as Madya, which are hitherto unreported. The objective of this work was to compile and analyze such information obtained from traditional literature in order to document the impact of these beverages on human health. In this work, the Ayurvedic alcoholic beverages are grouped into seven major categories based on the nature of raw materials used and the nature of fermentation. Constituents and medicinal properties of diverse alcoholic beverages falling into each category are compiled. Novel information about the fractions of beverages, quality assessment and changes in properties as a result of storing are highlighted. The means for the application of modern scientific tools and vistas of scientific knowledge to hull out useful information as well as to document and validate the rich tradition of fermented therapeutics of Ayurveda is outlined.

Key words: Ayurveda, Madya, Alcoholic beverages, Traditional medicine, Biomedical fermentation


Ayurveda, the traditional Indian System of Medicine is regarded as one of two living great traditions of the world along with the traditional Chinese System of Medicine. Ayurveda extensively uses plants in addition to certain minerals and animal products. As a result of research investigations, numerous drugs have entered into pharmacopoeia. World Health Organization indicated that primary health needs of countries in Africa, Asia and Latin America are met by traditional medicines. Ayurveda has been estimated to meet 70-80% of the healthcare needs of India. Ayurvedic medicines are of various types, viz. herbal teas, infusions, decoctions, tinctures, capsules & powders, infused oils, ointments, creams, lotions, arishtas (fermented decoctions), and asavas (fermented infusions). Ayurveda have also indicated about the medicinal uses of a variety of alcoholic beverages, which are generally named as ‘Madya’. Madya are not prescribed in current practice of Ayurveda probably because of the restrictions for their inadvertent use as drinks. This work is intended to compile and analyze the information about such alcoholic beverages obtained from the traditional literature and their translation. This is to ultimately identify the components of such beverages, bring out the potential medicinal properties and care to be taken while using them as medicines.

Madya are of various kinds like sura, sukta, sidhu, etc. Ira, madira, hala and balavallabha are synonyms of Madya. All kinds of Madya are hot in potency, slightly sweet, bitter and pungent in taste, slightly astringent, sour at the end of digestion. It aggravates pitta, mitigates vata and kapha, causes purgation, digests quickly, creates dryness, non-viscid, kindles digestive fire, helps taste, quick in action, enters into minute pores of the body and cleaning them, spreads quickly and produces looseness of joints. They are beneficial to those having loss of sleep or excess sleep of both lean and stout persons. All of these properties are conferred, if they are used judiciously considering them as medicines. They cause intoxication and act like poisons if they are used otherwise.

Alcoholic beverages from Ayurveda

In this work, Ayurveda beverages are grouped based on the nature of raw materials used and the nature of fermentation, viz. sugar based beverages, fruit based beverages, cereal based beverages, beverages prepared from cereal with or without fruits but contains herbs, Maireyah (triyoni), sukta
(vinegar fermentation) and tonic wines. Among them, Matreyah consists of 3 major components (flour, jaggery, and honey), which are fermented, in a two-step process or all 3 components are co-fermented. Other products are formed as a result of single fermentation where sugar, fruits or cereals or a combination of cereal and fruits are used as raw material(s) for effecting fermentation by supporting microbial activity.

Sugar based beverages

Sarkara: It is a wine prepared using sugar. It is sweet smelling, sweet and easily digestable. It is a cardiac tonic and digestive stimulant. It cleans the urinary bladder and alleviates vata. It is sweet in vipaka (transformed state of ingested substances after digestion), appetizer and stimulant of senses (indriya bodhana). 

Gouda/ Gauda: Gouda is a wine prepared by using molasses (treacle). It causes elimination of urine, faeces and flatus and increases hunger. It is refreshing, pungent, bitter and sweet in taste and nourishing. The alcoholic drink prepared using flowers of Dhataki [Woodfordia fruticosa (L.) Kurz.], water and guda (jaggery) is called as Gauda. It promotes the power of digestion, complexion and strength. Gauda eases passage of flatus and faeces and improves appetite.

Sidhu (sita rasa or sita rasika, pakvarasa sidhu, sasyaka, aksikah-sidhu): The alcoholic preparation made out of uncooked materials is called sita rasa or sita rasika. Unboiled sugarcane juice is used in this preparation. This type of sidhu is inferior in quality. It improves digestion, voice and complexion, combat swelling, abdominal disorder, piles and useful for slimming.

If the same sidhu is prepared from boiled sugar cane juice, it is called Pakvarasa sidhu. It aggravates vata and pitta and diseases of kapha, obesity, dropsy (an excessive accumulation of fluid in any of the tissues or cavities of the body), enlargement of abdomen and haemorrhoids (piles with painful swelling at the anus). This sidhu is better than sita rasa. Pakvarasa sidhu promotes good voice, digestive power, strength and complexion. It is a cardiac tonic, unctuous and an appetizer. It cures vivandha (constipation), medas (adiposity), sopha (oedema), arsas (piles), svasa (asthma), udara (obstructive abdominal diseases including ascites) and diseases caused by kapha relishing wholesome of kaphaja piles (a type of piles with increase in kapha).

The sidhu prepared using boiled sugarcane juice fermented with Dhataki and after a certain period of fermentation added with little ghrta (ghee) and jaggery is known as sasyaka. Aksikah–sidhu is made of decoction of bibhitaka [Terminalia bellirica (Gaertn.) Roxb.] and jaggery and processed with Dhataki flowers. It alleviates anaemia, astringent, sweet, pitta alleviating and blood purifier. Sidhu made of jambu [Syzygium cumini (L.) Skeel] fruit is anti diuretic, astringent and vata aggravating. Sidhu prepared of madhuka (Glycyrrhiza glabra L.) flower is burning, appetizer, astringent, pacifies kapha while aggravates vata and pitta.

Fruit based beverages

Mardvika/ Kapisa: If an alcoholic preparation is made out of Mardvika (dry grapes), then it is called Mardvika or Kapisa. It is the best among the alcoholic drinks. For this preparation, dry grapes are cooked well and juice is strained out through a piece of cloth. The juice free of astringent taste is suitable for fermentation. This alcoholic preparation is also called Bhimavikranta or Kapisapana. Mardvika is unctuous, sweet, laxative, appetizer, carminative (drug curing flatulence), cardiac tonic and nourishing. It promotes strength and semen. It causes amlapitta (acidity in stomach) and aggravation of vata. It does not cause burning sensation and it alleviates kapha. It cures pandu (anaemia), ksaya (consumption or pulmonary tuberculosis), meha (obstructive urinary disorders, including diabetes), arsas (piles) and visama jvara (typhoid), hemorrhoids and intestinal parasites. Wine prepared from grapes is not contraindicated even in intrinsic hemorrhage because of its non-burning property and sweet taste.

Kharjura: It is a wine prepared from dates. It is slightly inferior in quality in comparison to mardvika type of alcoholic drink. It aggravates vata, heavy and hard for digestion. It is a cardiac tonic, astringent, sweet and fragrant. It activates the senses (indriya bodhana).

Jambava: The alcoholic preparation made out of the juice of jambu [Syzygium cumini (L.) Skeel], jaggery and honey is called jambava. This helps in the prevention of excretion (baddha nisyanda).

Cereal based beverages

Sura/ kantoli/ kohali/ Yava Sura: Sura is prepared by fermenting a mixture of water, flour of rice,
jaggery resembling the beer of the present day. Sura cures abdominal lump, enlargement of abdomen, haemorrhoids, duodenal diseases and consumption (pulmonary tuberculosis). It is hard to digest, causes constipation, mitigates vata and causes increase of fat, blood, milk, urine and kapha. Sura is useful for treating emaciation, gaseous abdominal swelling, urinary obstruction, insufficient lactation and piles. It bestows strength, breast milk nourishment and relieves dropsy and dysuria (difficulty and pain in urination). The alcoholic preparation made out of the yava paste (barley) and masa (Phaseolus mungo L.) is called kantoli or kohali. Yava Sura prepared from yava (barley) causes constipation and not easily digestible. It is pitta increasing, slightly induces kapha and aggravates vata.

Kohalah and Tusambu: Kohalah is made of parched barley flour. Others take it as sura of cooked rice. It vitiates three doshas and acts as non-aphrodisiac. Tusambu is prepared by fermenting uncooked and dehusked barley. It is an appetizer, alleviates heart diseases, panduroga (anaemia) and worms.

**Beverages prepared from cereals and/ or fruits with herbals**

Vibhitaka sura: Sura prepared from vibhitaka [Terminalia bellirica (Gaertn.) Roxb.] is easily digestible, good for health, treats wounds, anaemia, leprosy and other skin diseases.

Varuni: The alcoholic drink prepared from punarnava (Boerhavia diffusa L.) paste and rice is called varuni. It is also prepared from tala (Borassus flabellifer L.) and kharjura (dates) juice. The alcoholic drink prepared of punarnava and salipisti (dough of rice flour) together mixed with sura is also known as varuni. Varuni is easily digestible like sura, mitigates rhinitis and pain. Varuni shows the properties of sura. However, it is light and cures pinasa (sinusitis), adhmana (flatulence) and sula (colic pain).

Madhuka madya: The alcoholic drink prepared of the flowers of madhuka (Glycyrrhiza glabra L.) is called madhuka madya. It aggravates vata and pitta.

Aksika (aksiki): The alcoholic preparation made out of the bark of aksa [Terminalia arjuna (Roxb. ex DC.) Wight & Arn.] and rice grains is called aksiki. It is a promoter of strength, constipative, astringent, sweet and cooling. It alleviates pitta and promotes blood formation. Aksiki improves appetite; good for treating anaemia and worms.

Maireyah (triyon): It is made by the refermentation of sura and asava (fermented infusion), prepared separately then combined together which has the effect of both of these preparations. The basic sources of sura and asava are flour and jaggery, respectively to which honey is added thus making it triyon (three basic sources); alternatively, flour, asava and jaggery fermenting together make it triyon. It is sweet, astringent and alleviates piles, kapha, gulma (gastritis), worms, fat and vata.

Sukta (vinegar): The portion prepared by adding rhizomes, roots and fruits along with fat and salt in water is called suka. It produces rakaptita (a disease characterized by bleeding from different parts of the body) and chedana (which takes away tissues like cutting). It cures pandu (anaemia) and krmi (parasitic infection). It is purgative, helps in the digestion of food, hot, diuretic, cardiac tonic, alleviator of kapha and pungent in vipaka. It is a good appetizer.

Sauviraka: The portion prepared by adding uncooked or merely washed. It is purgative, penetrating, hot in potency, aggravates pitta, cold to touch, relieves fatigue and exhaustion, increases appetite and hunger, cure pain of urinary bladder, ideal for use as asthapana (decoction of enema) for all patients, good to the heart, easily digestable, mitigates vata and kapha. It is useful in anorexia and diseases caused by vata. It is satmya (whole some) for persons residing on the sea coast. Dhanyamla is satiating and best suited in loss of taste.

Sauvira and Sauviraka: Sauvira is prepared using de-husked barley either raw or cooked by adding 8 times of water and then fermented. It cures duodenal diseases, diseases of kapha origin, purgative, kindles digestive fire, beneficial in upward movement of gas and bodyaches. Sauvira cures grahani (irritable bowel syndrome) and arsas (piles). It is digestive and useful in udavarta (flatulence), angamarda (malaise), asthi sula (pain in bones) and anaha (flatulence). Sauviraka or suviramla is prepared by fermenting wheat.
Aranala: It is prepared of dehusked godhuma (Triticum dicoccum Schubl.) either raw or cooked and it shares all the properties of sauvira.5,7.

Tusodaka: It is prepared by the coarse powder of yava along with its husks. It is a digestive stimulant and a cardiac tonic. It cures pandu (anaemia) and krmi (parasitic infection). It is hot and carminative. It vitiates pitta, blood and cures pain in the urinary bladder.5,7.

Kanjika: The preparation made by fermenting rhizomes, roots, fruits, kulmasa (half baked wheat) and dhanya manda (fermented cereals) is called kanjika.10 kanjika is also prepared by the fermentation of rice and millet.9 It is purgative, hot, appetizer and carminative. When applied externally, it cures daha (burning syndrome) and fever. When taken internally, it alleviates vayu and kapha.

Scum of gruel of cereals and other grains, kept undisturbed for some days and allowed to ferment become sour. It is bitter in taste, penetrating, hot in potency, helps taste, digestive, easily digestible, mitigates fever with burning sensation by touch (anointing), mitigates vata and kapha by drinking. When prepared from vataka (fried balls of flour) of masa (black gram), it is more superior. It is easily digestible, relieves colic (severe pain in the abdomen), indigestion, constipation, accumulation of undigested materials and cleanses the urinary bladder. Persons suffering from fainting, giddiness, intoxication, itching, leprosy (and other skin diseases), breathing difficulties, anaemia, tuberculosis, emaciation, injury to lungs, exhaustion and mild fever are not suitable to drink kanjika, which shall lead to the aggravation of dosas in them.5,7,10 In the special preparation of kanjika, the portion prepared of kanjika mixed with ardrika (Zingiber officinale Rosc.) and salt is carminative and digestive stimulant. It alleviates amavata (rheumatism).5,7,10

Kanjika because of being obtained from cereals is a vitalizer, removes burning sensation by external application while intake pacifies vata, kapha and thirst. It expels mucus and by gargoyle alleviates abnormal taste, foul smell, dirt and dryness of mouth and also exhaustion.5,7

Sandaki: The portion prepared by the fermentation of the leaves of mulaka (Raphanus sativus L.) is called sandaki. It is prepared using rajika (mustard), mulaka dala (leaves of radish), jala (water) and salipistaka (dough of rice flour). All are put together in a pot and allowed to ferment. It is purgative in action. The santaki prepared of the vataka (fried balls of flour) of mudga [Vigna mungo (L.) Hepper] is superior in quality. It alleviates vata. It is light, appetizer and carminative par excellence. It cures sula (colic pain), ajirna (indigestion) and vibandha (constipation). It cleanses the urinary bladder. Sandaki helps taste, hard for digestion and increases pitta and kapha.5,7

Cukra and Asuta: Cukra is a type of vinegar and prepared by 1 part jaggery, 2 parts honey, 4 parts dhanyamla (a sour preparation of cereals), 8 parts mastu (lower portion of butter milk) and 16 parts water. To this, a small quantity of the powder of trikatu (Zingiber officinale Roxb., Piper nigrum L. and P. longum L.) is added. Mastu is kept in clean jar along with jaggery, honey and dhanyamla. This jar is kept inside a heap of cereals or heap of paddy of the concerned season for 3 days. This is called cukra.10 This is also fermented with sugarcane juice, madhuka flowers and pilu (Coffea arabica L.).9 Asuta is prepared using tubers/rhizome and fruits kept soaked in water and allowed to ferment. This helps taste, digestive, mitigates vata and especially light for digestion.5

Madhusukta, Gaudani (gudasukta), rasasuktani: Madhusukta is prepared from the fruit juice of jambira [Citrus limon (L.) Burm.f.] mixed with pippali mula (Piper longum L.). These are put in a vessel containing honey and then kept within the heap of paddy for 3 days. Gaudani is made of jaggery, water, vasa (muscle fat) and oil. It is also known as gudasukta. Sour gruel fermented with jaggery water mixed with oil along with tubers, herbs and fruits is also known as guda sukti. Rasasuktani is made of sugarcane juice.9

Tonic wines: Tonic wines are medicinally useful, increase vitality and improve digestion. Tonic wines are made by steeping medicinal herbs in wine for several weeks.4 A simple and effective way to make a tonic wine is in a jar or a ceramic vat with a tape at the base to enable the wine to be drawn off without disturbing the herbs. Wine can be added periodically to keep the herbs covered, although, in time, this will reduce the wine’s tonic effectiveness. If exposed to the air, the herbs may go moldy due to the unwanted growth of fungi, making the remedy not only ineffective but also unsafe to consume.4

Fractions of beverages and their properties

The upper portion of madya, which is light in nature, is called prasanna. The portion below that,
which is relatively denser, is called kadambari. The portion below kadambari is called jagala. The portion, which is at the bottom region of the container, is called medaka. The lowest layer of medaka containing the paste of drugs is called vakkasa. The material that is used for initiating fermentation of alcoholic drinks is called kinva or surabija (it is the microbial inoculums). If kinva is not matured, then it is called madhulaka. It is present in not properly fermented madya7,10.

Prasanna: This supernatant clear portion of alcoholic preparation alleviates vomiting, anorexia, pain in heart and abdomen, kapha, vata, piles, constipation and hardness of bowels9. Prasanna cures anaha (flatulence), gulma (gastritis), arsas (piles), chardi (vomiting) and arrocaka (anorexia)7.

Kadambari: The lower thick portion of wine is called kadambari10. Kadambari type of alcoholic drinks is digestive stimulants. It cures anaha (flatulence), pain in the heart and pelvic region and colic pain. It is heavy, aphrodisiac, alleviator of vata and laxative7.

Jagala and Bakkasahi: Jagala alleviates kapha. It is constipative. It cures sopha (oedema), arsas (piles) and grahani (irritable bowel syndrome). It is hot, carminative and strength promoting. It cures ksut (morbid hunger), trsna (morbid thirst) and aruci (anorexia)7. Beneficial for colic, dysentery, borborygm (sound of flatus in intestine), and constipating8. Jagala is digestive, produces oedema and alleviates dysentery, gurgling sound in bowels, piles, vata and consumption. In oedema, it is applied externally. Bakkasahi is a jagala free from liquid and consisting only of yeast and drugs. It is vata aggravating, appetizer, laxative, diuretic and non-slimy7.

Medaka: It is sweet, strength promoting, stambhana (which increases the power of retention), cooling and heavy7.

Vakkasa: This portion from which alcohol is taken out is constipative and it aggravates vata7.

Kinvaka: It alleviates vata. It is not good for heart and difficult to digest7.

Madhulaka: It is unctuous, constipative, aggravates kapha and difficult to digest7,10.

Assessing the quality of beverages

The alcoholic drink in which 5 tastes are manifested, which is pure and endowed with good smell is of good quality. The alcoholic drink, which causes burning sensation, putrid in smell, bad in taste, contains krmis (maggots, including microbes and worms) and thick in nature should be rejected7.

Fresh and stored wines and their properties

Freshly prepared alcoholic drinks (nava madya) are abhissyandi (which obstructs channels of circulation). It alleviates all three dosas and is a laxative. It is not good for heart and not tasteful (virasa). It causes burning sensation and produces putrid smell. It is visada (non-slimy), heavy and difficult to digest7. Navam which means immature in terms of taste and clarity; others take it as of not more than a year9. They should not be used by persons who are having purgation (or had purgative therapy) and who are hungry5,6.

Purana madya, the same alcoholic drink, when preserved for a long time and used, is relishing. It cures krmis (parasitic infection) and aggravation of kapha as well as vata. It is a cardiac tonic, fragrant, endowed with good qualities and light. It cleanses the channels of circulation, improves appetite and opens body channels7. Old wine is an appetizer, much relishing, anthelmintic and pacifies vata and kapha and promotes digestion. It is consumed as of beyond of one year5,9.

Conclusion

It is hereby evident that Ayurveda constitutes a profile of alcoholic beverages with therapeutic properties. It is indicated that such alcoholic drinks, taken according to the prescribed procedure, in proper dose, at the proper time, along with wholesome food and according to the capacity of the individual produces effects like ambrosia7. When used inappropriately, it causes diseases and works as a poison. The dose taken should not cause intoxicated movement of eyeball5,7,10. It is further important to apply the modern science to understand the traditional systems of human life. The tradition of Ayurveda requires multifaceted approach of research for validation. To cite, the traditional beverages and their medicinal properties can be investigated by modern scientific approaches. Understanding of microbes involved in these biomedical fermentations, the chemistry of fermentations and associated biotransformation processes have to be studied in detail so as to validate the living great tradition of Ayurveda. Further, assessment of the quality of beverages in terms of ethyl alcohol content, dry
extract, volatile acid content, fixed acid content, sugar content and testing of methyl alcohol, etc. have to be performed in order to use them medicinally.

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