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REVIEW ARTICLE

# Status of Plant Invasion in India as Divulged from Kalidasa's Sanskrit Scriptures

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## ABSTRACT

Biodiversity is the mainstay of mankind and crucial for ecosystem functions. Although so, it is not stable and changing pattern of biodiversity are discernible worldwide on account of biological or plant invasion. Plant species are invaded intentionally, naturally or accidentally. Before embarking upon any developmental activities in a region, we have to take a stock of scenario about the status of biodiversity. In this regard, the present author made a headway collecting evidences of plant invasion (bioinvasion) on Indian subcontinent. Kalidasa's ancient Sanskrit scripts *viz*., Abhigyanshakuntalam, Meghaduta, Raghuvansham and Kumarsambhavam have been assessed from the viewpoint of plant invasion in India, the results of this study are being presented in this communication. This account may aid in the history of bioinvasion in India in view of biodiversity management.

**Keywords:** Kalidasa's Sanskrit Scripts, Plant Invasion, India.

## INTRODUCTION

Kalidasa was a greatest poet (Kaviguru or Mahakavi) and classical Sanskrit writer and dramatist (play writer) of ancient India. The ancient literature indicates that he was a renowned court poet of a legendary King Vikramaditya who ruled region around Ujjain (Madhya Pradesh) in 1st century BCE. Kalidasa was his one of nine gems. He authored two epics (Mahakavyas) *viz*., Kumarsambhavam (birth of a Kartikeya) and Rughuvansa (dynasty of King Raghu), two minor poems (Khandavyas) *viz*., Ritusamharam having six cantos pertaining to six seasons on Indian landmass) and Meghadutam (cloud messenger), apart from three dramas (plays) *viz*., Abhigyanasakantulam (recognition of Sakuntala), Malavikagniitram (about Malavika and Agnimitra) and Vikramavasiyam (story of king Pururavas and celestial nymph Urvasi). His literary scripts are based on the Vedic literature, and the popular epics *viz*., Ramayana and Mahabharata. His works are thought to be masterpieces and occupy a significant place in the arena of Sanskrit literature, which are based on his keen observations about the nature, human nature and assessments of the then socioculture and biodiversity. He mentioned accurately plant-wealth and different plant parts with ample emphasis. Thus, the nature has been the most powerful force of inspirations to him. These literary conventions of Kalidasa in Sanskrit depicting plant diversity is being evaluated from viewpoint of plant invasion (bioinvasion) in this communication.

## METHODOLOGY ADAPTED

The ancient Sanskrit literary scriptures by Kalidasa *viz*; Abhigyanskakuntalam, Meghaduta, Raghuvansham and Kumarsambhavam are replete with many Sanskrit plant names. The present author analysed these sources authored or commented by Kale (2004, 2010, 2015); Nagargikar (1971); Dey (1957); Unni (2014a,b) and Ray (1968). The Sanskrit plant names are equated with Latin botanical name and assigned to their respective families. These alongwith their status regarding wild or cultivated and habit are provided in the Tables I-IV. The exotic status has been also deciphered by consulting relevant taxonomic literature mentioned against each plant species. These are discussed in the context of plant invasion in the ancient times in Indian territory.

## RESULTS AND DISCUSSION

Recognition about how current knowledge regarding plants and plant science has emerged from the mist is important for further development of plant or natural sciences. Development or genesis of any science is incomplete without the related history. Biological invasion of alien species is thought as the second worst threat after habitat destruction (*cf*. CBD, 2005). Biologist also consider it as form of 'biological pollution' responsible for global environmental change and one of the major causes of species extinction (*cf*. Patil, 2024). The present author worked on this line of research tapping evidences from ancient Sanskrit scripts (Patil, 2017, 2018, 2019a,b,c,d, 2020, 2021a,b,c,d,e,f). The present communication on the ancient Sanskrit epics, poems and plays by Kalidasa is in the same order.

Kalidasa's Sanskrit scriptures have been studied in past in various perspectives (*cf*. Debta, 2021a,b; Srivastava and Singh, 2020; Chandan, 1997; Sikarwar, 2018, 2024 etc.). Sikarwar (2018, 2024) made biodiversity studies from Kalidasa's scripts in general. The in-depth examinations of these ancient Sanskrit scripts by Kalidasa revealed exotic plant diversity of the then Indian landmass. The revelations of his Abhigyanshakuntalam are tabulated in The Table-I. Total 13 exotic angiospermic plant species are mentioned pertaining to 13 genera and 11 families, of which only two species belong to two genera and two families of the monocotyledons. The majority of them (11 species, 11 genera and 09 families) are dicotyledonous ones. They are represented by cultivated (08 species) and wild (05 species) taxa. Their habit categorization is thus: 06 trees, 03 shrubs, 02 climbers and herbs each. The results obtained from his Meghaduta are recorded in the Table-II. The plant taxa are analysed as: total 05 species belonging to 05 genera and families each. Only a single species is monocotyledons, whereas the rest others are dicotyledons. Kalidasa's Raghuvansham (Table-III) divulged total 06 exotic species pertaining to 06 genera and 04 families. Although their specific and generic share is equal (03 species each) of the dicotyledons and monocotyledons, the latter belong only to a single family. The total taxa shared habital categories as: 03 trees, 02 shrubs, and a single climber. Interestingly, all are found under cultivation. His Kumarsambhavam (Table-IV) revealed total 07 alien plant species belonging to 07 genera and families each. Of these, only 02 species pertain to 02 genera and families, each of them being monocotyledons. It is worth to note that they are trees (02 species), climbers (03 species), herbs and climbers (01 species each). Except one, all others (06) species are generally found as cultigens.

Total plant taxa in all these four Sanskrit scripts by Kalidasa belong to 19 species (14 dicotyledons, 05 monocotyledons); 19 genera (14 dicotyledons, 05 monocotyledons) and 13 angiospermic families (13 dicotyledons, 02 monocotyledons). The present study of these exotic taxa revealed various different biogeographical nativities such as: Africa (15), Asia (Excl. India) (11), Malasian Archipelago (04), Malaysia (04), America (03), Persian Gulf, Paleotropics, Australia and West Indies (02 each), Arab, China and Sino-Japanese (01 each). The figures in parenthesis denote number of species of the respective

region. Maximum exotic plant species invaded in the then India are from Africa and Asia. Malaysian species have a fair representation. However, other regions or countries contributed only few alien taxa.

It is further to be noted that these taxa are economically important ones, being sources of edible fruits, vegetables, millets, ornamentals, religious and masticatory ones, besides shade trees. These are being cultivated for the similar purposes even in modern time in our country (India). There are some taxa which run wild and many of them are invasive nature (Patil, 2021c). It is interesting to note that some of them have been appropriated for religious purposes e.g. *Calotropis procera*, *Cynodon dactylon*. Likewise, some exotic species are being also cultivated for religious purposes e.g. *Piper betle*, *Barleria cristata*, *Areca catechu* and *Hibiscus rosa-sinensis*.

## CONCLUSIONS

Investigations on ancient scripts inform not only native biodiversity but also reflect plant-invasion in those days. Apart from this, it is also possible knowing economy and sources of human sustenance of ancient people in the region. All such ancient scriptures are, therefore, desired to reveal indigenous as well as exotic biodiversity.

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## REFERENCES

**Almeida, M.R. (2001)** Flora of Maharashtra. (Rubiaceae to Ehretiaceae) Vol.3A. St.Xavier College, Orient Press, Mumbai, Maharashtra, India.

**Bailey L.H. (1949)** Manual of Cultivated Plants (Rev.Ed.) The Macmillan Co., New York, USA.

**Bhandari, M.M. (1978)** Flora of Indian Desert. Scientific Publishers, Jodhpur, India.

**CBD (Convention of Biological Diversity) (2005)** India's Third National Report. https://www.cbd.int/doc/world/in/in_nr_03_en.doc 15 July 2010.9.89.

**Chandan Rajan (Ed.) (1997)** Complete Workd of Kalidas. Vol.I: Poems. Sahitya Academy, Delhi, India (Repr.)

**Chandra Sekar (2012)** Invasive alien plants of Indian Himalayan region: Diversity and implication. American Journal of Plant Sciences 3:177-184.

**Chaphekar, S.B., Latto, C. & M.D. Karnik (2007)** Sen 'trees' of Mumbai. Centre for Extra-Mural Studies, University of Mumbai, Fort, Mumbai, Maharashtra. India-400032, India.

**Cooke, T. (1958)** The Flora of Presidency of Bombay Bot. Vol.I-III. Surv.India, Calcutta, India.

**Debnath, A. & B. Debnath (2017)** Diversity, invasion status and usages of alien plant species in North-Eastern Hilly State of Tripura: A Confluence of India-Barman Hotspot. American Journal of Plant Sciences 8:212-235.

**Debta Prahallad (2021a)** The Science of plants in Kalidasa's work. International Journal of Creative Research Thoughts 9(2):2020-2031.

**Debta Prahallad (2021b)** Types of other plants in Kalidasa's work. International Journal of Creative Research Thoughts 9(5):777-782.

**Dey, S.K. (Ed.) (1957)** The Meghduta of Kalidas. Sahitya Academy, Delhi, India.

**Gaikwad, S.P. & K.U. Garad (2015)** Flora of Solapur (Maharashtra). Laxmi Book Publications, Solapur, Maharashtra.

**Graf, A.B. (1980)** Exotica: Pictorial Cyclpedia of Exotic Plants from Tropical and Near-Tropic Regions. Roders Company INC, USA (10th Ed.).

**Hewson, H.J. & H.S.Thompson (Ed.)** (1993) Flora of Australia: Oceanic Islands-2. Vol.50. AGPS Press Publication, Australian Government Publishing Service, Canberra.

**Kale, M.R. (2004)** Kumarsambhava of Kalidasa (Sanakrit + English) Motilal Banarsidas Publishing House, New Delhi, India.

**Kale, M.R. (2010)** The Abhijnanasakuntulam of Kalidasa. Motilal Banarsidas Publishing House, New Delhi, India.

Kale, M.R. (2015) The Meghaduta of Kalidasa. Motilal Banarasidas Publishing House, New Delhi, India.

**Kaul, M.K. (1986)** Weed Flora of Kashmir Valley. Scientific Publishers, Jodhpur, India.

**Medakkar, S.S. & P.P. Sharma (2016)** Antiquity of some exotic plants in India. The South Asian Academic Research Chronicle III (6):6-14.

**Nandargikar, G.R. (1971)** The Raghuvamsa of Kalidasa (With the Commentary of Mallinatha). 4th Edition, Motilal Banarsidas Publishing House, New Delhi, India.

**Panda T., Mishra N., Pradhan B.K. & R.B. Mohanty (2018)** Expansive alien fora of Odisha, India. Journal of Agriculture and Environment for International Development 112(1):43-64.

**Patil, D. A. (2023)** Plant Invasion as gleaned from Parasar's Vrikshayurveda. In: Plant Invasions and Global Climate Change (Ed. Tripathi *et al.*) Springer. PP.99-110.

**Patil, D.A. (1990)** Exotic elements in the flora of Dhule district (Maharashtra). J.Econ.Tax.Bot. 14(3):721-724.

**Patil, D.A. (1995)** Exotic elements in the flora of Dhule district (Maharashtra)-II. Biojournal 7(1-2):1-8.

**Patil, D.A. (2003)** Flora of Dhule and Nandurbar Districts (Maharashtra), India. Bishen Singh Mahendra Pal Singh, Dehradun, India.

**Patil, D.A. (2017)** Alien plant species recorded in Vedic and Post-Vedic period of India, An assessment. Sch.Acad.J.Biosci. 5(17):812-819.

**Patil, D.A. (2018)** Some comments on exotic floral elements as hailed from epic Ramayana. Sch.Acad.J.Biosci. 6(2):146-150.

**Patil, D.A. (2019a)** Plant invasion in India as revealed from Tantrasarah. Journal of Emerging Technologies and Innovative Research. 6(3):16-21.

**Patil, D.A. (2019b)** Food Crops: Evolution, Diversity and Advances. Scientific Publishers, Jodhpur, India.

**Patil, D.A. (2019c)** Amarsimha's Amarkosa in the perspective of plant invasion in India and implications. International Journal of Agricultural Inventions 4(2):163-169.

**Patil, D.A. (2019d)** Exotic medicinal plants as gleaned from ancient Sanskrit literature. The Journal of Biodiversity (Photon) 119-573-590.

**Patil, D.A. (2020)** Unfolding of Yog Chintamani in the perspective of plant invasion in India. Plantae Scientia, July 2020; 03(04):48-55.

**Patil, D.A. (2021a)** An Investigation on Linga Purana in perspective plant invasion in India and plant science. International Journal of Agricultural Invention 6(1): 35-39.

**Patil, D.A. (2021b)** Kautilya's Arthashastra in the perspective of plant invasion in India. In: Ethnomedicinal Plants: Revival of Traditional Knowledge (Ed. Aparna Pareek). Agrobios Research: An Imprint of Agrobios (India), Jodhpur, India. pp.49-60.

**Patil, D.A. (2021c)** Panini's Astadhyayi in the eyes of plant invasion on Indian Subcontinent. Plantae Scientia 4(4&5) 236-242.

**Patil, D.A. (2021d)** Pali Tipitaka in the perspective of plant invasion in India. Plantae Scientia 4(4&5) 243-249.

**Patil, D.A. (2021e)** The epic Mahabharata: Socioculture and plant invasion in Indian subcontinent. International Journal of Botany Studies. 6(5):436-438.

**Patil, D.A. (2021f)** Plant Invasion in India. Lambert Academic Publishing, Beau Bassin, Mauritius.

**Patil, D.A. (2024)** Exotic Flora of Maharashtra State (Diversity and Nativity). Agrobios Research (Imprint of Agrobios, India), Jodhpur, India.

**Purseglove, J.W. (1968)** Tropical Crops-Dicotyledons. 2 Vols. Longmans, London, U.K.

**Ray, Saradaranjan (1908)** Kalidasa's Abhijnana-Sakuntulam (With an Original Commentary and Critical and Explanatory Notes) Nalandra Press, Cornwallis, Calcutta, India.

**Reddy, C. Sudhakar (2008)** Catalogue of Invasive Alien Flora of India. Forestry And Ecology Division, National Remote Sensing Agency, Hyderabad-500037, India.

**Shah, N.C. (2015)** Betel chewing in South and South East Asia: Part-II. The Scitech Journal 2(6):21-28.

**Shetty, B.V. & V. Singh (1987)** Flora of Rajasthan. Vol.I, Bot.Surv.India, Calcutta, India.

**Sikarwar, R.L.S. (2018)** Plants of Kalidasa's Abigyanshakuntalam. Ethnobotany. 30: 30:108-111.

**Sikarwar, R.L.S. (2024)** Plants of the Kalidasa's Meghaduta. J.Indian Bot. Soc. Doi:10.61289/jibs2024.10.107.

**Singh, N.P., Lakshminarsimhan, P., Karthikeyan, S. & P.V.Prasanna (2000a)** Flora of Maharashtra State: Dicotyledons. Vol.I. Bot.Surv.India, Calcutta, India.

**Singh, N.P., Vohra, J.N., Hajra, P.K. & D.K. Singh (Ed.) (2000b)** Flora of India. Vol.5. Olacaceae-Connaraceae. Bot.Surv. India, Calcutta, India.

**Singh, S.C. & G.N. Srivastava (2000)** Exotic medicinal plants of Lucknow district (U.P.) India. In: Ethnobotany And Medicinal Plants of Indian Subcontinent (Ed.) Maheshwari, J.K.). Scientific Publishers, Jodhpur, India. pp.223-235.

**Singh, V., Parmar, J. & P.R. Pandey (1991)** Flora of Rajasthan. Vol.II. Bot. Surv. India, Calcutta, India.

**Srivastava, R. & S.N. Singh (2020)** A canvas of perennial beauty of nature: An ecocritical study of the works of Kalidas. International Journal of Creative Research Thoughts 8(5):2857-2860.

**Unni, M.P. (Ed.) (2014a)** Meghadutam. New Bhartiya Book Corporation, Delhi (Repr.)

**Unni, M.P. (Ed.) (2014b)** Ritusamharam. New Bhartiya Book Corporation, Delhi (Repr.)

**Wagh, V.V. & Jain, A.K. (2015)** Invasive of alien flora of Jhabua district, Madhya Pradesh, India, International Journal of Biodiversity and Conservation. 7(4):227-237.

**Yadav, S.R. & M.M.Sardesai (2002)** Flora of Kolhapur District. Shivaji University, Kolhpur, Maharashtra, India.

**Table-I: Exotic Plants Ini Kalidasa's Abhigyanshakuntalam**

| Sr. No. (1) | Sanskrit Plant Name (2) | Chapter & Shlok No. (3) | Botanical Name & Family (4) | Cultivated (C)/ Wild (W) (5) | Habit (6) | Nativity & Reference (7) |
|---|---|---|---|---|---|---|
| 1. | Shirish | C1:4, 28<br>C4:18 | *Albizia lebbeck* (L.) Benth.<br>Mimosaceae | C | Tree | (i) Pantropical Africa & Tropical Asia: Bhandari, 1978.<br>(ii) North Australia & Tropical Asia: 2017 |
| 2. | Ingudi | C1:14<br>C2:11<br>C4:14 | *Balanites aegyptiaca* (L.) Delile<br>Balanitaceae | W | Tree | Africa & Arab: Medakkar & Sharma, 2016. |
| 3. | Vanajustana (Tagar) | C1:21<br>C4:12, 13 | *Tabernaemontana divaricata* (L.) R.Br.ex Roem & Schult.<br>Apocynaceae | C | Shrub | (i) Tropical Asia: Singh *et al.*, 1991.<br>(ii) South-East Asia: Almeida, 2001. |
| 4. | Arka | C2:8 | *Calotropis procera* (Aiton) W.T. Aiton<br>Asclepiadaceae | W | Shrub | Tropical Africa: Reddy, 2008; Chandra Sekar, 2012. |
| 5. | Pinda-Kharjura, Kharjura | C2:9 | *Phoenix dactylifera* L.<br>Arecaceae | C | Tree | (i) Persian Gulf: Patil, 2019.<br>(ii) Africa: Bailey, 1949. |
| 6. | Tintini | C2:9 | *Tamarindus indica* L.<br>Caesalpiniaceae | C | Tree | (i) Tropical America: Patil, 1990; Shetty & Singh, 1987 |
| 7. | Durva | C4:5 | *Cynodon dactylon* (L.) Pers.<br>Poaceae | W | Herb | Tropical Africa: Debnath & Debnath, 2017; Wagh & Jain, 2015. |
| 8. | Saba | C:14 | *Echinochloa crus-galli* (L.) P.Beauv.<br>Poaceae | W | Herb | (i) Tropical South America: Debnath & Debnath, 2017.<br>(ii) South America: Panda *et al.*, 2018.<br>(iii) Asia (Excl. India): Kaul, 1986. |
| 9. | Pan (Tambul) | C6:2 | *Piper betle* L.<br>Piperaceae | C | Climber | (i) Malaysian Archipelago: Shah, 2015.<br>(ii) Bali & east Indies: Gruf, 1980<br>(iii) Malaysia: Hewson & Thompson, 1993. |
| 10. | Kurbak | C6:4 | *Barleria cristata* L.<br>Acanthaceae | C | Shrub | Paleotropics: Singh & Srivastava, 2000. |
| 11. | Mandar | C7:2, 11 | *Erythrina variegata* L.<br>Papilionaceae | C | Tree | Malaysia: Medakkar & Sharma, 2016. |
| 12. | Kalpvriksh | C7:5, 12 | *Adansonia digitata* L.<br>Bombacaceae | C | Tree | (i) Tropical Africa: Patil, 1995; Yadav & Sardesai, 2002.<br>(ii) Africa: Gaikwad & Garad, 2015. |
| 13. | Aparajita | C7:21 | *Clitoria ternatea* L.<br>Papilionacea | W | Climber | Tropical America: Purseglove, 1968. |

**Table-II: Exotic Plant Species In Kalidasa's Meghaduta**

| Sr. No. (1) | Sanskrit Plant Name (2) | Shlok No. (3) | Botanical Name & Family (4) | Cultivated (C)/ Wild (W) (5) | Habit (6) | Nativity & Reference (7) |
|---|---|---|---|---|---|---|
| **1.** | Tal | Purv Megh 35 | *Borassus flabellifer* L. Arecaceae | C | Tree | Tropical Africa: Reddy, 2008; Cooke, 1958; Chandra Sekar, 2012. |
| **2.** | Kalp-drum | Purv Megh 66; Uttar Megh 5,6,11 | *Adansonia digitata* L.f. Bombaceae | C | Tree | (i) Tropical Africa: Patil, 1995, 2003; Bailey, 1949.<br>(ii) Africa: Gaikwad & Garad, 2015. |
| **3.** | Kurbak | Uttar Megh 2,18 | *Barleria cristata* L. Acanthaceae | C | Shrub | Paleotropical: Singh & Srivastava, 2000. |
| **4.** | Shirish | Uttar Megh 2 | *Albizia lebbeck* (L.) Benth. Mimosaceae | C | Tree | (i) Pantropical Africa & Tropical Asia: Bhandari, 1978.<br>(ii) North Australia & Tropical Asia: Patil, 2017a. |
| **5.** | Bimb | Uttar Megh 21 | *Coccinia grandis* (L.) Voight Cucurbitaceae | C, W | Climber | Africa: Medakkar & Sharma, 2016. |

**Table-III: Exotic Plant Species In Kalidasa's Raghuvansham**

| Sr. No. (1) | Sanskrit Plant Name (2) | Botanical Name & Family (3) | Cultivated (C)/ Wild (W) (4) | Habit (5) | Nativity & Reference (6) |
|---|---|---|---|---|---|
| **1.** | Tal (Tad) | *Borassus flabellifer* L. Arecaceae | C | Tree | Tropical Africa: Reddy, 2008; Cooke, 1958; Chandra Sekar, 2012. |
| **2.** | Pooga | *Areca catechu L.* Arecaceae | C | Tree | (i) Tropical Asia: Gaikwad & Garad, 2015.<br>(ii) Malaysia: Chaphekar *et al.*, 2007.<br>(iii) Malaysian Archipelago: Shah, 2015 |
| **3.** | Kharjura | *Phoenix dactylifera L.* Arecaceae | C | Tree | (i) Persian Gulf: Patil, 2019<br>(ii) Africa: Bailey, 1949. |
| **4.** | Draksh | *Vitis vinifera* L. Vitaceae | C | Climber | (i) South-East Europe to West Indies: Singh *et al.*, 2000a.<br>(ii) West Indies; Gaikwad & Garad, 2015.<br>(iii) West Indies: Singh *et al.*, 2001. |
| **5.** | Japa | *Hibiscus rosasinensis* L. Malvaceae | C | Shrub | (i) China: Patil, 1995, 2003.<br>(ii) Sino-Japanese: Singh & Srivastava, 2000. |
| **6.** | Mallika | *Jasminum sambac* (L.) Ait. Oleaceae | C | Shrub | Tropical Asia: John, 1891; Patil, 2021a. |

**Table-IV: Exotic Plant Species In Kalidasa's Kumarsambhavam**

| Sr. No. (1) | Sanskrit Plant Name (2) | Botanical Name & Family (3) | Cultivated (C)/ Wild (W) (4) | Habit (5) | Nativity & Reference (6) |
|---|---|---|---|---|---|
| **1.** | Bimblata | *Coccinia grandis* (L.) Voight Cucurbitaceae | C,W | Climber | Africa: Medakkar & Sharma, 2016. |
| **2.** | Tambuli-lata | *Piper betle* L. Piperaceae | C | Climber | (i) Malaysian Archipelago: Shah, 2015. (ii) Bali & East Indies: Graf, 1980. (iii) Malaysia: Hewson & Thompson, 1993. |
| **3.** | Mallika | *Jasmanum samba* (L.) Ait. Oleaceae | C | Shrub | Tropical Asia: John, 1891; Patil, 2021a. |
| **4.** | Poosa | *Areca catechu L.* Arecaceae | C | Tree | (i) Tropical Asia: Gaikwad & Garad, 2015. (ii) Malaysia: Chaphekar *et al.*, 2007. (iii) Malaysian Arshipalago: Shah, 2015. |
| **5.** | Draksh | *Vitis vinifera* L. Vitaceae | C | Climber | (i) South-East Europe to West Indies: Singh *et al.*, 2000a. (ii) West Indies: Gaikwad & Garad, 2015. (iii) West Asia: Singh *et al.*, 2000b. |
| **6.** | Shirish | *Albizia lebbeck* (L.) Benth. Mimosaceae | C | Tree | (i) Pantropical Africa & Tropical Asia: Bhandari, 1978. (ii) North Australia & Tropical Asia: Patil, 2017. |
| **7.** | Durva | *Cynodon dactylon* (L.) Pers. Poaceae | W | Herb | Tropical Africa: Debnath & Debnath, 2017; Wagh & Jain, 2015. |