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Biocultural significance of plant species and conservation ethics in India

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Abstract: Virtually all the countries of the planet have rich traditions embedded within the ethics of protecting nature. A lot of earliest cultures tell us how communities lived in agreement with nature. With a local societal tradition of reverence for the elements that constitute ecosystems, drawing their sustenance from natural resources including protecting the environment that sustains them. Ayurvedic literature and especially *Dravya guna vidyanum* has suggested the uses of the natural plants for routine and serious ailments for the human being. Botanists and pharmacy industries are utilizing the same knowledge for the discovery of the new and novel medicines with help of the recent technological advances. Indian festivals are always associated with numerous plant taxa and this traditional knowledge is inherited by our forefathers in the society with or without any scientific explanation in society and culture. This study is an attempt to give the scientific explanation and validity of the uses of these plants as a whole or part of the plant. In the present communication 31 major festivals and main plants used have been given with the scientific understanding. Moreover, we have tried to give detailed scientific information related to festivals and plant taxa used, its purpose and relationship with customs and festivities as well with the major and minor disorders or diseases.

Keywords: Ayurveda, Culture, Festivals, Plants, Science, Traditional knowledge

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Introduction

Human beings are closely associated with plant kingdom since their origin. Plants play vital role for the welfare of mankind by providing food, shelter and medicine since the dawn of human civilization (Framarin, 2014). The therapeutic potentiality of plants was hidden within it for thousands of years and ancient people unveiled that hidden medicinal properties by making untiring attempts to use the plants of their surroundings for healing the diseases and physical sufferings. Gradually, humans gathered the knowledge about medicinal plants and its healing properties through trial and error (Abbink, 1995). The knowledge on medicinal

uses of plant resources still remains in oral form and it passes on from generation to generation in different ethnic communities worldwide. Uses of plants as medicine were scripted over 6000 years ago in the early writings in Egypt and China (Ali, 1991).

In India, the earliest mention of medicinal uses of plants is found in the ancient Sanskrit literature like Rigveda (4000-1500 BC) and in Atharvaveda (1500 BC). Charaka and Shushruta described the healing properties of numerous medicinal plants, respectively in their *Materia Medica* such as Charaka Samhita (1000BC) and Shushruta Samhita (800BC). Herbal medicines have been used in various systems of traditional

medicine all over the world in different forms such as tincture, tea, poultice, powder and other herbal formulations. According to the World Health Organization (WHO), over 3.5 billion people in the developing world rely mainly on plant-based traditional medicine for their primary health care (Balick and Cox, 1996; Pal and Shukla, 2003). More than 50,000 plant species are in use globally for healing of various diseases and health conditions (Govaerts, 2001; Schippmann *et al.*, 2005). About 8,500 angiospermic species are in use for therapeutic purposes in India (Jayakumar and Karuppusamy, 2015). In last few decades, interest in herbal medicine is gradually being increased throughout the World because of their very good efficacy in curing the diseases at least in case of some chronic and incurable diseases, easy availability, low cost and comparatively zero or minimum side effects (Kala, 2005). The faith on traditional medicine over modern allopathic drugs is gradually being increased among the people in the modern society due to hazardous side effects and very high costs of the prescribed modern drugs (Lucy and Edgar, 1999).

In ancient India, an elaborate ritual was laid for each sacred ceremony and plants/trees formed an important niche in the ceremony. Trees and sacred beliefs associated with them in Indian mythology in the form of folklores and transferred through generations after generations orally. Indian communities are performing *pujas* (religious rituals) on certain occasions on specific day of the specific month of Indian calendar. These may partially responsible for procuring the ritual objects necessary for them (Pohle, 1990). These could be daily *puja*, seasonal, monthly, annual, periodic and occasional. There is no religious ritual, which does not require plants and their products. An attempt has been made to return to the sources of traditional cultural value in order to record and document the treasure of knowledge that still exist with different caste and ethnic community. Recently, few ethno-botanical

studies on some caste or tribes have been conducted. However, these attempts have ignored detailed study on spiritual and cultural values of plants in heterogeneous society that gives higher social recognition on it. Various religious rituals and social activities are carried out to observe *dharma*. During the religious rituals and ceremonies, one or more deities are worshipped using actions, process and products prescribed by texts or priests or local tradition (Ingles 1994).

In south-east Asia including India, large number of herbs, shrubs and trees are traditionally worshiped and most of them are known for their uses in worship of several lords since time immemorial and have been given deep and sacred meanings throughout the ages. The trees and their products are part of Indian rituals and ceremonies and are associated with different trees and other plant taxa. In Indian culture trees are believed to have consciousness similar to humans so they can feel pain as well as happiness like us. Human beings, observing the growth and death of trees and the annual death and revival of their foliage, have often imagined them as powerful symbols of growth, death and rebirth. The description of the religious trees has also been given in the Bible and the Quran (Musselman, 2007; Evans, 2014). In India, amongst Hindu many plant species are related to religious functions, rituals and also in calibration of festivals. Festivals are an important field and have increased tremendously in the past decades and become one of the fastest event celebrated in any society. Getz (2010) defined festivals as themed public celebrations which were held regularly and annually in the same location or held periodically in different locations. Festivals provide unique opportunities for any local and visitors to participate during a distinct experience from lifestyle. Festival organizers at home or in a society, celebrate their culture and lifestyle for socio-religious purpose. This knowledge is perceived all over India as number

of rituals are common. Over and above, they share a variety of experiences with local society and even outside visitors. At the same time, festivals help to enhance and preserve local cultures, especially when festivals become local traditions after many years of celebration (Yolal *et al.*, 2009).

Most culturally important medicinal plants in the local society of Maharashtra proved to be species about which a lot of traditional knowledge has accumulated and been transmitted through direct experience over time. The Cultural significance has proved to be a good measure of the cultural importance of medicinal plants and possesses advantages over the other sociocultural importance. There is direct relationship in the community between the cultural importance of medicinal plants and the resource availability according to local perception (Gadgil, 2000).

In the present study we have tried to understand the relationship of some Maharashtrian culture, festivals, vratas, fasts and their association with the plant or plants as a whole or their parts. The historical perspectives and approach in protecting the biodiversity and the challenges faced in protecting biodiversity of India's societal culture have been analyzed. There are certain plants or plants which have the essential requirement on that specific day or festival due to direct relationship with that particular deity. At the same time, some plants are used in numerous festivities and societal gatherings also. This information might have the reference to Ayurveda but, its scientific knowledge may not be with every common man as well as such information will be useful to even scientific community (Gadgil, 1987).

Materials and Methods

Information of plant species used in a particular festival occasion, importance of the plants or its parts in traditional use, beliefs and benefits were collected through personal interview with some

elderly people, Brahmans or Pujari. The names of plants have been taken from various literary and scientific literatures such as Hooker (1872-97), Cook (1902) and Shah (1978). Valid citation of author of these plants has been checked from IPNI Website. Information about use of plants was also collected from different traditional texts and books. The information about common name, sociocultural importance, its utility and medicinal value has also been collected from different sources and presented in Table 1 (Sivarajan and Balalchandran, 1999; Deshpande *et al.*, 2002).

Results and Discussion

Nature has provided us the most abundant and useful natural resource as plants. Hence, the plants have the direct as well as indirect effects on us. Most of the prime necessities are taken care by the plants since time immortal such as food, clothing and shelter. Even the necessary requirement for the good health has been supplied by the plants. Each and every plant, present within the vicinity of the human settlement, has provided the necessary ecological niche and even been the source of the natural drug. Our ancestors have very good observation and collection of the plants which has such important medicinal and curative properties.

Indian civilization has so many myths, festivals, religious ceremonies and numerous scientific literatures. But, the biggest question was how to incorporate this scientific knowledge to the society. And, the answers for the above have given to us by interweaving the information into religious ceremonies and introducing various vratas by our forefathers. This valuable information is incorporated into the folklore and society to show the respect and protection of the plants. Over and above, due to enhancement in the environmental problems, over exploitation for the extraction of the drug, numerous developmental activities also join hands to destroy this natural wealth of

Table 1: Festivals and plants used along with the common usage and its medicinal value

S. No.	Festival	Common name/ Plant/ part used	Botanical Name and family	Associated Deity and Parts used	Scientific medicinal uses
1	Makar sakranti	Til / seed	<i>Sesamum indicum</i> L. Pedaliaceae	Lord Sun, Seeds,	<i>It is mildly laxative, emollient and demulcent. The seeds and fresh leaves may be used as a poultice. even antibacterial activity</i>
2	Mahashiv-ratri	Bel / leaves, fruit	<i>Aegle marmelos</i> Correa Rutaceae	Lord Shiva, Leaves and fruit	<i>Roots in Dasmula, it is astringent, cooling, carminative, laxative, restorative, febrifuge and stomachic and used in colitis, dysentery, diarrhea, flatulence and fever.</i>
3	Holi Rangpan-chami	Kadulimb/ stem, leaves Palash/ Flowers	<i>Azadirachta indica</i> Juss. Meliaceae <i>Butea monosperma</i> L. Fabaceae	Godess Durga and Lord Jagannatha; Leaves and lowers Flowers	<i>Bark is bitter, cooling, anthelmintic, antiperiodic and astringent. it is used in blood, eye and worms diseases; general debility, antidiabetic, leprosy skin disorders and insect poisons.</i>
4	Gudipadva/ Indian New year	Kadulimb/ stem, leaves	<i>Azadirachta indica</i> Juss. Meliaceae	Godess Durga and Lord Jagannatha; Leaves and flowers	<i>Bark is bitter, cooling, anthelmintic, antiperiodic and astringent.it is used in blood, eye and worms diseases; general debility, antidiabetic, leprosy skin disorders and insect poisons.</i>
5	Ramnavami	Ramphal/ furits	<i>Annona reticulata</i> L. Annonaceae	Lord Ram; Fruits	<i>The fruit posses high nutritional value with all essential vitamins and minerals as well as posses antioxidant, anti-cancer and anthelmintic activity</i>
6	Hanuman jayanti	Hanuman-phal / fruit , Rui / flowers	<i>Annona cherimola</i> Mill. Annonaceae <i>Calotropis procera</i> (Aiton) Aiton Asclepiadaceae	Lord Hanuman; Fruits Flower for pooja , Prayer	<i>It is used in inflammation, fever, cough, cold, diabetes, and cancer.; and it can be used as antiprotozoal, antisecretory, antibacterial, antihypercholesterolemic, antidepressant and anxiolytic activities.</i>
7	Somvati amavasya	Pimpal / whole plant Kadulimb/ stem, l	<i>Ficus religiosa</i> L. Moraceae <i>Azadirachta indica</i> Juss. Juss. Meliaceae	Sacred in Hindus, Jains and Bouddhs Whole plant for pooja, leaves for prayers	<i>Bark is bitter, cooling, anthelmintic, antiperiodic and astringent. It is used in blood, eye and worms diseases ; general debility, antidiabetic, leprosy skin disorders and insect poisons.</i>
8	Akshay tritiya / Akhatrij	Vala Roots Amba Fruit Chinch Fruit	<i>Vetivera zinzoides</i> (L.) Nash. Poaceae <i>Mangifera indica</i> L. Anacardiaceae <i>Tamarindus indica</i> L. Caesalpinaceae	For forefathers Roots for cooling agent, powder for skin cleansing, fruit offering Lord Indra, rain god	<i>Roots are coolant, oil is sedative- nervous irritations, afflictions, convulsions and emotional outbursts such as anger, anxiety, epileptic and hysteric attacks, restlessness, nervousness etc. benefits in insomnia. Mango roots and bark are astringent, acrid, refrigerant, styptic, antisyphilitic, vulnerary, antiemetic, antiinflammatory and constipating. Mango leaves are astringent, refrigerant styptic, vulnerary and constipating. useful in hiccup, hyperdipsia, burning , sensation, hemorrhages, haemoptysis, haemorrhoids, wounds, ulcers, diarrhea, dysentery, pharyngopathy, scorpion sting and stomachopathy.Fruits and pulps of tamarind is used as hypolipidemic, weight reducing, antimicrobial, hepatoprotective, anthelmintic, antioxidant, analgesic and anti-inflammatory</i>
9	Vad savitri	Vad / whole plant	<i>Ficus benghalensis</i> L. Moraceae	It is most sacred to Lord Shiva, Vishnu, Brahma, Kali, Lakshmi and Kubera Lord Yama; For pooja, roots and stem as a medicine	<i>Plant parts roots, bark and leaves are used to treat diarrhea, dysentery and piles, teeth disorders, rheumatism, skin disorders and antidiabetic</i>
10	Nirjala	Amba	<i>Mangifera</i>	Lord Vishnu;	<i>The roots and bark are astringent, acrid, refrigerant,</i>

	Ekadashi	Fruit	<i>indica</i> L. Anacardiaceae	Fruit –Offering	<i>styptic, anti syphilitic, vulnerary, antiemetic, anti inflammatory and constipating. Mango leaves are astringent, refrigerant styptic, vulnerary and constipating. They are useful in hiccup, hyperdipsia, burning sensation, hemorrhages, haemoptysis, haemorrhoids, wounds, ulcers, diarrhoea, dysentery, pharyngopathy, scorpion string and stomachopathy.</i>
11	Dev shayani Ekadashi	Kismis/ dried Fruits	<i>Vitis vinifera</i> L. Vitaceae	Lord Vitthal and all the Gods Offering Fruit	<i>it has antioxidant, antimicrobial, analgesic and anti-inflammatory property</i>
12	Phul kajali	Flowers	any plant Angiosperm Flowers	Offering to god and aesthetics Knowledge	<i>All flowers and leaves are used as an aesthetics and for beautification. This also gives the information and knowledge about the aroma-therapy.</i>
13	Mangala Gauri	Leaves and flowers	Any flowering and useful available Plants	Lord shiva; Offering and aesthetics, knowledge of common medicinal and non medicinal plants	<i>All flowers and leaves are used as an aesthetics. Information and knowledge about the aromatherapy. Mostly the Poisonous and non poisonous plant distinction criteria can be explained on the basis of vegetative and floral morphology</i>
14	Narali poornima	Naral/ Fruit	<i>Cocos nucifera</i> L. Arecaceae	Lord sea; fruit and eatable	<i>It can be used as Vitamins, minerals, amino acids and phytohormones are present in coconut water. Oil is an antibacterial, antiviral, antifungal, antiulcerous, anticancerous</i>
15	Putrada Ekadashi	Shingada	<i>Trapa bispinosa</i> L. Arecaceae	Lord Vishnu; Fruit, Eatable	<i>It is used in the problems of stomach, genitourinary system, liver, kidney, and spleen. It is bitter, antibacterial and antifungal; astringent, stomachic, diuretic, febrifuge, and antiseptic.</i>
16	Aja Ekadashi	Khajur	<i>Phoenix sylvestris</i> Roxb. Arecaceae	Lord Vishnu; Fruit Eatable	<i>It is suggested as antipyretic, cardiotonic, laxative, diuretic and antioxidant.</i>
17	Hartalika	Kevada	<i>Pandanus odoraticum</i> L. Pandanaaceae	Lord Shiva; Prayer and offering to God	<i>It can be used for treatment of headache, rheumatism, spasm, cold/flu, epilepsy, wounds, boils, scabies, leucoderma, ulcers, colic, hepatitis, smallpox, leprosy, syphilis, and cancer and as a cardiotonic, antioxidant, dysuric, aphrodisiac.</i>
18	Ganesh chaturthi	Durva	<i>Cynodon dactylon</i> Pers. Poaceae	Lord Ganapati Offering to god	<i>It can be used as antibacterial, antimicrobial, antiviral and wound healing properties. treat various ailments such as anasarca, cancer, convulsions, cough, cramps, diarrhoea, dropsy, epilepsy, headache, haemorrhage, hypertension, hysteria, measles, rubella etc.</i>
19	Rishi panchami	Bhat	<i>Oryza sativa</i> L. Poaceae	Lord ganapati and Rishis and Seers; Eatable organic food	<i>It can be used as antiinflammatory, antibacterial, to treat diarrhea and dysentery. Rice bran is used as an immunostimulant</i>
20	Gauri, Mahalaxmi	Aghada Kena Padval	<i>Achyranthus aspera</i> L. Amaranthaceae <i>Commelina</i> sp Commelinaceae <i>Trichosanthes Curcumineria</i> L. Cucurbitaceae	Godess Laxmi and Parvati Offering to god, digestive agent	<i>Plant is used as bitter, acrid, cardiotonic, astringent, carminative, diuretic, alleviative of cough and Vata and useful as an errhine. It can be used as diuretic, febrifugal and anti-inflammatory, anti-inflammatory, leprosy and as a laxative. It is used as an abortifacient, vermifuge, stomachic, refrigerant, purgative, malaria, laxative, hydragogue, hemagglutinant, emetic, cathartic, bronchitis and anthelmintics. in headache, alopecia, abdominal tumors, bilious, boils, acute colic, diarrhoea, haematuria and skin allergy and anti poisonous</i>
21	Anant Chaturdashi	Anant	<i>Gardenia jasminoides</i> J. Ellis Rubiaceae	Lord Ganapati and Anant Offering to almighty, Deodorant and	<i>It is used for antianxiety, urinary disorders, diabetes, Cholesterol, hypertension, antipyretic, menopause symptoms, anti-inflammatory, immunomodular, an antioxidant and rheumatoid arthritis</i>

				coolant	
22	Shradha paksha	Darbha, Kusha	<i>Desmostachya bipinnata</i> L. Poaceae	Forefathers of the family, Performing puja and offering To departed souls	<i>It is cooling, sweet, astringent, diuretic, dysuria, urinary Calculi, galactagogue, dysentery, diarrhea,</i>
23	Dussera	Shami Apata	<i>Prosopis spicegera</i> (L.) Druce and <i>P. chinensis</i> (Molina) Stuntz Mimosaceae <i>Bauhinia varigata</i> L. Caesalpinaceae	Lord Ram, Goddess Durga and Saraswati Performing puja and offering elderly people and friends	<i>It can be effective as anthelmintic, antioxidant, antipyretic, antiulcer, cytotoxicity effect, anti-giardial, amoebicidal, and antipustule activity</i> <i>Cooling, astringent, antihemetic, acrid and antiphlegmic, antiulcer, anti-inflammatory, leprosy and menstrual disorders</i>
24	Kojagiri poornima	Bhat	<i>Oryza sativa</i> L. Poaceae	Lord Moon Offering to almighty and eatable	<i>It is mentioned as Anti-inflammatory, antibacterial, to treat diarrhea and dysentery Rice bran as an immunostimulant</i>
25	Rama Ekadashi	Shami	<i>Prosopis spicegera</i> (L.) Druce and <i>P. chinensis</i> (Molina) Stuntz Mimosaceae	Lord Vishnu and Goddess Laxmi Performing puja	<i>It can be effective as anthelmintic, antioxidant, antipyretic, antiulcer, cytotoxicity effect, anti-giardial, Antimicrobial, amoebicidal, and antipustule</i>
26	Diwali Narak chaturdashi	Amaba Til	<i>Mangifera indica</i> L. Anacardiaceae <i>Sesamum indicum</i> L. Pedaliaceae	For decoration and auspicious	<i>Mango roots and bark are astringent, acrid, refrigerant, styptic, antisyphilitic, vulnerary, antiemetic, anti-inflammatory and constipating. Mango leaves are astringent, refrigerant styptic, vulnerary and constipating. useful in hiccup, hyperdipsia, burning sensation, hemorrhages, haemoptysis, haemorrhoids, wounds, ulcers, diarrhoea, dysentery, pharyngopathy, scorpion sting and stomachopathy. It is used as a mildly laxative, emollient and demulcent. The seeds and fresh leaves are used as a poultice. antibacterial</i>
27	Diwali Laxmipujan	Zendu	<i>Tagetes erecta</i> L. Asteraceae	Offering to goddess Laxmi and Lord Ganapati, decorations And aesthetics	<i>It is used as a hepatoprotective, insecticide, anti-oxidants and analgesic.</i>
28	Kartik poornima	Kapur	<i>Cinnamomum camphora</i> (L.) J. Presl Iridaceae	For prayers and during puja and cleaning the air	<i>The wood and leaves are analgesic, antispasmodic, odontalgic, rubefacient, and used as a stimulant. The essential oil is anthelmintic, antirheumatic, antispasmodic, cardiotonic, carminative, diaphoretic, sedative and tonic</i>
29	Tulasi vivah	Tulsi	<i>Ocimum sanctum</i> L. Lamiaceae	Lord Vishnu as Shaligram Offering to god and goddess, Prayer	<i>Aromatic, carminative, antipyretic, diaphoretic, expectorant, diarrhoea, Dysentery</i>
30	Champa shasthi	Champa	<i>Michelia champaka</i> L. <i>Magnolia chmpaka</i> (L.) Baill. ex Pierre Magnoliaceae	Offering and prayer	<i>Stem bark is used in the treatment of eye disorders, inflammation, antidote for scorpion and snake venoms, cough, as diuretic gonorrhoea and treatment of stomach ulcer</i>
31	All pujas	Supari	<i>Areca catechu</i> L. Arecaceae	Offering, ritual at home, and temple	<i>It is acting as a mild stimulant, digestive agent, diuretic, glaucoma, mental confusions, chronic urinary distress and pus formations.</i>

medicinal plants. There is an urgent need to reintroduce the forgotten knowledge along with the scientific validation and reasons (Gadgil and Rao, 1998).

In Indian culture, the plants are considered with due respect, worshiped and reverence for this purpose only. This was helpful to propagate the scientific knowledge at different strata of the society. By this way, they have given the importance to each and every plant. Furthermore, they have introduced the cultivation, protection and production of the important medicinal plants. Some most useful plants have been incorporated in the home garden also. According WHO 80% of the population in the developing countries depends on traditional medicines mostly derived from plants for their health care and depends on traditional medicines to treat various ailments (Kumar *et al.*, 1993). It is also well known fact that the indigenous people living in remote areas are still devoid of modern facilities (WHO, 2002).

Indigenous knowledge are often defined because the knowledge that an indigenous (local) community accumulates over generations of living during the particular environment (Ryser, 2011). Indigenous forestry knowledge systems largely encompass local technologies, innovations, know-how, skills, practices and beliefs uniting local people to conserve forest resources and their cultural values. These have developed over thousands of years of direct human contact with the environment (Armstrong *et al.*, 2006).

Traditional knowledge often refers to a more generalized expression of knowledge associating a people or peoples with 'time-honored' ideas and practices associated with an individual or family (Ryser, 2011). This knowledge is not limited to know-how, skills, innovations, practices, processes, learning and teaching, but also includes knowledge that is associated with biodiversity, traditional lifestyles and natural

resources (WIPO, 2012). *Ayurveda*, the way of life, the Indian science of medicine, probably had its origin in the healing practices of the Indus-valley people of the Harappan civilization (2700-1700 B.C.E). The conventional healing system of our culture was also inextricably connected with the traditional religious beliefs and including magical practices. Starting from the Indus Valley civilization to the present age, the place of trees in cultural and social life has been of immense importance in India. But, cultural knowledge is just as important as societal life. Briggs (2005) disputed the value of Local Knowledge Systems (LKS) which has been restricted to local issues and local people have alternatively been labelled as "guardians of the earth" or "conservationists". All over the world, LKS has been developed and sustained by indigenous and local communities, and are believed to represent an adaptive strategy to the environment in which these group of people live. By and large, few of these plants are always used not only on that occasion but, even on other routine days also. Their usage in day to day diet for some plants is also been suggested by the Siddha and Unani medicines. Now a day's naturopathy also suggests the use of raw products from different plants (Rastogi, 2012; Djordjevic, 2017).

The following plants are always available in and around the human settlement in India. Some for the plants are planted or these plants are protected for the cleaning the air in the surrounding area. According to the conventional knowledge we have gathered information from the available literature. On the basis of literature most of them are of medicinally important due to their phytochemical constituents. In some plants only flowers are offered to enhance the aesthetics and can be considered as aromatherapy.

Community benefit may be celebrations, enhancing identity and the feeling of community, promoting participation, recreation of the local culture by sharing the ideas. Cultural and

educational benefits may lists new experience to learn new activities, showcase new ideas, development of new cultural skills/talent, community friendship leading towards positive impact and achieve common community goal.

The plants and products of their parts are utilized for worshipping, mandap, toran, to present as a gift, decorative vases such as incense or flowers. All flowering plants may be used either as incense or as decorations for the house altar, those used in particular rituals or serving customarily as incense particularly flowers. It is now quite apparent that without plants and their products the religious rituals and cultural values during particular festivals and rituals are not completed. Moreover, not carrying out rituals and cultural values, life in a society is not completed. Hence, a significant number of plants and their products are essential to sustain life -system. The detailed investigation covering heterogeneous society with diverse cultural ceremonies, geographical variation will enhance knowledge and understanding of importance of plants and trees in Indian society. These plants have been suggested also due to their medicinal value and their knowledge to the home maker or the ladies of the family so they can use them in any emergency if erupted at home.

Conclusion

The religious group of tree-worship is as old as or older than civilization, in fact almost the first objects to be worshipped were trees. In these days, frequent reports are on emerging socio-environmental and health challenges, including climate change due to enhanced development that threatens the survival of natural forests and emergence of new diseases. The inherent nature of sociocultural knowledge has always been to cope with unpredictable environmental changes and to lessen the effects of this unpredictability on natural resources. The inherent nature of sociocultural knowledge has always been useful to cope with unpredictable

environmental changes and to lessen the effects on natural resources of our cultural knowledge which will be passed to next generation.

This is a glimpse into the multi-cultural world of festivals and rituals of India in general and Maharashtra in particular. Festivals take out the stress from or daily life and present a wonderful opportunity to socialize and celebrate the joys of life. By and large, humans and nature are not seen as separate from each other, but as mutually dependent and that would greatly benefit our contemporary approach to life to develop newer methods for the sustainable utilization of our planet's limited bio-resources. In view of the fact that knowledge is power, the use of sociocultural and religious knowledge can be a system for local empowerment and equal partnership in community. There are no reasons why not more socio-biologists should adopt this bottom up approach and design their research around local needs and challenges in close consultation with local communities.

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