



STUDIES ON THE MEDICO-BOTANY OF PLANTS USED IN HAWAN IN JAJPUR DISTRICT OF ODISHA

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Abstract

A Medico-Botanical exploration was carried out to document and investigate on the plants used in Hawan (Homa) in different temples and family and festive rituals associated with God and Goddesses associated with Hindu culture in Jajpur district of Odisha revealed some interesting information regarding uses of different plants/plant parts for the purpose. Offerings during the rituals used to sanctify flame and smoke is called as Hawan or Homa. One of the important characteristics of doing Hawan is it makes the environment toxic free and simultaneously many disease causing agents are eliminated from the environment. The present study communicates regarding the practice of using different plants and plant parts like root, stem, leaf, flower, fruit, rhizome, tuber in ritualistic process of Hawan in the study area. Some of the widely used plants for the above said purpose with curative property include *Butea monosperma* (Lam.) Taub., *Curcuma zedoaria* (Christm.) Rosc., *Glycyrrhiza glabra* L., *Holarrhena pubescens* (Buch.-Ham.) Wall. ex G.Don and *Wrightia tinctoria* (Roxb.) R.Br. The present work attempts to document and design the ever wiping traditional art and craft related to the medico-botanical potential of plants used in Hawan for the fulfilment of religious rites and home ceremonies by the populace of Jajpur district of Odisha.

Key words: Rituals, Hawana, Botanical identity, medicinal utility of the plants, Jajpur Odisha

Introduction

The state of Odisha in India has been a centre of attraction for its cultural heritage and ethnicity since ages. The district of Jajpur is located at 20.85°N 86.33°E with an average elevation of 8 metres and among all the districts of Odisha the magnificence of Jajpur is ornamented with a long and diverse cultural history which is a beautiful blend of philosophical, spiritual and the creative instincts of the local inhabitants. The history of Jajpur dates back to the prehistoric times. Since the name Jajpur itself is a testimony to this being found mentioned in ancient Indian mythology texts and the puranic literatures alike referred to as 'Viraja' and 'Baitarani Tirtha'. This place also finds its name in the 'Kapila Samhita', 'Brahmanda Purana', 'Vayu Purana', 'Tantra Chintamani', 'Astapitha Mahatmya' and 'Chaitanya Charitamrita' holding a great significance among the 'Hindus' and considered to be one of the 'Sakti Pithas' where the amputated corpse of 'Sakti', the consort of 'Shiva' was dropped having been chopped off by 'Lord Vishnu'. Jajpur has also been mentioned in the

Mahabharat where it is stated that, at 'Biraja' in the banks of 'Baitarani', the 'Pandava' brothers had taken up holy dip along with the saint 'Lomash'. 'Birajakshetra' is triangular and in each corner found a 'Siva' temple at equal distance such as 'Bileswar', 'Khiltateswar' and 'Baruneswar'. Beautiful ancient Buddhist and Jaina images are found in the architectural programme of the temples. The 'Brahma Purana' says that there was one less to one crore 'Sivalingas' in Jajpur area, which indicates the religious importance of the place. 'Navigaya' is yet another cultural and ritualistic place of Jajpur district located inside 'Biraja' temple. This place is visited by innumerable travellers for the purpose of 'Shradha' on the banks of Baitarani river.

Jajpur being a district of culturally rich is well connected with a diverse family festivals and rituals. 'Hawan' is one of the important characteristic rites in family rituals, temple daily rituals, and festive occasions for God and Goddesses generally in India and Jajpur in particular. 'Hawan' or 'Homa' literally means offering prayers to God in front of fire. In other words 'Hawan' is a sacred purification ritual that is performed in

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households as well as work places and shops by chanting mantras and worshipping different Gods and Goddesses. There is a hallowed fire in the centre and the priest and family members sit around it. It is a part of the ritual of a 'Hawan' to invoke the divine by paying offerings to fire God - Agni.

The rituals like puja and hawana are performed according to the method described in the Vedas, Upanishads, Dharmasindhu, Nirayasindhu, Vishwamitra karika and Bodhayana's Brahmakarma Samuchaya to get the benefit in the form of good health and ecological equilibrium. There are hundreds of homas or hawanas described in Vedic literature; the common among them are Agnihotra, Ganapathi hawana, Grahashanthi, Mruthyunjayashanthi, Sandhishanthi, Vasthu Rakshoghna homa, Tila homa, Puthrakamesthi and several other. Agnihotra is a simple form of homa which involves lighting fire in a small rectangular copper pyramid pot, using direct cow dung cakes and ghee as offerings to the fire with whisper of mantras at sunrise and sunset (Golechha *et al.*, 1987). Hawanas are modified forms of Agnihotra and includes lighting fire on rectangular Homa kunda prepared using bricks or plantain stem and offering dravyas with chanting mantras. Dravyas include milk and milk products, cakes made up grains and cereal powder, boiled rice and samidhas (plants and plant parts).

People offer sacred puja items derived from plants and plant parts like lotus seeds, fruits, flowers, sandal chips, honey, ghee, herbs and other plant materials to 'Hawan Kund' (sacrificial fire). Besides, wood of different plants are basically used to form the square altar (Yagna Vedi) during Hawan; wherein wood is placed along with oily seeds and other combustion aids. The plants used in 'Hawan' possess unique and some potential effect on different diseases in terms of curative property (Kannathan and Thangamani, 2016; Golechha *et al.*, 1991; Mondkar 1982a,b). Traditional knowledge of the populace of Jajpur explores their scientific approach in many practices. The time-honoured knowledge for using medicinal plants for curing different diseases and disorders explored the botanical identity, biological activity and the separation and characterisation of principal or bioactive compounds (Ljubuncic *et al.*, 2005; Ayyanar and Ignacimuthu, 2005; Koduru *et al.*, 2007).

'Agni' and 'Yajna' play a pivotal role in Hindu weddings, 'Rudravishekha', 'Gruha Pratistha' and related rituals associated with Hindu families. Various mutual promises between the bride and groom are made in front of the fire, and the marriage is completed by actual or symbolic walk around the fire. In this context use of wood (samidha) in 'Hawan' is an important approach from the

medico-botanical identity. Since prehistoric ages, practice of 'Hawan' has not only been a tradition but also becomes an ecological restoration activity. In other sense, utilization and proper documentation of the components serve as tool for the plant diversity conservation and preservation of ever eroding traditional knowledge in view of the consequence of global climate change.

'Homa' or 'Hawan' practised by Hindu community can be classified as 'Ayusha Homa' (for longevity), 'Lakshmi Homa' (for wealth), 'Navagraha Homa' (to relieve from the impacts of planets) and 'Ganesh Homa' (for happy and prosperous life).

Understanding the availability and importance of information the present exploration was carried out in order to provide a firsthand information on the medico-botanical potential of the plants and plant part(s) used in 'Hawan' in Jajpur district of Odisha. The present work documents plants or plant parts used in 'Hawan' in different family rites and other rituals in Jajpur district of Odisha along with observations on their therapeutic potential.

Materials and Methods

Field Survey

Different temples, sacred places, rituals associated with family deities, daily rituals of temples and funeral rites were spotted in Jajpur district. Regular field inventories were executed during 2017-2019 at different time intervals in different seasons through interview with the family priests, temple priests and the Vedic pandits who operate 'Hawan' and chanting mantras. The information on the use of plants and plant parts in 'Hawan' and their medicinal uses were collected from the concerned priests as well as from the local knowledgeable persons and herbal healers besides the folklore claims on medicinal uses of the plants *in situ* maintaining intimacy with the above stakeholders. The devotees were also interacted to collect information and their knowledge on the botanicals used in the 'Hawan' and their possible curative potential in the study area. Due to the difference in the flowering and fruiting seasons of the concerned plant species, field inventories were executed in a suitable way so as to collect updated information in different stages of their life history besides to collect the plants or plant part(s) used in 'Hawan' in family rituals as well as temple daily rituals throughout the year.

Data-Recording

The detailed information on various types of 'Hawan' in different rituals, botanicals used in 'Hawan', the medico-botanical observation of these plants including

Table 1: List of Medico-Botany of Plants and Plant part(s) used in “Hawan” in Jajpur district of Odisha.

Scientific Name & Family	Local Name	Parts used in Hawan	Used against Ailmets
<i>Abutilon indicum</i> (L.) Sweet (Malvaceae)	Pedipedica	Seeds are used in Homa as dravya in some tribal areas of the district.	Decoction of the inflorescence (10 ml) mixed with equal amount of honey is given for seven days against jaundice.
<i>Acacia catechu</i> (L.f.) Willd. (Mimosaceae)	Khaira	Wood is used as 'samidha' in homa.	Decoction of the bark is used by gargling to cure mouth ulcer.
<i>Achyranthes aspera</i> L. (Amaranthaceae)	Apamaranga	Dried plant used as 'samidha' for satisfaction of planets.	The root is chewed and the saliva is held for 5-10 minutes in the mouth against toothache.
<i>Achyranthes bidentata</i> Blume (Amaranthaceae)	Apamaranga	Dried plant used as 'samidha' for satisfaction of planets.	Dried leaves are powdered and smoked against bronchial asthma.
<i>Andrographis paniculata</i> (Burm.f.) Nees (Acanthaceae)	Bhuinlimba	Leaves and dried stem are used in Homa.	Decoction of the stem (1-2 ml) is given with honey for seven days early in the morning to cure intermittent fever.
<i>Aquilaria agallocha</i> Roxb. (Thymeleaceae)	Agaru	Bark extract is used in Homa as dravya.	The bark paste is applied as a poultice mixed with the leaf paste of <i>Pterocarpus santalinus</i> against bone fracture.
<i>Butea monosperma</i> (Lam.) Taub. (Fabaceae)	Palasa	Wood of this plant is used in making 'Sruva' and 'Sucha' for Homa karma.	About 2 g of its seed-ash with cold water given once a day for three days after menstruation to prevent pregnancy.
<i>Caesalpinia bonduc</i> (L.) Roxb. (Caesalpinaceae)	Gila	Fruits used in Homa in rituals associated with funeral in some areas.	3-4 g powder of leaves mixed with juice of black pepper is taken early in the morning in empty stomach against gastro-intestinal disorders.
<i>Calotropis gigantea</i> R.Br. (Asclepiadaceae)	Arakha	Flowers are used during Homa related to rituals of Lord Shiva.	The flower paste is applied all over the affected part of the body to cure skin diseases especially scabies.
<i>Clerodendrum serratum</i> (L.) Moon (Verbenaceae)	Ketu	Root is used in Homa for getting blessings from Lord Ketu.	3-4 tender leaves are taken with equal amount of leaves of <i>Scoparia dulcis</i> against diabetes.
<i>Clitoria ternatea</i> L. (Fabaceae)	Aparajita	Stem is uses as a 'samidha' in Homa worshiping of God 'Saturn' during Shanischara mela.	Dried root powder (3-5 g) mixed with fresh leaves (5 g) of <i>Spermacoce articularis</i> is given to cure insomnia.
<i>Cocos nucifera</i> L. (Arecaceae)	Nadia	The fruit is used as 'dravya' during Homa in different rituals.	The flowers are ground and the paste is applied on the forehead to check headache especially hemicarnia.
<i>Costus speciosus</i> (Koenig) Sm. (Zingiberaceae)	Gaigendalia/ Gaigobara	Rhizome is used during Homa.	Leaves are made into a poultice and applied on the affected part of the body caused due to leprosy.
<i>Curcuma longa</i> L. (Zingiberaceae)	Haladi	Rhizome powder is used as 'muruja' in drawing 'mandala' during Homa karma.	A piece of clean cloth is dipped in 'haladi pani' (water mixed with turmeric powder) and this wet cloth is used to remove redness when the eyes are infected with conjunctivitis.
<i>Curcuma zedoaria</i> (Christm.) Rosc. (Zingiberaceae)	Gandha -sunthi	Rhizome form the components of 'Sarbaousadhi' offered in Homa.	The fresh rhizome (10 g) paste is taken with water twice a day for 10 days against leucorrhoea.
<i>Dalbergia sissoo</i> Roxb. (Fabaceae)	Shishu	Wood is used for 'samidha' in Homa.	Paste of about 20 g leaves with a little common salt is given twice daily for three days to cure diarrhoea.

Scientific Name & Family	Local Name	Parts used in Hawan	Used against Ailmets
<i>Eleusine coracana</i> (L.) Gaertn. (Poaceae)	Mandiya	Whole plant used in 'Homa' during rituals of 'Mandira and Gruha pratistha' (Temple and home propitiation).	The grains are boiled and given to pregnant cows to enhance lactation.
<i>Ficus benghalensis</i> L.(Moraceae)	Bara	Wood is used as 'samidha' during funeral's rituals.	The laticiferous sap (5 ml twice a day for 7 days) of this tree is effective in controlling the diabetes and increasing the capacity of pancreatic cells.
<i>Ficus religiosa</i> L. (Moraceae)	Aswatha/ Peppala	Wood is used as 'samidha' during funeral's rituals.	10 g of bark paste is applied on the swellings due to sprain.
<i>Glycyrrhiza glabra</i> L. (Fabaceae)	Jasti madhu	Wood used as 'samidha' in Homa.	The paste of the stem is externally used against dermatitis, eczema and herpes.
<i>Hemidesmus indicus</i> (L.) R.Br. (Periplocaceae)	Anantamula/ Sugandhi-lai	Root is used during Homa to get the benefits of Mars.	About 10 g of its root paste with leaves of <i>Jasminum sambac</i> is used to cure swelling of joints.
<i>Holarrhena pubescens</i> (Buch.-Ham.) Wall. ex G.Don (Apocynaceae)	Pita keruan /Kurei	Stem of the plant is used as 'samidha' in Homa.	About 2-3 fresh flowers along with the petals of <i>Aganosma caryophyllata</i> are made into paste and used as a poultice to remove abdominal pain caused due to Gynaecological problems.
<i>Justicia adhatoda</i> L. (Acanthaceae)	Basanga	Its dried stem is used in Homa related to family rituals in some parts of the district.	Fresh leaves (3-4) are taken with 2 ml of honey early in the morning in empty stomach once in a day for one week against common cold & cough.
<i>Lawsonia inermis</i> L. (Lythraceae)	Manjuati	Root is used in Homa in temple rituals in some parts of the district.	Leaves and young branches are ground and the poultice (about 30 ml) is taken twice a day for 3 days against jaundice.
<i>Mimusops elengi</i> L. (Sapotaceae)	Baula	Flowers are used as 'dravya' during Homa.	Decoction of its bark is used as gargling against inflammations in tooth.
<i>Phyllanthus emblica</i> L. (Euphorbiaceae)	Aenla	Its flowers and wood used during Homa.	The juice of the fruit (50 ml) mixed with sugarcane juice (150 ml) is taken repeatedly against dysuria when the urine is red in colour.
<i>Prunus cerasoides</i> Buch.-Ham. ex D.Don (Rosaceae)	Padma katha	Wood is used in Homa during house burning (Gruha pratistha).	Decoction of the bark with the leaf paste of <i>Pergularia daemia</i> is applied as a poultice against bone injury.
<i>Shorea robusta</i> Gaertn.(Verbenaceae)	Salua /Salah	Wood used as 'samidha' in all rituals including sacred thread ceremony.	The bark (10g) mixed with the bark (5g) of 'Jamu' (<i>Syzygium cumini</i>) is crushed, fried and taken twice a day for three days against blood dysentery.
<i>Vetiveria zizanioides</i> L. Nash (Poaceae)	Bena	The root of this plant is used in Homa as 'dravya' during Gruha and Mandira Pratistha	Decoction of roots (10 g) is given early in the morning at least half an hour before breakfast for 15 days to check excessive thirst caused due to diabetes.
<i>Wrightia tinctoria</i> (Roxb.) R.Br. (Apocynaceae)	Pita- korua	Wood is used in homa during 'gruha pratistha'.	About 10 ml of decoction of its bark is given twice a day for 15 days to cure stomach ailment.
<i>Ziziphus mauritiana</i> Lam. (Rhamnaceae)	Barakoli	Wood is used as 'samidha' in homa in some parts of the district.	About eight young buds are pestled with one 'clove' (<i>Syzygium aromaticum</i>) after removal of floral parts, all seeds of one 'cardamon' (<i>Elettaria cardamomum</i>),

Scientific Name & Family	Local Name	Parts used in Hawan	Used against Ailments
			5 g of sugar candy and given in a single dose to the patient suffering from measles as remedial measure.
<i>Ziziphus oenoplia</i> L. Mill. (Rhamnaceae)	Kanteikoli/ Kankoli	Dried thorny twig is used as a 'samidha' in 'puskara' during the rituals of funeral ceremony.	About eight young buds are pestled with one 'clove' (<i>Syzygium aromaticum</i>) after removal of floral parts, all seeds of one 'cardamom' (<i>Elettaria cardamomum</i>), 5 g of sugar candy and given in a single dose to the patient suffering from measles as remedial measure.

dosage, duration, method of preparation, mode of administration, precautions followed etc. were recorded. The folklore claims as stated by the native herbal healers in vernacular languages were recorded in the tape recorder. Wherever difficulties were encountered in understanding the language, the recordings were replayed before the temple priests, family priests and native healers through correct translation.

Plant Collection and Herbarium Studies

The supporting plant specimens used in 'Hawan' as well as their therapeutic claims were surveyed and collected by the help of temple priests, native herbal healers and knowledgeable persons. The plant materials were dried by blotting papers though pressing followed by treatment with naphthalene powder and ultimately immersed in saturated solution of mercuric chloride in ethyl alcohol. The materials were allowed to dry completely. After complete drying, specimens were mounted on standard mount boards of size 42×48 cm with the help of fevicol. Herbarium labels were affixed at the bottom right hand corner of the sheet wherein the field data has been transferred.

Specimen Identification

The plants or plant part(s) used in 'Hawan' associated with respective rituals were surveyed in their natural habitats before documentation with the help of local guides and temple priests and devotees for their medicinal uses. The plant specimens collected were identified with the help of regional floras "The Botany of Bihar and Orissa" by H.H Haines (1921-25) and its supplements by Mooney (1950). Further confirmation was done by following "The Flora of Orissa" by Saxena and Brahmam (1994-1996). All these specimens were deposited in Herbarium of Department of Botany, V. N. Autonomous College, Jajpur Road, Odisha (India) for future references.

Cris-cross Checking

Efforts were made to cross-check the medico-botany of plants and plant part(s) used in 'Hawan' having

therapeutic and clinical potential towards different diseases and disorders. This study comprised of scrutiny particular folklore claims by the different dwellers of the same community in different areas of district of Odisha. This process also confirmed the use and identity of plant specimens.

Results and Discussion

Plants & Plant parts used in Hawan

The 'Hawan' for different rituals observed in Jajpur could be broadly categorized in relation to 'Hawan' for divine deities (Gods and Goddesses), for family deities (forefathers), in temple daily rituals and family rituals including marriage and associated rituals. The major plant species utilized in 'Hawan' in connection with the above rituals in the study area are presented in Table-1. Out of a large number of plants or plant parts used in performing 'Hawan', some are required for religious rites such as marriage ceremony, sacred thread ceremony, birth ceremony etc. while others were found associated with festive and funeral rituals. A number of plants were also related to 'Hawan' for propitiatory rituals such as house-warming (Griha Prabesh) occasion and purification purpose. Plants and plant part(s) used in connection with 'Hawan' includes wood, twig, bark, fruits, flowers, rhizome, root, stem, leaves, whole plant, and seeds. Information also includes plants and plant part(s) during religious celebrations [e.g. wood of *Acacia catechu* (L.f.) Willd., *Butea monosperma* (Lam.) Taub., *Clitoria ternatea* L., *Dalbergia sissoo* Roxb., *Ficus benghalensis* L., *Ficus religiosa* L., *Glycyrrhiza glabra* L., *Phyllanthus emblica* L., *Prunus cerasoides* Buch.-Ham. ex D. Don, *Shorea robusta* Gaertn., *Wrightia tinctoria* (Roxb.) R.Br., *Ziziphus mauritiana* Lam.; twig of *Achyranthes aspera* L., *Achyranthes bidentata* Blume, *Ziziphus oenoplia* L. Mill.; bark extract of *Aquilaria agallocha* Roxb.; fruits of *Caesalpinia bonduc* L. Roxb. *Cocos nucifera* L.; flowers of *Calotropis gigantea* R.Br., *Mimusops elengi*

L., *Phyllanthus emblica* L.; rhizome of *Costus speciosus* (Koenig) Sm., *Curcuma longa* L., *Curcuma zedoaria* (Christm.) Rosc.; root of *Clerodendrum serratum* L. Moon, *Hemidesmus indicus* L. R.Br., *Lawsonia inermis* L., *Vetiveria zizanioides* (L.) Nash; stem of *Andrographis paniculata* (Burm.f.) Nees, *Butea monosperma* (Lam.) Taub., *Holarrhena pubescens* (Buch.-Ham.) Wall. ex G.Don, *Justicia adhatoda* L.; leaves of *Andrographis paniculata* (Burm.f.) Nees; whole plant of *Eleusine coracana* L. Gaertn.; seeds of *Abutilon indicum* L. Sweet] in accomplishment of some specific virtues. It is interesting to note that some of these or all of these plants or plant part(s) possess potential curative properties.

Of the plants and plant part(s) used in 'Hawan', some possess native or local importance while other plants have far reaching admiration. Since 'Vedic' ages, plants have been regarded as living beings; it was, therefore, strictly forbidden to hurt or destroy them. In giving nature a sacred sense, the aboriginal communities preserve plant resources in a more holistic way. Although the impact of modernisation has collapsed many indigenous and traditional beliefs, the custom of use of plants in religious practices and rites still maintained its existence. This paper gives an account of 32 species belonging to 21 families and 28 genera of plants and their part(s) used in 'Hawan' associated with different rituals and ceremonies observed by the different localities of human population in Jajpur district of Odisha Table 1.

Conclusion

The use of plants, and plant part(s) in 'Hawan' associated with Indian culture and tradition in general and Jajpur in particular during celebration of family rituals as well as temple daily rituals, besides specific and customary use of certain floristic objects in Hawan during festivals and rituals show how intricately the religious fraternity of this historically and culturally rich district known as Yajnakshetra or Yajnapura contribute immensely towards the protection and preservation of the plant diversity of the area. From the present inventory of the plants and plant part(s) used in 'Hawan' for the fulfilment of various religious rites in the district of the Jajpur it can be concluded that the inhabitants of this district have been successful in using the plant resources in their usual activities. Thus, in giving nature a holistic and religious approach, the native population conserves natural plant resources in a more integrative manner for sustainable use of the plant resources. Interestingly, majority of these plants naturally possess therapeutic ability in remediating a range of diseases and disorders. However, it is a matter of concern that some of the plants with highly valued

therapeutic properties of these religion-medico-botanical resources are not properly conserved neither by the priests nor by the common mass. Hence, botanising such plants with correct botanical names, synonyms, local names and information on the active principles and their native ethnic potential against various ailments in an inventory is inevitable. Besides the above, in order to conserve these valuable healing plants against wanton destruction due to over-exploitation, domestication through propagation and maintenance at the premises of the temples as well as in and around the courtyard of the private dwelling places, government and private institutes and offices, village schools and community centers aimed at preserving and conserving the germplasm of these potential resources in the scenario climate change conserving plant diversity of Jajpur district in particular and the state of Odisha in general.

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