



ECO – FRIENDLINESS OF AYURVEDA

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<https://doi.org/10.46607/iamj2309122021>

(Published Online: December 2021)

Open Access

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Article Received: 22/11/2021 - Peer Reviewed: 07/12/2021 - Accepted for Publication 08/12/2021



ABSTRACT

Ayurveda is the old age science it is time tested which is still proven for today. Ayurveda mainly emphasizes both preventive and curative aspects the main aim of Ayurveda is “*Swastasya Swasthya Rakshana Aturasya Vikara Prashamana*” there has been more than hundreds of different treatment approaches said in Ayurveda. For prevention *Dincharya, Ritucharya* etc. mentioned, in curative aspect *Shamana, Shodana* have mentioned the waste generated in all these procedures are organic and eco-friendly.

Keywords: Eco-friendly, Environment, Environmental factors, Bio-medical waste, Ayurveda.

INTRODUCTION

Global warming, climate change and environmental pollution are the biggest challenges for the modern world. Urbanization, industrialization and modern lifestyle are contributing a lot to this crisis. An innovative approach is needed to balance this moderniza-

tion with the list of harm for an environment that will be key for sustainable development. Ayurveda an ancient traditional life science is also proved to be an eco-friendly system of medicine. Ayurveda mainly emphasizes both preventive and curative aspects the

main aim of Ayurveda is "Swastasya Swastha Rakshana Aturasya Vikara Prashamana"¹ there has been more than hundreds of different treatment approaches said in Ayurveda. In *Dincharya* various procedures are mentioned like *Dantadavana*, *Nasya*, *Anjana* etc. the ingredients used in these procedures are mainly plant-based and are non-hazardous to the environment.

MATERIAL AND METHOD

A systematic review and critical analysis of Ayurvedic literature and related article published in the national and international journal

The E - *Samhithas* and articles published regarding environmental friendliness were the primary sources for this research.

OBSERVATION AND RESULT

On review, it was found that all the Ayurvedic treatments mostly involved biodegradable organic compounds. This includes plants, drugs of animal origin and minerals. The *Ayurveda* procedure included in *Swasthya Rakshana*, *Vikara Prashamana* is biodegradable and non-hazardous to the environment which is mentioned in the table.

Table 1: Procedure involved in *Swasthya Rakshana*

Procedure	Material used	Waste generated	Treatment required
<i>Dantadavana</i> ²	<i>Kastha</i> of <i>Arka</i> , <i>Nyagrodha</i> , <i>Khadira</i> etc	<i>Kastha</i> of <i>Arka</i> , <i>Nyagrodha</i> , <i>khadira</i> etc	Can be used for manure
<i>Abhyanga</i>	Oil	Remnant oil	Can be reused for <i>Abhyanga</i> , grease manufacture, lamp lighting
<i>Udavartana</i> ³	<i>Churna</i> , <i>Kalka</i>	<i>Churna</i> , <i>Kalka</i>	It can be reused for fumigation
<i>Anjana</i> ⁴	Soot of twig	Ash of twigs	Landfilling
<i>Gandusha and Kavala</i> ⁵	<i>Kwatha</i> , <i>Swarasa</i> , <i>Madhu</i> , <i>Grita</i> , <i>Taila</i>	<i>Kwatha</i> , <i>Swarasa</i> , <i>Madhu</i> , <i>Grita</i> , <i>Taila</i> .	Disinfected and discharged
<i>Dhumpana</i> ⁶	<i>Dhumavarti</i>	Ash of <i>Dhumavarti</i>	Landfilling
<i>Anulepana</i> ⁷	<i>Kalka Dravya</i>	<i>Kalka Dravya</i>	Fumigation

Table 2: *Vikaraprashmana*

I. Shamana⁸

Procedure	Material used	Waste generated	Treatment given
<i>Swarasa</i>	<i>Ashtangas</i> of plants	<i>Kalka</i> of <i>Swarasa Kalpana</i>	Can be used for fumigation, manure
<i>Kalka</i>	<i>Ashtangas</i> of plants	No waste generated	
<i>Kwatha</i>	<i>Ashtangas</i> of plants	<i>Kalka</i> of <i>Kashaya Kalpana</i>	Can be used for fumigation, manure
<i>Hima</i>	<i>Ashtangas</i> of plants	<i>Kalka</i> of <i>Hima</i>	Can be used for fumigation, manure
<i>Phanta</i>	<i>Ashtangas</i> of plants	<i>Kalka</i> of <i>Phanta</i>	Can be used for fumigation, manure
<i>Vati Kalpana</i>	<i>Ashtangas</i> of plants	<i>Kalka</i> of <i>Kashaya Kalpana</i>	Can be used for fumigation, manure
<i>Sandhana kalpana</i>	<i>Ashtangas</i> of plants	<i>Kalka</i> of <i>Sandhana kalpana</i>	Can be used for fumigation, manure
<i>Sneha kalpana</i>	<i>Ashtangas</i> of plants, <i>Sneha Dravyas</i>	<i>Kaka Dravyas</i> of <i>Sneha kalpana</i>	Can be used for fumigation, manure
<i>Guggulu kalpana</i>	<i>Ashtangas</i> of plants, <i>Guggulu</i>	<i>Kalka Dravya</i> , <i>Guggulu</i>	Can be used for fumigation, manure
<i>Bhasma kalpana</i>	<i>Ashtangas</i> of plants	Ash of burned drugs	Landfilling

II. Shodhana – 1) Antarparimarjana

Procedure	Material used	Waste generated	Treatment given
Vamana	Kshira, ⁹ Vamanopaga Dravyas (Madhu, Maduka, Madanaphala etc) ¹⁰ , lavana Jala, Kamala Nala. ¹¹	Kshira Vamanopaga Dravyas (Madhu, Maduka, Madanaphala etc), lavana Jala, Kamala Nala	Disinfected and drain into sewage Kamala Nala - manure
Virechana	Leha of Danti, Dravanti, Trivrut etc. Taila like Eranda, ¹²	Shakrut with Sneha	Disinfected and drained into sewage
Basti	Makshika, Lavana, Sneha, Kala, Kwatha, ¹³ Basti Putaka (animal bladder), Basti Netra (Rajata, Tamra, Swarna) ¹⁴	Shakrut with Oushadi Dravya	Disinfected and drained into sewage, Basti Putaka – animal bladder is biodegradable Basti Netra – it can be disinfected and reused.
Nasya	Nasya Taila, ¹⁵ dropper.	Sputum	Disinfected and drained, dropper – disinfected and reused.
Raktamokshana ¹⁶	Jalouka	Jalouka	Can be reused after proper cleaning

2. Bahirparimarjana

Procedure	Material used	Waste generated	treatment
Abhyanga	oil	Oil	Can be reused for Abhyanga, grease manufacture, lamp lighting
lepa	Kalka Dravya	Kalka Dravya	Can be used for fumigation, manure
Dhara ¹⁷	Taila, Dhara Yantra	Taila, Dhara Yantra	Can be reused for Abhyanga, grease manufacture, lamp lighting Dhara Yantra - can be reused after proper cleaning
	Takra, Dhara Yantra	Takra, Dhara Yantra	Disinfected and safely discarded Dhara Yantra - can be reused after proper cleaning
Pichu	Oil, Kalka, cotton	Oil, Kalka, cotton	Can be reused for Abhyanga, grease manufacture, lamp lighting Kalka - Can be used for fumigation, manure Cotton – manure
Parisheka	Kashaya, oil	Kashaya, oil	Can be reused for Abhyanga, grease manufacture, lamp lighting Kashaya - Discarded

3. Shastra parimarjana¹⁵

Procedure	Material used	Waste generated	Treatment given
Yantra karma, Ashtavidha Shastra Karma (Chedana, Bhedana etc)	Yanta, Shastra (made up of Loha)	Yanta, Shastra (made up of Loha)	Can be reused after proper disinfection

DISCUSSION**Effect of Ayurvedic treatment on environmental factors:**

Air:

Most of the drugs used are herbal preparation and the waste generated is a residual part of Kashaya Dravya, Kalka Dravya, Kalka Dravya of Sneha Kalpana,

Churna Dravya that can be used for fumigation, and it reduces air pollution. Kshara is prepared by burning the Kashas by which acts as fumigation. Gomaya used as fuel while preparing the formulation having a good impact on air has it is an excellent bioremediation method¹⁹, cow dung contains various biological organisms it destroys and reduces pollution. Even the

Guggulu after the preparation of medicines can be used for the fumigation of room air, hospital etc.¹⁹ has been the best disinfectant. Even while doing *Shodhana* and preparing *Rasoushadis* the specially designed *Yantras* like *Dhamaruka Yantra*, *Kupi* etc are used it prevents the escape of chemicals into the environment it shows how much concern given to the environment in Ayurveda. *Adravya Bhuta Chikitsa* like *Homa*, *Havana*, also have a significant effect on the environment the *Dhuma* emitted during this procedure eradicates microorganisms and purifies the air.

Water: Water derives its impurities from the atmosphere, catchment area and soil following its contact with soil and toxic agent.²⁰ As Ayurvedic drugs are organic which will not harm the water. Even though some of the drugs like *Ballataka*, *Kupilu* are toxic but they will be used after proper *Shodhana* so they will not harm the water²¹. When the byproduct of the drug and cow dung is used as fumigation its bacteriological load and gases content in the atmosphere thereby reduces water pollution. Ash remains after *Homa* and *Havana* is the best water purificator and can be used for purification.²² Chemical fertilizers are also one of the causes of water pollution so using a byproduct of drugs as manure and using the ash of *Homa*, *Havana* is the best alternative. It has been proven that the ash of *Agnihotra* is the best fertilizer²³. In *Mruta Samshodana Paddati* cadaver is wrapped in *Munja*, *Valkala*, *Kusha*, *Shana*²⁴ and kept in flowing water was these drugs act as a water purifier. Drugs like *Kataka*, *Gomeda*, *Spatika* can be used for water purification²⁵.

Land: Herbal preparations are biodegradable, so it doesn't cause any harm to the land in spite burning of herbs purifies the land²⁶.

Radiation:

Radiation is part of man's environment. The source of radiation to which man is exposed is natural, man-made. They are used for diagnosis, treatment and disinfection purposes.²⁷ As Ayurvedic diagnostic mainly based on *Asthavida Pariksha*, *Dashavida Pariksha* and treatment is by herbal preparation and disinfection followed was natural fumigation process it will

not harm the environment but intern it helpful to keep the environment healthy.

Ventilation: When we see the *Mahanasa* we get the reference regarding ventilation *Sushruta* told *Sajala*, *Gavakshadhyam*, *Bahu Vataya* and *Praprashastha Dik Desha*. *Sajala* is for the humidification of water, *Gavakshadhyam* is the windows meant for proper ventilation and *Bahu Vatayana* proper ventilation²⁸. In *Charaka* while telling *Griha/Aturalaya* he mentioned *Nivata* means well ventilated or well-controlled ventilation, *Pravata* means proper aeration, *Ekadesha* means coming from one direction that is nothing but perfect ventilation.

Noise: *Charaka* while explaining regarding the *Mahanasa* he mentioned that it should be dived of *Shabda* that is it should be constricted in outs curt area of the living place. Though a minimum sound is produced from the tools and machineries of Ayurveda, it is considered less that will not make noise. *Anupatyayakam* area should be away from the large building which is nothing but a detached building rather than a single large building. While explaining the drug collection method Acharya *Charaka* suggested collecting fruits and flowers in fruiting and flowering season so that there are adequately available and leaves in *Vasanta Rutu* were new leaves start to be growing, *Moola* in *Ghrishma* where plants are completely dried so roots can be used, and *Twak* in *Sharad Rutu* were leaves started to shed and that time we can use *Twak*. In *Vrukshaayurveda* we can see detailed explanations regarding irrigation and fertilization and the *Vrksha Chikitsa* also given so even though we use the plants' ecosystem is not harmed or imbalanced.

CONCLUSION

Ayurveda is the system of medicine that will not produce any byproduct or end product which is biohazards. It is seen from all the above reference that *Ayurveda* is an eco-friendly system of medicine this take into consideration that nature is also an integral part of our life all the measures are taken to minimize the imbalance in the ecosystem caused due to using herbal and animal origin drugs, therefore, *Ayurveda*

also emphasizes on eco-friendliness and sustainable development.

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Source of Support: Nil

Conflict of Interest: None Declared

How to cite this URL: Shainaz Begum et al: Eco – Friendliness Of Ayurveda. *International Ayurvedic Medical Journal* [online] 2021 [cited December 2021] Available from:

http://www.iamj.in/posts/images/upload/3069_3073.pdf