



Medico-Religious Plants Employed in Mauritius: A Survey Among Hindu Priests

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Abstract

Mauritius is renowned for its rich floral and cultural diversity. The aim of this study was to identify and document medicinal plants exclusively employed in rituals and to promote wellness among the Hindu community. In addition, it also highlights poorly documented plants with respect to their safety, efficacy, and herb–drug interaction inducing potential. The informant group included Hindu priests ($n=14$) solely, while the relative frequency of citation (RFC) and use value (UV) were utilised to analyse the data. A total of 33 plants were reported in this survey. Sixteen plants were reported by informants to have both medicinal and religious values, while the highest RFC and UV index was obtained by *Ocimum tenuiflorum* L. (RFC=0.79; UV=0.71). Nonetheless, despite known and utilised commonly for years by humanity, various plant species mentioned in this study have been poorly evaluated in randomised clinical trials and for any risks of herb–drug interactions. Hence, there are concerns surrounding the safe use of these plant species particularly among patients suffering from chronic diseases.

Keywords Mauritius · Medicinal plants · Hindu community · Medico-religious plants

Introduction

Since the primitive era of mankind, the relationship between human and plants has enormously evolved over generations of experience and practice (Kumar 2009). With time and onset of different civilisations, the struggle of man against various ailments has resulted in comprehending and keeping an accumulated knowledge of medicinal plants usage derived from fruit, seed, bark, flower including other parts of

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plants (Petrovska 2012). What started as an instinctive search of remedies for diseases, ethnobotany became a field of research (Petrovska 2012).

Notably, one country possessing one of the richest collections of plant-based medicinal traditions and rituals is India with most information derived from the Ayurveda. This Hindu tradition is contemplated to be the provenance of systemised medicine because ancient Hindu scriptures on medicine contain no references to foreign medicine whereas Greek and Middle Eastern texts do mention ideas and medications of Indian origin (Heinrich et al. 2012). There is a strong belief in Hinduism that God has imparted divine powers to selected plants which are in turn used in rituals and concoctions as well as to improve the health of human beings. Early sacred Hindu texts like Vedas and Upanishads refer sacred plants as the most vital living forms on Earth (Fowler-Smith 2009). The aim of plant adoration or its uses in cultural activities has continually been in their preservation and utilisation in the most viable way (Sharma and Pegu 2011).

In addition, in the sacred Atharva Veda, there is mention of a panoply of plant species worn as amulets or garlands to cure several ailment conditions, to bring good luck as well as to cast evil spirits (Singh and Singh 1996). Diverse plant parts such as leaves, stems, barks, flowers are presented as offerings during the fulfilment of several Hindu rituals which is done in the most sustainable manner (Ravishankar 1996).

Indeed, the adornment of plants and their employment to worship god is an ancient practice in Hinduism and is believed to have taken birth in the initial stage of human society development. The use of plant species in peculiar Hindu rituals denotes the profound relationship between humans and plants. Mostly, several plants are closely associated with the Hindu deities. For example, in India, the plants *Aegle marmelos* L. Corr. and *Ficus religiosa* L. are considered important representations of the deities Shiva and Vishnu (Ramanayya 1985).

Interestingly, different plants are employed to worship different gods and the rituals vary according to the castes. The profound cultural and medical significance attributed to plants in sacred Hindu scriptures has enabled the preservation of such plants and the knowledge surrounding their medico-religious properties over time (Silori and Badola 2000). There is also a strong belief among the Hindus that without respecting the plants, their use in rituals would be futile.

In line with cultural rituals and traditions practiced in India, Mauritians of Indian origin known as “Indo-Mauritians” employ a significant number of plants in the practice of their religion. Enthrillingly, the legacy surrounding Ayurvedic knowledge and Hindu rituals has been passed on to Mauritians from indentured labourers succeeding their arrival from India in 1834 (Naujoks 2009).

Indo-Mauritians are the most preponderant within the population followed by the Christian community and the Sino-Mauritians community (Mahomoodally et al. 2016). The Hindu community is subdivided into diverse distinct religious and socio-cultural groups. The topmost religious groups are the Hindi- or Bhojpuri-speaking people constituting 40.2% of the total population. The Tamils are the second largest ethnic community (13.9%), while Telugus (5.6%) and Marathis (4%) represent smaller minorities within the overall Hindu community. The Hindus have several common religious practices and rituals (Mahomoodally et al. 2016).

During the past years, several studies have also been conducted in Mauritius to highlight the medical importance of plant species locally (Chintamunnee and Mahomoodally 2012; Nunkoo and Mahomoodally 2012; Suroowan and Mahomoodally 2013; Mootoosamy and Mahomoodally 2014). On the other hand, the medico-religious aspects of plants among Hindus as well as other religious groups have not been given due attention. Consequently, there is a dearth of dissemination of such knowledge among the scientific community.

A plethora of Hindu festivities such as the “Durga puja”, “Rama Navami”, Divali, Mahashivratri among others are followed through the performance of different rituals in Mauritius, for example: “pooja”, “havan” or “hawan”, “haldi vidhi”, “yajna” as well as several other ceremonies. Yet, little information is available about the extent up to which the medicinal plants are used in different cultural rituals of Indo-Mauritians. Therefore, this study is the first in its kind to record, disseminate, and highlight the medicinal plants that are used in cultural rituals and for wellness among the Hindu community of Mauritius.

Methods

Study Area

Mauritius is a subtropical island located in the south west of the Indian Ocean with coordinates 57°30' east and 20°20' south (Fig. 1). It has a population of around 1,262,862 with ethnic groups comprising of Indo-Mauritians, Sino-Mauritians and people of mixed European and African provenance. The Hindus constitute about 44% of the total population and mostly share the same type of religious beliefs, rituals, and practices (“Population and Vital” 2015; Mootoosamy and Mahomoodally 2014; Sreekeesoon and Mahomoodally 2014).

Data Collection

The project was approved by the Department of Health Sciences, Faculty of Science, University of Mauritius, Mauritius. We attempted to follow the best field practice in the present ethnopharmacological survey as described previously (Heinrich et al. 2009; Heinrich and Verpoorte 2014; Heinrich et al. 2018; Weckerle et al. 2018), and as per the code of ethics stipulated by the International Society of Ethnobiology Code of Ethics (<http://ethnobiology.net/code-of-ethics/>) to amass primary data from key informants. Data were gathered by conducting face to face interviews, during the academic year 2015–2016, using a semi-structured questionnaire. Before the interviews, each participant was requested to read an information sheet describing the study and the document was signed with the assurance that confidentiality will be maintained. The interviews were carried out in native language “Creole”, and the findings were recorded in English except for the vernacular names of plants and rituals. The questionnaire consisted of the following: demographic information of the participant, vernacular

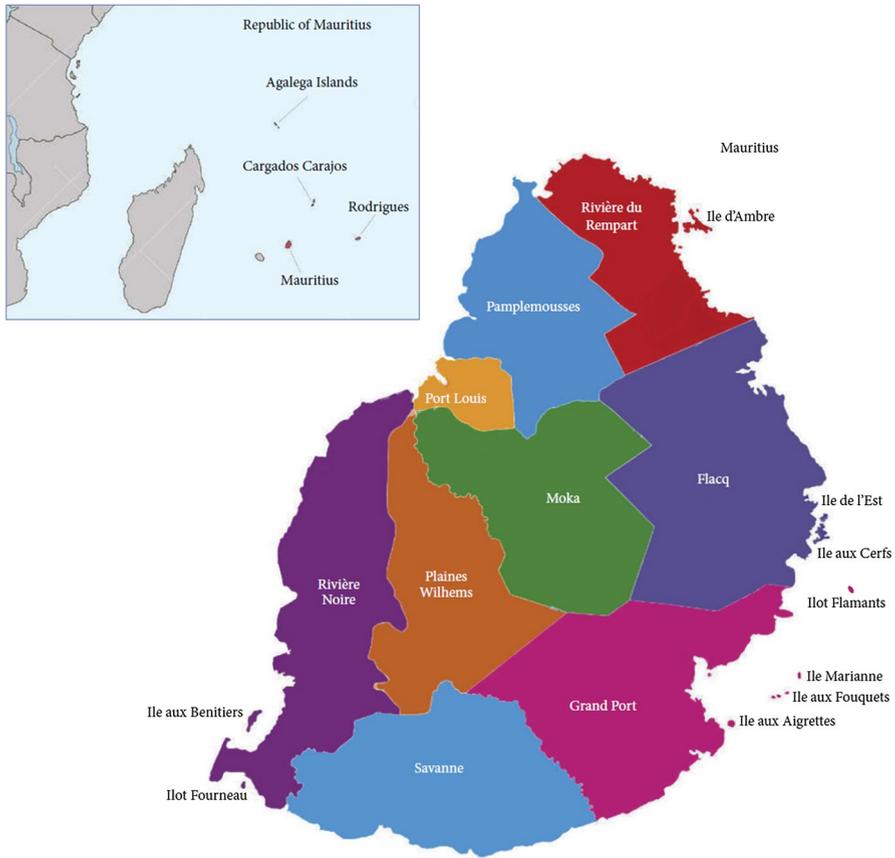


Fig. 1 Map of Mauritius (“Mauritius Map”, n.d)

name of plant, part of plant used, name of ritual in which it is used, the religious and medicinal virtues of the plant. The respondents were also assured that the information collected will be used solely for academic purposes with the intention of accumulating and knowledge sharing.

Sample Size

The sample size was estimated by purposive sampling. Purposive sampling represents a group of different non-probability sampling techniques. The main goal of using purposive sampling was to focus on particular characteristics of the population that are of interest in order to meet the aim and objectives of this study. A total of 14 key respondents ($n = 14$) who were known to have experience and knowledge of Hindu cultural rituals and practices involving plants were interviewed.

Identification of Plants

Each plant of medico-religious value obtained during the survey was taken for further study and assigned a collection number (CN). The information gathered in different areas, for example, vernacular names of peculiar plants, was cross-checked with distinct informants alongside referring to locally published books and articles for proper identification of individual species (Suroowan and Mahomoodally 2013; Mootoosamy and Mahomoodally 2014). In addition, voucher specimens of individual plants were stored to create a local and personal database which may prove useful for future data mining purpose. Furthermore, their scientific and complete authority names were confirmed using the International Plant Name Index (“The International Plant Names Index” 2015).

Data Analysis

Data were analysed using Microsoft Excel 2010. Data collected were analysed to highlight the relative importance of each individual species among the Hindu community. In particular, two indices were employed.

Relative Frequency of Citation

The relative frequency of citation (RFC) demonstrates the local importance of each plant species (Vitalini et al. 2012). The RFC index is obtained as follows: $RFC = FC/N$, where FC is the number of respondents who mentioned the plant species and N is the total number of respondents participating in the study. This index theoretically varies from 0 to 1. When RFC index is 0, it means that nobody refers to the plant as useful, and when RFC index is 1, it means that all respondents in the survey refer to the plant as useful (Mootoosamy and Mahomoodally 2014).

Use Value

The use value (UV) demonstrates the relative importance of each plant species. The UV is obtained as follows: $UV = U/N$, where U is the number of citation per plant species and N is the total number of informants participating in the survey (Vitalini et al. 2012; Nunkoo and Mahomoodally 2012). This quantitative method will show how earnestly the medicinal plants are being used by the Hindu priests of Mauritius. Occurrences of obtaining plants that are not mentioned for medical uses but which are in real medicinal plants is possible. The UV of a species can be beneficial in finding its credibility of use and pharmacological characteristics (Chintamunnee and Mahomoodally 2012).

Results and Discussion

Hindu priests from Mauritius are knowledgeable about local plants and their various uses. The survey revealed that both elder and younger priests had a good knowledge of the religious and medicinal value(s) of plants employed in the Hindu cultural rituals.

Demographic Information of Participants

Most Hindu priests (93%) practiced Hindu rituals as part-time jobs and were educated up to tertiary level (50%), followed by 43% (secondary level), and 7% (primary level). All the participants resided in rural regions of Mauritius and the highest monthly household income documented by the respondents appeared to be Rs 10,001–20,000 (43%). The demographic variables are listed in Table 1.

The high frequency of the age group 20–29 years (43%) reflects the interest of the youth to carry on with the legacy of Hindu priest practice left by the elders of the

Table 1 Demographic data of the respondents

Variable	Categories	Frequency (%)
Age (years)	20–29	6 (43)
	30–39	1 (7)
	40–49	3 (22)
	50–59	1 (7)
	60–69	2 (14)
	70–79	1 (7)
	≥ 80	0 (0)
Gender	Male	7 (50)
	Female	7 (50)
Level of education	No formal education	0 (0)
	Primary	1 (7)
	Secondary	6 (43)
	Tertiary	7 (50)
Hindu priest practice	Part-time	13 (93)
	Full-time	1 (7)
Monthly household income	No revenue	2 (14)
	Rs < 5000	0 (0)
	Rs 5001–10,000	0 (0)
	Rs 10,001–20,000	6 (43)
	Rs 20,001–30,000	2 (14)
	Rs > 30,001	4 (29)
Area of residence	Rural	14 (100)
	Urban	0 (0)

1 USD ~ 33 Mauritian rupees (Rs)

society. Also, Hindu priest practice is not solely reserved to a specific gender since both men and women among various age groups were interviewed.

Plants Used by Hindu Priests of Mauritius

The Hindu priests usually learn about Hindu cultural rituals via apprenticeship, self-teaching or through courses. Most mediums of learning usually omit the medicinal properties of the plants due to complexity or irrelevance to the rituals. Hence, know-how on the specific medicinal and wellness attributes of the plants is slightly undermined. Young priests were found to be quite knowledgeable about the plants used in the Hindu rituals, and this suggests that the wisdom of the elder priests has passed on to the younger generation.

Table 2 depicts plants used by the Hindu priests of Mauritius in cultural rituals and some of which according to the best of their knowledge also possess medicinal and wellness properties. The World Health Organization (WHO) first mentioned wellness as ideal health where a person is not only disease-free but have integral physical, social, and mental well-being (“Wellness Defined”, n.d.). Wellness nowadays additionally encompasses the financial, environmental, intellectual, emotional, occupational, and spiritual comforts of a person (“Wellness services”, n.d.).

A total of 33 plants species belonging to 27 families were recorded in this study. Information on any plant recorded included the scientific name, botanical family name, the local name or vernacular name (VN), the Common English Name (CEN), parts of plant used (see Fig. 2), rituals in which they are utilised, their wellness, and medicinal properties.

As compared to other similar studies, this survey demonstrated a high number of plants used in Hindu rituals. A study performed in Madhya Pradesh, India, by Ahirwar (2015) documented only 16 medico-religious plants. Similarly, only 13 medico-religious plants were reported by Sahu et al. (2013) in a study carried out in Madhya Pradesh, India. However, Sharma et al. (2014) reported 40 plant species with religious and medicinal values used in Hindu rituals among the residents of West Bengal. Nonetheless, the interviewees in these studies comprised of traditional practitioners, priests, and local residents as well. The respondents in this current study involved only fourteen Hindu priests. Indeed, Hindu priests can be considered as the most experienced and knowledgeable figures concerning the practice of Hindu rituals and hence can provide accurate information about medico-religious use of plants.

The six plant families with highest mentions were Rutaceae, Zingiberaceae, Poaceae, Solanaceae, Moraceae, and Lythraceae with two species each, while other families had only one species each. Leaves of plants (36%) were mostly used by the Hindu priests for rituals and wellness, followed by fruits (18%), whole plants (9%), flowers (9%), seeds (7%), stems (5%), wood (4%), and bulb, bark, rhizome, pod, root, and bud (2%). Sixteen plants (48.5%) were reported to have medico-religious properties. Plants like *Allium sativum* L., *Citrus × aurantifolia* (Christm.) Swingle, *Curcuma longa* L., *Mangifera indica* L., and *Ocimum tenuiflorum* L. were reckoned to be highly effective against evil spirits.

Table 2 Plants used by Hindu priests in Mauritius

PSN	Scientific name	Family	C. no.	VN/CEN	Part(s) used	Religious virtue of plant	Wellness properties of plant	Medicinal virtue of plant	Previously recorded literature on medicinal virtue of plant used in Hindu rituals	RFC	UV
1.	<i>Aegle marmelos</i> (L.) Corr.	Rutaceae	LK1607	Bilvapatra/ Wood apple	Leaf	108 leaves are used in “Hawan” ritual The leaf shape is said to symbolise three-eyed Lord Shiva The leaves are offered to Lord Shiva with the belief that it will cool down the poison effect in his throat	When offered in “Hawan” ritual, the fume that emanate serves as mosquito repellent	It controls diabetes	Anastigmatic, laxative, antidiabetic; used against stomach ache ¹ , cholera, dysentery ² , and asthma ⁵	0.50	0.21
2.	<i>Allium sativum</i> L.	Amaryllidaceae	LK1629	L’ail/Garlic	Bulb	It is used to ward off evil	–	Have antimicrobial properties	Used against severe lungs congestion, cough, bronchitis, hypertension, and skin disease ² . It has carminative, antiseptic, and antibacterial properties ³	0.14	0.14

Table 2 (continued)

PSN	Scientific name	Family	C. no.	VN/CEN	Part(s) used	Religious virtue of plant	Wellness properties of plant	Medicinal virtue of plant	Previously recorded literature on medicinal virtue of plant used in Hindu rituals	RFC	UV
3.	<i>Azadirachta indica</i> A. Juss.	Meliaceae	LK1616	Neem/Indian lilac	Leaf	Is used to decorate place of worship Used in "Hawan" ritual The tree is blessed by Deity Kali	When the leaves are offered in "Hawan" ritual, the fumes that emanate serve as mosquito repellent	Have astringent and antiallergic properties Have stomachic properties	Dried leaves are burnt to kill mosquitoes ¹ . It is used against skin diseases ¹ , intestinal worms, high fever ² , malaria, and hyperdipsia ⁵	0.36	0.36
4.	<i>Cinnamomum verum</i> J. Presl.	Lauraceae	LK1630	Canel/Cinnamon	Bark	Used in "Hawan" ritual	When used in "Hawan" ritual, the fume that emanate is believed to boost up immunity	–	Useful against high level of cholesterol when taken together with <i>Camellia sinensis</i> L. Kuntze ⁶	0.14	0.07
5.	<i>Citrus × aurantifolia</i> (Christm.) Swingle	Rutaceae	LK1610	Limon/Lime	Fruit	Keeps evil at bay	–	Used against flu-like diseases, fever and throat infections	Used against hypertension, type 2 diabetes, cardiovascular diseases ⁶	0.07	0.29

Table 2 (continued)

PSN	Scientific name	Family	C. no.	VN/CEN	Part(s) used	Religious virtue of plant	Wellness properties of plant	Medicinal virtue of plant	Previously recorded literature on medicinal virtue of plant used in Hindu rituals	RFC	UV
6.	<i>Cocos nucifera</i> L.	Areaceae	LK1604	Coco/Coconut	Fruit	Spots on the fruit is said to symbolise three-eyed Lord Shiva Coconut breaking is very auspicious and is considered as breaking one's ego	–	Coconut water is rich in nutrients and good for health	Used against renal failure, cataracts, type 1 and 2 diabetes ⁶ . Useful against stomach and kidney problems, rheumatism, and backaches ⁵	0.07	0.14
7.	<i>Crocus sativus</i> L.	Liliaceae	LK1624	Kesar/Saffron	Flower	Used in “Mastak abhishek” and offered in “Hawan” rituals	In “Mastak abhishek”, it is believed to have a cooling effect on the head In “Hawan” ritual, the fume that emanate acts as an air purifier	–	Antihypertensive, anti-convulsant, antitussive, antigenotoxic and cytotoxic effects, anxiolytic aphrodisiac, antioxidant, antidepressant, antinociceptive, anti-inflammatory, and relaxant activity ^{7,8}	0.43	0.14

Table 2 (continued)

PSN	Scientific name	Family	C. no.	VN/CEN	Part(s) used	Religious virtue of plant	Wellness properties of plant	Medicinal virtue of plant	Previously recorded literature on medicinal virtue of plant used in Hindu rituals	RFC	UV
8.	<i>Curcuma longa</i> L.	Zingiberaceae	LK1603	Haldi/Turmeric	Rhizome	Applied on skin of groom and bride during “Haldi” ritual in Hindu weddings to protect them from evil Its yellow colour is considered auspicious	It is applied as a paste on the skin for beautification, to keep it fair and glowing	–	Used against fever, cough, skin diseases, and burning sensation ^{2,5}	0.43	0.36
9.	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	LK1605	Durva/Bermuda grass	Leaf	Plant is blessed by Lord Ganesha and is offered to please him It is used to apply turmeric on idols and in “Haldi” ritual of Hindu wedding	–	Juice extract of the leaves is said to have demulcent, astringent and diuretic properties It is also believed to act as a laxative	Used against hyperdipsia, wounds, conjunctivitis, skin diseases, vomiting, diarrhoea, dysentery ⁵ and indigestion ³ . Effective against hypertension and cobra snake bite ¹	0.14	0.50

Table 2 (continued)

PSN	Scientific name	Family	C. no.	VN/CEN	Part(s) used	Religious virtue of plant	Wellness properties of plant	Medicinal virtue of plant	Previously recorded literature on medicinal virtue of plant used in Hindu rituals	RFC	UV
10.	<i>Datura stramonium</i> L.	Solanaceae	LK1606	Datura/ Devil's trumpets	Fruit, leaf, Seed, flower	It is offered to Lord Shiva to please him	–	–	Used against asthma, whooping cough, muscle spasm ⁵	0.14	0.07
11.	<i>Elettaria cardamomum</i> Maton.	Zingiberaceae	LK1621	Elaiti/Cardamom	Pod	Offered in "Havan" ritual	The fume that emanate acts as an air purifier	–	Sedative, antihypertensive, antibacterial ¹⁷ . Used against asthma ¹⁸	0.43	0.07
12.	<i>Evolvulus alsinoides</i> Linn.	Convolvulaceae	LK1631	Vishnukranti/Slender dwarf morning glory	Leaf	Offered to please Lord Ganesha	–	It is said to be used against kidney stones	Nootropics, anti-amnesic, adaptogenic, antimicrobial, and gastro-protective activity ¹⁹ . Anti-inflammatory, antipyretic, and antidiarrhoeal activities ²⁰	0.07	0.14
13.	<i>Ficus benghalensis</i> L.	Moraceae	LK1617	Banyan/ Indian banyan	Tree	Praying Lord Shani under the tree will reduce evil effects of planet Saturn on a person.	–	–	Useful in rheumatism, lumbago, bruises, inflammations, cracks of the sole, and skin diseases ^{2,3} . Antidiabetic ^{2,3} . Aphrodisiac ¹	0.07	0.07

Table 2 (continued)

PSN	Scientific name	Family	C. no.	VN/CEN	Part(s) used	Religious virtue of plant	Wellness properties of plant	Medicinal virtue of plant	Previously recorded literature on medicinal virtue of plant used in Hindu rituals	RFC	UV
14.	<i>Ficus religiosa</i> L.	Moraceae	LK1611	Peepal/Sacred fig	Tree	Praying Lord Shani under the tree for 8 Saturdays will remove negative influences from the person	–	–	Antibacterial and anti-inflammatory properties; useful against wounds, skin diseases, and asthma ⁵ . Used to treat gonorrhoea, scabies, diarrhoea, dysentery, and can be used as a laxative ⁶ .	0.07	0.07
15.	<i>Lawsonia inermis</i> L.	Lythraceae	LK1626	Mehendi/Henna	Leaf	Used in “Mehendi” ritual in Hindu weddings	When applied on hands, it is believed to calm down the nerves	–	Antifungal, antibacterial, antiviral, antimicrobial, wound healing, analgesic, hepatoprotective, anti-inflammatory, antiparasitic, antioxidant, anticancer, antidiabetic properties ³²	0.07	0.07

Table 2 (continued)

PSN	Scientific name	Family	C. no.	VN/CEN	Part(s) used	Religious virtue of plant	Wellness properties of plant	Medicinal virtue of plant	Previously recorded literature on medicinal virtue of plant used in Hindu rituals	RFC	UV
16.	<i>Mangifera indica</i> L.	Anacardiaceae	LK1609	Mangue/Mango	Leaf	It is said to keep prayer place sacred and safe from evils. It is considered as a holy and auspicious plant for the Hindu.	–	Extract of mango leaves is said to be used against diabetes.	Used against respiratory disorders, for preventing conception ¹ ; constipation, urinary disorders ² ; stomach disorder ³ ; diarrhoea, rheumatism ⁵ ; type 2 diabetes ⁶ .	0.14	0.14
17.	<i>Musa acuminata</i> Colla.	Musaceae	LK1612	Banana/Wild banana	Fruit	Used as offering to please Hindu Deities.	Contains nutrients good for the body.	–	Astringent ² ; used against dysentery, jaundice, and frailness ⁵ , anaemia, diarrhoea ² .	0.14	0.29
					Leaf	Is used as platter to conduct rituals and hold offerings.	–	–	–		
					Plant	The plant is believed to keep prayer place sacred.	–	–	–		

Table 2 (continued)

PSN	Scientific name	Family	C. no.	VN/CEN	Part(s) used	Religious virtue of plant	Wellness properties of plant	Medicinal virtue of plant	Previously recorded literature on medicinal virtue of plant used in Hindu rituals	RFC	UV
18.	<i>Myristica fragrans</i> Houtt.	Myristicaceae	LK1622	Jaiphal/Nutmeg	Fruit	Used as offering in "Hawan" ritual	When offered in "Hawan" ritual, the fume that emanate acts as an air purifier	–	Antibacterial, anti-inflammatory, antioxidant and anticollagenolytic ³³	0.36	0.07
19.	<i>Ocimum tenuiflorum</i> L.	Lamiaceae	LK1602	Tulsi/Holy basil	Leaf	Is given as offering together with "Prasad" and fruits to the Hindu Deities. It is believed to bring prosperity in one's life. Used as offering in "Agnihotra" ritual	Infusion of the leaves is taken to keep in good health. When offered in "Agnihotra" ritual, the fume that emanate serves as mosquito repellent and air purifier	It is said to be used against fever, cold, cough, sore throat, kidney stone, and heart disorders	Used against respiratory disorders ^{1,21} , type 2 diabetes, hypertension, cataract, erectile dysfunction, hypercholesterolaemia ⁶ , urinary disorders, and skin diseases ^{3,5}	0.79	0.71

Table 2 (continued)

PSN Scientific name	Family	C. no.	VN/CEN	Part(s) used	Religious virtue of plant	Wellness properties of plant	Medicinal virtue of plant	Previously recorded literature on medicinal virtue of plant used in Hindu rituals	RFC	UV
				Stem, Root	Used in “Hawan” ritual	When offered in “Hawan” and “Agnihotra” rituals, the fume that emanate acts as an air purifier	–			
				Plant	Plant is blessed by Lord Vishnu. It is planted in the yard for worship and to keep evil at bay		–			

Table 2 (continued)

PSN	Scientific name	Family	C. no.	VN/CEN	Part(s) used	Religious virtue of plant	Wellness properties of plant	Medicinal virtue of plant	Previously recorded literature on medicinal virtue of plant used in Hindu rituals	RFC	UV
20.	<i>Phyllanthus emblica</i> L.	Phyllanthaceae	LK1618	Amla/Indian gooseberry	Fruit	Used as offering in “Agnihotra” and “Hawan” ritual	When offered in “Agnihotra” ritual, the fume that emanate acts as an air purifier When offered in “Hawan” ritual, the fume that emanate serves as mosquito repellent	–	Laxative ¹ ; type 2 diabetes and hypercholesterolaemia ⁶	0.29	0.14
					Leaf	Used as offering in “Agnihotra” ritual	When offered in “Agnihotra” ritual, the fume that emanate acts as an air purifier	–			

Table 2 (continued)

PSN	Scientific name	Family	C. no.	VN/CEN	Part(s) used	Religious virtue of plant	Wellness properties of plant	Medicinal virtue of plant	Previously recorded literature on medicinal virtue of plant used in Hindu rituals	RFC	UV
21.	<i>Piper betle</i> L.	Piperaceae	LK1608	Paan/Betel	Leaf	Purifies water in “Kalash” pot Used as plate to offer “Prasad”, flowers and money to Hindu Deities Used as offering to the elders	–	Act as a blood thinner and cleanse the blood Chewing betel leaves improves digestion When offered in “Hawan” ritual, the fume that emanate is believed to have antimicrobial properties	Used against respiratory disorders ^{5,21} ; useful against loss of appetite and stomach pain ²	0.36	0.50
22.	<i>Pimpinella anisum</i> L.	Apiaceae	LK1627	Grosanis/Aniseed	Seed	Used in “Hawan” ritual	Used for its aroma	–	Antimicrobial, antifungal, antiviral, antioxidant, muscle relaxant, analgesic, and anticonvulsant ³⁰ . Cytotoxic activity on human prostate cancer cell line ³¹	0.14	0.07

Table 2 (continued)

PSN	Scientific name	Family	C. no.	VN/CEN	Part(s) used	Religious virtue of plant	Wellness properties of plant	Medicinal virtue of plant	Previously recorded literature on medicinal virtue of plant used in Hindu rituals	RFC	UV
23.	<i>Punica granatum</i> L.	Lythraceae	LK1615	Anaar/Pomegranate	Fruit	It is offered to Dety Durga to please her	–	Have astrigent and stomachic properties	Antimicrobial, antioxidant, anticancer, anti-inflammatory ²⁹	0.07	0.21
24.	<i>Quercus infectoria</i> Oliv.	Fagaceae	LK1632	Manjakani/Gall oak	Leaf	It is offered to Lord Ganesha to please him	–	It is said to treat asthma and has anti-inflammatory effects	Antibacterial properties ²⁷ ; used on wounds ²⁸	0.07	0.21
25.	<i>Rosa</i> L.	Rosaceae	LK1620	Gulab/Rose	Flower	Used in “Mastak abhishek” ritual	In “Mastak abhishek”, it is believed to have a cooling effect on the head	–	–	0.29	0.07
26.	<i>Saccharum officinarum</i> L.	Poaceae	LK1614	Canne/Sugarcane	Stem	In the form of sugar, it is used to sweeten cakes that are offered to please the Hindu Deities	–	–	Used in the treatment of jaundice, haemorrhage, dysuria, anuria, and other urinary diseases ²⁴ . Antibacterial properties ²⁵ . May reduce the risk of colon cancer ²⁶	0.07	0.07

Table 2 (continued)

PSN	Scientific name	Family	C. no.	VN/CEN	Part(s) used	Religious virtue of plant	Wellness properties of plant	Medicinal virtue of plant	Previously recorded literature on medicinal virtue of plant used in Hindu rituals	RFC	UV
27.	<i>Santalum album</i> L.	Santalaceae	LK1623	Chandan/Sandalwood	Wood	In the form of a paste, it is used in "Mastak abhishek" ritual	In "Mastak abhishek", it is believed to have a cooling effect on the head	–	Used against skin diseases, burning sensation, jaundice, intermittent fever, and weakness ⁵	0.50	0.14
					Wood, Leaf	Used in "Hawan" ritual	When used in "Hawan" ritual, the fume that emanate is believed to purify the air	–			
28.	<i>Solanum indicum</i> L.	Solanaceae	LK1633	Brihati/Poison berry	Leaf	It is offered to Lord Ganesha to please him	–	It is said to be an antioxidant and to have anticancer properties	Antibacterial ²³	0.07	0.21

Table 2 (continued)

PSN	Scientific name	Family	C. no.	VN/CEN	Part(s) used	Religious virtue of plant	Wellness properties of plant	Medicinal virtue of plant	Previously recorded literature on medicinal virtue of plant used in Hindu rituals	RFC	UV
29.	<i>Syzygium aromaticum</i> (L.) Merrill & Perry.	Myrtaceae	LK1628	Giroffle/Clove	Bud	Used in "Hawan" ritual	When used in "Hawan" ritual, the fume that emanate is believed to enhance eye vision	–	Used against cough ²¹ ; Antiviral, antimicrobial, antiseptic, and antifungal ²²	0.14	0.07
30.	<i>Tagetes patula</i> L.	Asteraceae	LK1613	Genda/French marigold	Flower, Leaf	Its flowers are offered to please Hindu Deities with the belief to receive blessings in return	–	Extract of leaves and flower has styptic and alterative properties	Anti-inflammatory ⁹ , antiparasitic (against certain nematodes) ¹⁰	0.07	0.21
31.	<i>Tinospora cordifolia</i> Miers.	Menispermaceae	LK1619	Giloy/Heart-leaved Moonseed	Leaf	Used in "Hawan" ritual	–	When used in "Hawan" ritual, the fume that emanate is believed to boost up immunity	Antidiabetic, antiperiodic, antispasmodic, anti-inflammatory, antiarthritic, antioxidant, antiallergic, antistress, antileptotic, antimarial, hepatoprotective, immunomodulatory, and antineoplastic activities ^{11,12}	0.36	0.07

Table 2 (continued)

PSN	Scientific name	Family	C. no.	VN/CEN	Part(s) used	Religious virtue of plant	Wellness properties of plant	Medicinal virtue of plant	Previously recorded literature on medicinal virtue of plant used in Hindu rituals	RFC	UV
32.	<i>Trigonella foenum-graecum</i> L.	Fabaceae	LK1625	Methi/Fenu-greek	Seed	Used in “Hawan” ritual	–	Is believed to have anti-inflammatory effects	Used against hypercholesterolaemia and erectile dysfunction ⁶	0.07	0.07
33.	<i>Vitis vinifera</i> L.	Vitaceae	LK1601	Raisin/Grape	Fruit	Used as offering in “Hawan” ritual	–	–	Treatment of diarrhoea, haemorrhage, varicose veins, haemorrhoids, inflammatory conditions, hepatitis and free radicals-related diseases ¹³ , high blood pressure ¹⁴ , leishmaniasis ¹⁵ . It has antimicrobial properties ¹⁶	0.07	0.07

PSN plant species number, C. no collection number, VN vernacular name, CEN common English name, RFC relative frequency of citation, UV use value

¹Sahu et al. (2013); ²Sharma et al. (2012); ³Sapkota (2014); ⁴Ahirwar (2015); ⁵Sharma et al. (2014); ⁶Mahomoodally et al. (2016); ⁷Srivastava et al. (2010); ⁸Bhargava (2011); ⁹Yasukawa and Kasahara (2013); ¹⁰Priyanka et al. (2013); ¹¹Saha and Ghosh (2012); ¹²Krishna et al. (2008); ¹³Urbi et al. (2014); ¹⁴Jassim et al. (2010); ¹⁵Man-sour et al. (2013); ¹⁶Nirmala and Narendhirakannan (2011); ¹⁷Sharma et al. (2011); ¹⁸Khan et al. (2011); ¹⁹Singh (2008); ²⁰Lekshmi and Reddy (2009); ²¹Suroowan and Mahomoodally (2016); ²²Bhowmik et al. (2012); ²³Gavimath et al. (2012); ²⁴Singh et al. (2015); ²⁵Uchemma et al. (2015); ²⁶Pallavi et al. (2012); ²⁷Basri et al. (2012); ²⁸Umachigiri et al. (2008); ²⁹Mignel et al. (2010); ³⁰Shojati and Fard (2012); ³¹Kadan et al. (2013); ³²Sahu et al. (2012); ³³Jangid et al. (2014)

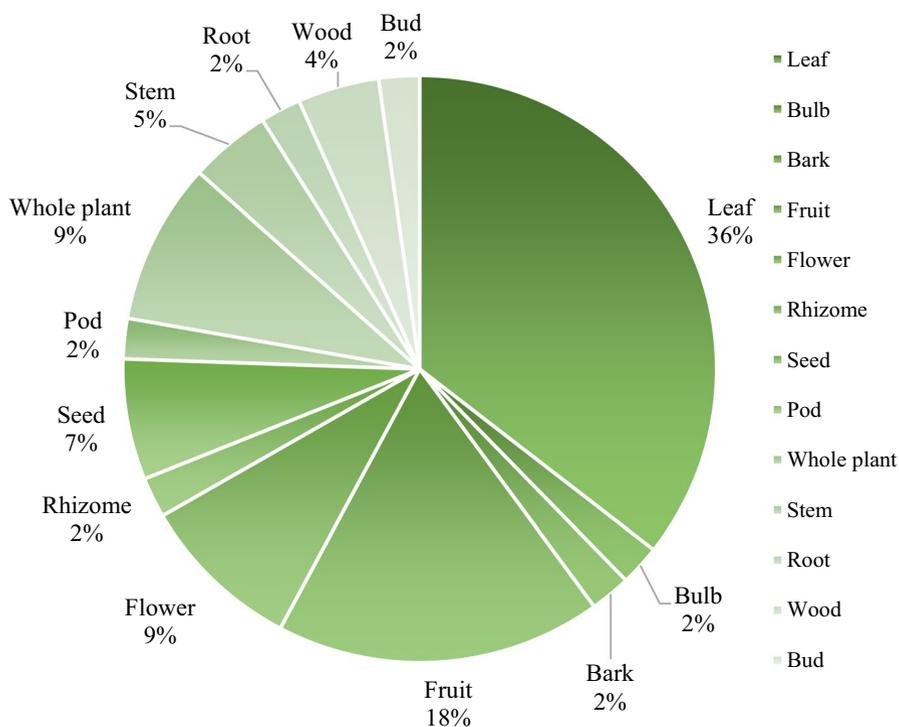


Fig. 2 The percentage pattern of plant parts used

Nevertheless, when compared to previous recorded literature on medicinal virtue of the recorded plants used in Hindu rituals, 32 out of the 33 documented plants (97.0%) do have some medicinal properties as reported in surveys or/and in vitro/ in vivo experiments. This suggests that although some Hindu priests possess vital information about the medicinal value of some plants, the use of the majority of medico-religious plants in prevention and treatment of illnesses is still unknown to the Hindu priests of Mauritius.

According to Table 3, the following plants have been poorly assayed in randomised clinical trials: *Aegle marmelos* (L.) Corr., *Cinnamomum verum* J. Presl., *Citrus × aurantifolia* (Christm.) Swingle, *Elettaria cardamomum* Maton., *Evolvulus alsinoides* Linn., *Ficus benghalensis* L., *Ficus religiosa* L., *Lawsonia inermis* L., *Musa acuminata* Colla., *Myristica fragrans* Houtt., *Phyllanthus emblica* L., *Quercus infectoria* Oliv., *Syzygium aromaticum* (L.) Merrill & Perry., and *Tagetes patula* L. On the other hand, few herb–drug interaction studies have been conducted on the plant species *Aegle marmelos* (L.) Corr., *Cinnamomum verum* J. Presl., *Citrus × aurantifolia* (Christm.) Swingle, *Evolvulus alsinoides* Linn., *Musa acuminata* Colla. Many of the above-mentioned plants are consumed by the local population on a daily basis as part of various culinary exercises. Consequently, it is important to study them more extensively to substantiate evidence regarding their safe use among humans. Patients should be informed of any possibility of toxicity as well as to

Table 3 Number of different studies conducted on plant species reported by informants

PSN	In vitro S	In vivo S	In silico S	RCT S	HDI S	PSN	In vitro S	In vivo S	In silico S	RCT S	HDI S
<i>Types of studies</i>											
1.	47*	28*	0*	2*	11*	11.	53*	29*	1*	1*	21*
	7**	1**	0**	0**	0**		3**	0**	0**	0**	0**
2.	2358*	1663*	82*	51*	539*	12.	19*	12*	0*	0*	6*
	181**	80**	4**	34**	6**		0**	1**	0**	0**	0**
3.	45*	35*	3*	4*	19*	13.	116*	89*	4*	1*	33*
	36**	11**	0**	1**	1**		2**	1**	0**	0**	0**
4.	24*	21*	0*	0*	14*	14.	179*	134*	6*	2*	41*
	1**	0**	0**	0**	0**		8**	4**	1**	0**	0**
5.	49*	34*	4*	0*	18*	15.	207*	141*	7*	5*	68*
	1**	0**	0**	0**	0**		15**	6**	0**	0**	0**
6.	476*	303*	25*	8*	84*	16.	992*	718*	38*	15*	198*
	34**	7**	3**	4**	0**		75**	34**	6**	3**	4**
7.	519*	382*	37*	24*	157*	17.	66*	37*	6*	0*	13*
	64**	28**	4**	31**	1**		2**	0**	0**	0**	0**
8.	2598*	2138*	113*	73*	701*	18.	135*	100*	3*	5*	41*
	131**	52**	6**	17**	4**		12**	6**	0**	0**	0**
9.	537*	359*	16*	11*	62*	19.	107*	72*	5*	2*	37*
	11**	2**	1**	4**	0**		75**	31**	2**	7**	3**
10.	961*	645*	33*	15*	148*	20.	315*	246*	13*	6*	105*
	18**	5**	0**	0**	1**		17**	9**	1**	0**	0**
21.	242*	161*	14*	5*	69*	28.	283*	196*	27*	5*	93*
	253**	188*	16**	16**	16**		202**	143**	49**	19**	19**
22.	287*	178*	11*	6*	115*	29.	22*	17*	1*	0*	8*
	255**	172**	15**	40**	50**		20**	16**	2**	0**	4**

Table 3 (continued)

PSN	In vitro S	In vivo S	In silico S	RCT S	HDI S	PSN	In vitro S	In vivo S	In silico S	RCT S	HDI S
23.	973*	667*	47*	22*	238*	30.	193*	102*	3*	0*	25*
	1127**	865**	78**	139**	108**		94**	50**	0**	6**	8**
24.	20*	10*	1*	0*	2*	31.	93*	70*	2*	2*	27*
	28**	21**	13**	0**	8**		78**	56**	5**	6**	12**
25.	17,376*	15,053*	688*	1356*	625*	32.	620*	445*	27*	24*	24*
	44**	41**	6**	2**	0**		740**	570**	67**	102**	94**
26.	472*	278*	38*	9*	55*	33.	2674*	1722*	292*	28*	278*
	758**	507**	393**	16**	25**		4585**	3420**	1667**	189**	131**
27.	223*	163*	9*	7*	52*						
	128**	101**	22**	15**	9**						

PSN plant species number as per Table 2, S studies, RCT randomised clinical trials, HDI herb–drug interaction

*Science Direct; **PubMed Central

prevent the risks of herb–drug interactions which could otherwise become an important public health threat especially among patients suffering from chronic diseases.

Many of the plants reported by informants are directly related to the worship and cultural rituals. For instance, it is said that the trifoliate bael leaf [*Aegle marmelos* (L.) Corr] and the three dark spot marks on the coconut fruit represent the three-eyed Lord Shiva. The bael leaves and coconut fruit are both used as offering to Lord Shiva when performing prayers. The dried stigmas of the flower of *Crocus sativus* L. (saffron) and mixture of *Santalum album* L. (sandalwood) paste with *Crocus sativus* L. were used in the “Mastak abhishek” ritual. “Mastak abhishek” is also known as the application of “tilak”. A paste is obtained by mixing saffron with sandalwood. It is then applied as a spot on the forehead of a God/Goddess idol as well as on the forehead of devotees. When applied on the forehead of a person, it is said to have a cooling effect on the head. *Cynodon dactylon* (L.) Pers. (Bermuda grass) is offered to please Lord Ganesha. *Cynodon dactylon* (L.) Pers. is said to be blessed by Lord Ganesha. Flowers of the plant, *Tagetes patula* L. (French marigold), are offered to Lord Ganesha on a *Piper betle* L. leaf. *Aegle marmelos* leaves are placed on the top of a “Shivling” representing Lord Shiva. It is believed that the bael leaves will cool down the poison effect in his throat. *Datura stramonium* L. and banana (*Musa acuminata* Colla.) fruits are offered with the belief that it will please Lord Shiva. *Ficus religiosa* L. (Peepal tree) situated in the garden of a Hindu temple in Mauritius is worshipped. Lord Shani is worshipped under the tree, and it is said that if praying Lord Shani for 8 consecutive Saturdays, this will remove bad influences in the person’s life. In “Hawan” ritual banana leaves are used as platter to conduct the ritual and the wood of “Hawan” *Santalum album* L. (sandalwood) used in the fire offering. It is said that the fume that emanates from the ritual purifies the air. *Ocimum tenuiflorum* L. (Holy Basil) plant is planted in the yard and is believed to ward evil. It is considered a sacred plant by the Hindus in Mauritius as it is said to be blessed by Lord Vishnu. It is also believed to bring prosperity in the life of the devotee. *Piper betle* L. (betel) leaf is used as platter to offer money to a “Shivling”. Uses of betel leaf also include the purification of water in a “kalash” pot and as offering to the elders.

Analysis of Indexes and Associated Literature Research

The plant with highest RFC index obtained was *Ocimum tenuiflorum* L. (RFC=0.79) followed by *Aegle marmelos* (L.) Corr. and *Santalum album* L. (RFC=0.50). Hence, it shows the importance of *Ocimum tenuiflorum* L. species in the Hindu community of Mauritius as it has been cited by many respondents. Nonetheless, Sharma et al. (2012) have documented that *Ocimum tenuiflorum* L. is the ninth plant with highest RFC index, in Assam, India. This signifies that the plant is not highly used among the Assam residents in India, compared to the Mauritian Hindu population.

Ocimum tenuiflorum, Holy basil, was found to have the highest UV (UV=0.71) followed by *Cynodon dactylon* (UV=0.50), *Piper betle* (UV=0.50), *Azadirachta indica* (UV=0.36), and *Curcuma longa* (UV=0.36).

Ocimum tenuiflorum L. (Tulasi/Holy Basil)—Lamiaceae: the *Tulasi* plant is considered as a wife of Lord Vishnu. The plant is worshipped during the time when a Brahmin is passing away where a small bit of root of the plant is placed inside the dying man's mouth and the leaves are placed on his eyes, face, ears, and chest. Using a twig of the plant, sacred water from river Ganges is sprinkled on the man while chanting "*Tulasi, Tulasi and Tulasi*" with the belief that the dying man will be assured to go to heaven (Gupta 1971). It is believed that the worship of the plant cleanses the devotee of his sins and brings him joy and prosperity. Holy basil is planted near the house to protect it from evil. It said that boiling the leaves and plucking its leaves on Tuesdays and Sundays are prohibited because those actions are a torture to the soul of the plant. The leaves dipped in sacred water are also believed to hinder the negative influence of an eclipse. Therefore, the leaves are placed inside vessels containing cooked foods and drinking water with the belief that it will keep them pure through the eclipse period (Gupta 1971). Holy basil has anti-inflammatory effects, antistress effects, antiarthritic properties, antipyretic properties, cures cough and cold, antimicrobial activity, analgesic activity, immunomodulatory activity, antiulcer activity, antidiabetic effect, hepatoprotective activity, chemoprotective activity, antihyperlipidemic activity, cardioprotective activity, memory-enhancing properties, antifertility effect, anticoagulant activity, and anticataract activity, (Joshi et al. 2011; Mahajan et al. 2013). The Hindu priests of Mauritius mentioned about the use of *Ocimum tenuiflorum* L. for upper tract respiratory disorders, kidney stones, and heart disorders. It may be suggested that the majority of Hindu priests are unaware of the immense contribution of *Ocimum tenuiflorum* L. for the wellness of the population.

Santalum album L. (Chandan/Heartwood)—Santalaceae: Paste and oil of *Santalum album* L. are of great significance in worship of Gods. It is considered that sandalwood applies perfume to the whole paradise with its fragrance. It is used to purify holy places (Sharma et al. 2014). The tree is used in the treatment of certain skin diseases, burning sensation, jaundice, intermittent fever, and weakness (Sharma et al. 2014).

Cynodon dactylon (L.) Pers. (Durva/Bermuda grass)—Poaceae: It is a sacred plant for the Hindus and is said that the three supreme gods, Brahma, Vishnu, and Shiva dwell in the three different parts of the plant (root, body, and tip, respectively). The plant is blessed by Lord Ganesha, and it is offered during his prayers in order to please him (Sahu et al. 2013). Bermuda grass has been reported to possess antibacterial activity (Marasini et al. 2015) and antidiabetic properties (Sahu et al. 2014).

Piper betle L. (Paan/Betel)—Piperaceae: Betel leaves are said to be blessed by the Goddess Laxmi (Goddess of wealth) and are used in all religious ceremonies (Sharma et al. 2014). The traditional use of the plant includes treatment of boils, constipation, abscesses, headache, conjunctivitis, itches, rheumatism, and the roots are known to be used for female contraception. It is also used in wound healing, as an aphrodisiac, erectile dysfunction in men, and treatment of warts. The leaf extract has antiprotozoan activity, antibacterial activity, and antifungal activity. Betel leaf chewing is known for increase in energetic sensibility, alertness, mental and physical functions (Guha 2006; Al-Adhroey et al. 2010; Bhattacharjee 2015).

Azadirachta indica A. Juss. (Neem/Indian Lilac)—Meliaceae: The tree is treated as sacred and is used in many religious Hindu ceremonies. The tree is also said to be blessed by Deity Kali. It is told that when nectar was being transported from Earth to the Gods residing in heaven, a few drops had fallen on the Neem tree. Hence, the Hindu people consume the leaves in the form of a paste on New Year occasions with the belief that it will keep them free from illnesses (Sahu et al. 2013). Neem is used for skin disorders, cholera, malaria, ulcers, and diarrhoea (Nunkoo and Mahomoodally 2012). It has antiviral, anti-inflammatory, antirheumatic, carminative and expectorant properties. It is also used to treat earache, syphilitic sores, boils, nasal problems, wound healing, and all blood impurities (Joshi et al. 2011).

Curcuma longa L. (Haldi/Turmeric)—Zingiberaceae: Turmeric is considered to be pure in Hindu religion and is practically used in numerous rituals. When turmeric paste is applied on the body of a person every day, it is believed that it will protect him from harms and his enemies. Also Goddess Laxmi is pleased with this action. During the “Raksha bandhan” ceremony, a little turmeric is added to a “rakhi”, which is a thread that is tied around the right wrist of a brother by his sister as protection against evils, for the brother’s long life and to consolidate the relationship between them. Turmeric has strong antiseptic properties, has fungicidal activity, is used for healings, is used as a laxative, is antirheumatic, helps in blood purification, is anti-inflammatory, is antidiabetic, is antivenomous, is anti-hepatotoxic, and has anticancer properties (Velayudhan et al. 2012).

With the highest UV, *Ocimum tenuiflorum* L. appears to hold the most significance in rituals, wellness, and medicinal value. However, some plants with UV less than 0.25, for instance, *Aegle marmelos* (L.) Corr. (UV = 0.21), *Punica granatum* L. (UV = 0.21), *Phyllanthus emblica* L. (UV = 0.14), and *Tinospora cordifolia* Miers. (UV = 0.07), were found by external published literature to contain interesting medicinal potential (Joy et al. 1998).

Punica granatum L. (Anaar/Pomegranate)—Lythraceae: It is used in Durga puja, where the fruit is offered to Goddess Durga to please her (Sarma and Devi 2015). The fruit is a source of calcium, vitamin C, fluoride, phosphate, and magnesium. The fruit has astringent and laxative effects, the bark, fruit, and root are antidiarrhoeal, the bark and root are anthelmintic, oil from the seeds has antibacterial activity, pericarp of the fruit has infertility effect, and the leaf, fruit, and flower have antifungal effects (Joy et al. 1998).

Phyllanthus emblica L. (Amla/Indian gooseberry)—Phyllanthaceae: The amla is worshipped by the women folk. It is known the Hindu community that one should worship the amla tree and a Brahmin couple should feed under it whereby all their sins are washed (Sahu et al. 2013). The plant is used to treat dysentery, inflammation, gonorrhoea, conjunctivitis, diarrhoea, jaundice, dyspepsia. The root is astringent, diuretic, carminative and helps in indigestion, anaemia, and jaundice (Joy et al. 1998).

Tinospora cordifolia Miers. (Giloy/Heart-leaved Moonseed)—Menispermaceae: The plant has stomachic effects, antidiabetic properties, diuretic effects, aphrodisiac effects, and anti-inflammatory properties (Joy et al. 1998).

Moreover, some trees recorded in this study are found to be deeply associated with Hindu religious belief and these findings are in agreement with studies like (Sapkota 2014) and (Sharma et al. 2014). Some of the plants are:

Aegle marmelos (L.) Corr. (Bael)—Rutaceae: The tree is considered sacred to Lord Shiva where the trifoliate leaves are said to represent his three eyes. It also signifies the three functions of Lord Shiva, i.e. creation, conservation, and annihilation. The leaves are mostly used during “Maha Shivratri”, a day termed as the great night of Lord Shiva where devotees worship the Lord in the form of a “Linga” and bath it using milk, honey, sugar, sacred water and placing the bael leaves on the top of the “Linga”. The foremost manifestation in phallic figure of Lord Shiva is also celebrated on that day (Gupta 1971). The fruits are used against diarrhoea and stomach ache. Juice of the ripe fruit is used as laxative (Sahu et al. 2013). Its leaf extract possesses antimicrobial effects, antipyretic properties, anti-inflammatory activity, analgesic effect, antifertility effect, antidiabetic activity, antioxidant activity, antiviral properties, radioprotective activity, and cardioprotective effects (Baliga et al. 2011).

Cocos nucifera L. (Coconut)—Arecaceae: The coconut fruit has an important role in all religious ceremonies of the Hindu community. It is commonly used as a symbolical way to invoke Gods and Goddesses by placing it in a “Kalash” pot containing water, adorned with mango leaves, flowers, vermilion, and sandal paste. It is believed that coconut has with time replaced the primitive practice of animal and human sacrifices which took place in India, particularly in the temple of Bhadrakali. Coconut was chosen as a symbolic human sacrifice because it closely resembles the human head (Gupta 1971). Some of its medicinal uses are in the treatment of malaria and fever (Nunkoo and Mahomoodally 2012). It is also used as an electrolyte and has antithrombotic effect, antiatherosclerotic effect, hypolipidemic effect, anticaries activity, antidermatophytic activity, antiviral effect, antifungal effect, anti-protozoal activity, anticancer effect, immunostimulatory effect, antidiabetic effect, and antibacterial activity (DebMandal and Mandal 2011).

Mangifera indica L. (Mango)—Anacardiaceae: The plant is considered to have great religious importance and to be the other form of the God Prajapati, known as the Lord of all creation. The wood of the tree is considered sacred and is used in the sacred fire sacrifice ceremony of “Homa” or “Hawan” and in funeral pyres (Gupta 1971). Its flowers are used as offering to Lord Shiva on Shivratri (Sahu et al. 2013). The leaves are tied and hanged on the doors of religious ceremonies and birth of a child (Ahirwar 2013). Extracts of the bark and fruits have antitumour activity, anti-inflammatory effects, antineoplastic effects, analgesic activity, and immunomodulatory properties. Leaves extract has antioxidant and anti-inflammatory activities (Mohan et al. 2013).

Ficus religiosa L. (Indian Fig tree)—Moraceae: The holiness of the plant is depicted in the *Mahabharata* and is considered as an eternal plant since its roots are above the branches. The tree is also associated with the three supreme gods: Brahma, Vishnu, and Shiva (Gupta 1971). Extract of the plant has antibacterial properties (Sahu et al. 2014), antidiabetic effects, nootropic effect, wound healing activity, anticonvulsant activity, anti-inflammatory effects, analgesic effects, antiviral properties, antimicrobial activities, antioxidant effects, antiasthmatic effect, and immunostimulant properties (Singh et al. 2011).

Ficus benghalensis L. (Indian Banyan)—Moraceae: The sacred tree is said to symbolise Lord Shiva. Because of its adventitious roots that hang down from the branches of the tree forming a circle, the Indian Banyan tree is believed to represent eternal life. The tree is also associated with Lord Brahma. During “Vad-Savitri” and the month of *Jaistha* (May–June) on Saturdays, women pray under the tree for the longevity of their husbands (Gupta 1971). The plant has antimutagenic activity and antioxidant properties (Satish et al. 2013).

Conclusion

This pioneering study reports a high number of plant species employed in Hindu rituals around the island which undeniably reflects the rich experience and knowledge of Hindu priests regarding their corresponding uses. There is no denying that these plants exhibit a vital role in the practice of the Hindu religion and culture. The myth around the divine blessings possessed by some plants has made their use in the well-being of man and as a cure for diseases very plausible. Nonetheless, despite known and utilised commonly for years by humanity, various plant species mentioned in this study have been poorly evaluated in randomised clinical trials and for any risks of herb–drug interactions. Hence, there are concerns surrounding the safe use of these plant species particularly among chronic disease patients. Definitely, medico-religious plants are a target for drug discovery given their time-tested use. Hence, well-known and widely utilised but poorly scientifically validated plant species mentioned in this study are recommended for further evaluation in randomised clinical trials as well as regarding their safety, toxicity, and herb–drug interaction inducing potential.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

Human and Animal Rights All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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