



Gleanings of Dhanvantari Nighantu In the Eyes of Bioinvasion In India

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Abstract:

Danvantari Nighandu, a 10th century lexicon contains many useful Materia Medica. The present author focused the plant species in it from the viewpoint bioinvasion in the erstwhile India. A total of 112 exotic plant species are gleaned which belong to 96 genera and 49 angiospermic families. The dicotyledons have a major role in bioinvasion in India (94 species, 85 genera and 44 families). The monocotyledons, however, have lesser share (18 species, 11 genera and 05 families). They are both *viz.*, cultigens and wild ones. As many as 60 species are under cultivation even in modern period in India. Obviously, they are introduced intentionally. The remaining wild floral elements form an integral segment of Indian biodiversity. The herbaceous taxa played a major role in invading Indian territory. The fund of data so accrued will be of use during extension of measures to manage and conserve biodiversity in India.

Key Words: Dhanvantari Nighantu, Exotic Plants, Bioinvasion, India.

Introduction:

The original name of Dhanvantari Nighantu is 'Dryavali Samucchaya'. Mahendra Bhogika is said to be the author of this lexicon. He is a son of Krishna Bhogika of Sthaneshwara (present-day Thane in Maharashtra State). Ksheeraswami, the commentator of the Amarsimha's 'Amarkosa' mentioned this lexicon, who is dated 11th century AD. Based on this, Dhanvantari Nighantu is thought written in 10th century AD. This lexicon starts with salutation to Lord Dhanvantari. It contains seven 'Vargas' (Groups). Each group name is coined by an important plant material and so referred. It contains total 527 drugs. Initially, it contained only the synonyms of the drugs. The properties of drugs were added in it. It is thus a compilation containing 410 medicinal plants, besides materials of mineral and animal origin.

Methodology:

The present author carefully examined Sanskrit plant names in each group of materials mentioned in 'Dhanvantari Nighantu' authored by Sharma (2002) and Singh (2008). The plant names are equated with the recent scientific (botanical) names and assigned to their respective families of plants. The data regarding status (wild or cultivated) and habit of each plant species is recorded. Nativity of each of them is inferred based on the relevant taxonomic literature mentioned against them in the Table-I. The information so obtained is interpreted in view of bioinvasion (plant invasion) in India.

Results & Discussion:

Ayurvedic Nighantus are informative lexicons regarding classification, morphological description, usage, properties, effects, etc. of medicinal plant species contained in them. They have endeavoured to solve controversies of synonymy of Materia Medica and made a headway to rational scientific information and treatments. Dhanvantari Nighantu is one such important lexicon in Ayurvedic literature. It is composed during 10th century and thus contains ancient data of useful plant species. It is studied from healthcare point of view, however, the plant species indicative of other aspects of sciences have yet remained standstill. The present author being interested in bioinvasion in India, tendered efforts to know exotic plant species mentioned in it to arrive at some concrete information and facts.

This lexicon *viz.*, Dhanvantari Nighantu (10th century AD) overall contains 410 plants of medicinal significance, apart from drugs obtainable from minerals and animals. Total 527 drugs sources are mentioned in it. The present author attempted to analyse alien status of these plant-based medicinal sources. As many 112 exotic plant species pertaining to 96 genera and 49 families of angiosperms are ascertained. Of these, maximum taxa appeared from the dicotyledons (94 species, 85 genera and 44 families). Nevertheless, the monocotyledons shared relatively lesser contribution (18 species, 11 genera and 05 families). It is interestingly to note that out of 112 plant species, 60 species are generally found under cultivation. They also constitute bioresources for vegetable, oil-yielders, spices and condiments, edible fruits, salads, cereals, ornamentals and as

shade or roadside trees. These thus enriched economy of the Indian people, apart from healthcare. Total 49 plant species are running wild as an integral part of Indian biodiversity. A few species (03) are both either wild or under cultivation. Their habital categorization is thus: trees (24), shrubs (10), climbers (11) and herbs (67). The figures in parenthesis denote the number of species. Obviously, the herbaceous floral element are predominant as compared to other habital groups. However, they are useful seasonally. The arborescent taxa *viz.*, those of trees and shrubs are perennial bioresources and as such available nearly throughout a year to their users.

The total 112 plant species are also studied critically divulging their alien status. Their geographical affiliations *vis-à-vis* nativity revealed that almost all corners of the Old and New Worlds involved bioinvasion in India. The nativities recorded are: America (32), Africa (31), Asia (Excl. India) (29), Europe (24) and Australia (03). Nearly all continents have shared in bioinvasion. Apart from these, many countries, islands, mountains or specific geographical regions also contributed. These are: Mediterranean region (12), China (11), Persia and Japan (04 each), Afghanistan (03), Paleotropical (03), Brazil, Persian Gulf, Afro-Asian, Malaysia, West Indies and tropics and subtropics of both hemispheres (02 each). Others areas such as Myanmar, East Indies, Malaya, Arabia, Turkestan, Asia Minor, Java, Siberia, Egypt, Eurasia, Fertile Crescent, Argentina, New Guinea, Indomalaya, Philippines, Middle East, Mexico, Mongolia, Tropics, Iran, Pakistan, Baluchistan, England, Ireland, Taiwan, Moluccas, Indonesian and Malesian Archipelago, etc. shared a single plant species each. The distant American continent also shared fairly in bioinvasion in Indian territory.

The exotic taxa, if invasive, cause loss of biodiversity including species extinction, changes in hydrology and ecosystem functioning. They are responsible thus for a serious hindrance to conservation and sustainable use of biodiversity. They also exert undesired impacts on services and goods. Bioinvasion operate at various levels. It has thus become necessary to have a stock of situation about about exotic taxa in region or nation. The present inventory is, therefore, thought useful while extending control measure on plant invasion in India.

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Table-I: Exotic Plant Species In Dhanvantari Nighantu

Sr. No. (1)	Sanskrit Plant Name (2)	Botanical Name & Family (3)	Cultivated (C)/ Wild (W) (4)	Habit (5)	Nativity & Reference (6)
1.	Manjistha	<i>Rubia cordifolia</i> Linn. Rubiaceae	W	Climber	Asia (Excl. India) & Africa: Kaul, 1986l; Jaryan <i>et al.</i> , 2012.
2.	Mahanimba	<i>Melia azedarach</i> Linn. Meliaceae	C	Tree	(i) Myanmar: Patil, 2003; Richardson & Rejmanek, 2011. (ii) Burma: Kshirsagar & Patil, 2008.
3.	Musta	<i>Cyperus rotundus</i> L. Cyperaceae	W	Herb	(i) Tropical Africa: Debnath & Debnath, 2017. (ii) Europe: Kaul, 1986; Panda <i>et al.</i> , 2018.
4.	Parpata	<i>Fumaria indica</i> Purgsley (Hausskin) Fumariaceae	W	Herb	Asia (Excl. India): Jaryan <i>et al.</i> , 2012.
5.	Patha	<i>Cissampelos pareira</i> Linn. Menispermaceae	W	Climber	South America: Rajagopal & Panigrahi, 1965; Panda <i>et al.</i> , 2018.
6.	Katrana	<i>Cymbopogon martini</i> (Roxb.) Wat. Poaceae	W	Herb	(i) Afrio-Asian: Naik, 1998. (ii) Africa: Yadav & Sardesai, 2002.
7.	Brihati	<i>Solanum anguivi</i> Lam. (Syn.S. indicum Linn.) Solanaceae	W	Shrub	Africa: Pullaiah <i>et al.</i> , 2001.

Sr. No. (1)	Sanskrit Plant Name (2)	Botanical Name & Family (3)	Cultivated (C)/ Wild (W) (4)	Habit (5)	Nativity & Reference (6)
8.	Kantakari Kasaghni	<i>Solanum virginianum</i> L. (Syn.S.xanthocarpum Schrad. & Wendl.) Solanaceae	W	Herb	Paleotropical: Singh & Srivastava, 2000.
9.	Vrintaki	<i>Solanum melongena</i> L. Solanaceae	C	Shrub	(i) East Indies: Singh <i>et al.</i> , 2001. (ii) America: Gaikwad & Garad, 2015.
10.	Gokshura	<i>Tribulus terrestris</i> Linn. Zygophyllaceae	W	Herb	(i) Tropical America: Reddy, 2008; Chandra Sekar, 2012. (ii) Africa & Asia (Excl. India): Kaul, 1986.
11.	Kashmarya	<i>Gmelina arborea</i> Linn. Verbenaceae	C	Tree	Malaya: Medakkar & Sharma, 2016a.
12.	Vijaya	<i>Cannabis sativa</i> Linn. Cannabinaceae	W	Herb	(i) Central Asia: Chandra Sekar, 2012. (ii) Caspian Sea Region & Causasus Mountains: Watt, 1908.
13.	Mashaparni	<i>Teramnus labialis</i> (L.f.) Spreng. Papilionaceae	W	Herb	Pantropical: Singh & Srivastava, 2000.
14.	Yasthimadhu, Madhuyasthi	<i>Glycyrrhiza glabra</i> Linn. Papilionaceae	W	Shrub	Arabia, Persian Gulf, Afghanistan, Turkistan, Asia Minor & Siberia: Rajiv Kamal, 1988.
15.	Shitivara	<i>Celosia argentea</i> Linn. Amaranthaceae	W	Herb	(i) Tropical Africa: Reddy, 2008; Chandra Sekar, 2012. (ii) South America: Singh & Inam, 2015.
16.	Shravani	<i>Sphaeranthus senegalensis</i> DC. (Syn.S.indicus Linn.) Asteraceae	W	Herb	Africa: Kshirsagar, 2005.
17.	Katukalambini, Brihatpali	<i>Lagenaria siceraria</i> (Mol.) Standl. (Syn.L.vulgaris Ser.) Cucurbitaceae	C	Climber	Africa: Singh & Nigam, 2017; Patil, 2019b.

Sr. No. (1)	Sanskrit Plant Name (2)	Botanical Name & Family (3)	Cultivated (C)/ Wild (W) (4)	Habit (5)	Nativity & Reference (6)
18.	Kushmandika	<i>Benincasa hispida</i> (Thunb.) Cogn. (Syn.B.cerifera Savi) Cucurbitaceae	C	Climber	(i) Java: Patil, 1995, 2003. (ii) Japan & Java: De Candolle, 1959.
19.	Dhamargava	<i>Luffa cylindrica</i> (L.) M.J.Roem. (Syn.L.aegyptiaca Mill. ex Hook. f.) Cucurbitaceae	C	Climber	Egypt: John, 1891.
20.	Koshataki	<i>Luffa acutangula</i> (Linn.) Roxb. Cucurbitaceae	C	Climber	Tropical Asia: John, 1891.
21.	Kovidara	<i>Bauhinia variegata</i> L. Caesalpiniaceae	C	Tree	China: Debnath & Debnath, 2017.
22.	Avartaki	<i>Cassia auriculata</i> Linn. Caesalpiniaceae	W	Shrub	Tropical America: Charan & Sinigh, 2018.
23.	Bimbi	<i>Coccinia grandis</i> (L.) Voight. (Syn.C. indica W.& A.) Cucurbitaceae	W,C	Climber	Africa: Medakkar & Sharma, 2016b.
24.	Prachinamalaka	<i>Flacourtia jangomas</i> (Lour.) Raeusch. Flacourtiaceae	C	Tree	Tropical Asia: Martin <i>et al.</i> , 1987.
25.	Aragwadha	<i>Cassia fistula</i> Linn. Caesalpiniaceae	C	Tree	(i) North America: Debnath & Debnath, 2017. (ii) Tropical Asia: Mukhopadhyay & Chakraverty, 2008.
26.	Snuhi	<i>Euphorbia ligularia</i> Roxb. (Syn.E.neriifolia Linn.) Euphorbiaceae	W	Shrub	Africa: Naik, 1998.
27.	Indravaruni	<i>Citrullus colacynthus</i> (L.) Schrad. Cucurbitaceae	W	Climber	West Africa: Sainkhedia, 2016.
28.	Apamarga	<i>Achyranthes aspera</i> Linn. Amaranthaceae	W	Herb	(i) Tropics: Medakkar & Sharma, 2016b. (ii) South-East Africa or Africa: Singh <i>et al.</i> , 2015.

Sr. No. (1)	Sanskrit Plant Name (2)	Botanical Name & Family (3)	Cultivated (C)/ Wild (W) (4)	Habit (5)	Nativity & Reference (6)
29.	Punarnava	<i>Trianthema portulacastrum</i> Linn. Aizoaceae	W	Herb	Tropical America: Quereshi <i>et al.</i> , 2014.
30.	Kroora	<i>Boerhavia repens</i> var. <i>diffusa</i> (L.) Hook.f. Nyctaginaceae	W	Herb	(i) South Africa: Struwig & Seibert, 2013. (ii) Tropical Africa: Panda <i>et al.</i> , 2018.
31.	Bale	<i>Sida cordifolia</i> Linn. Malvaceae	W	Herb	Tropical & Subtropical Regions & Both Hemispheres: Bhandari, 1978.
32.	Mahabala	<i>Sida rhombifolia</i> Linn. Malvaceae	W	Herb	America: Singh & Das, 2015; Singh <i>et al.</i> , 2015.
33.	Atibala	<i>Abutilon indicum</i> (L.) Sweet Malvaceae	W	Herb	Africa: Thakur & Ambrish, 2023.
34.	Prasarani	<i>Sida cordata</i> (Burm. f.) Borss. (Syn.S.veronicaefolia Lam.) Malvaceae	W	Herb	(i) Asia (Excl. India): Sheikh & Dixit, 2017. (ii) South America: Naqshi <i>et al.</i> , 1988.
35.	Eranda	<i>Ricinus communis</i> Linn. Euphorbiaceae	C	Tree	(i) Tropical Africa: Yadav & Sardesai, 2022; Lesley, 2020. (ii) Africa: Purseglove, 1968. (iii) North-East Tropical Africa: Matthew, 1991.
36.	Shatapushpa	<i>Anethum graveolens</i> L. [Syn.Peucedum graveolens (Linn.) Hiern.] Apiaceae	C	Herb	Europe: Patil, 2003; Yadav & Sardesai, 2003; Gaikwad & Garad, 2015; Stewart, 1972.
37.	Mishreya	<i>Foeniculum vulgare</i> Mill. Apiaceae	C	Herb	(i) South Europe: Shetty & Singh, 1987. (ii) Mediterranean Region: Purseglove, 1968. (iii) Europe: Dar <i>et al.</i> , 2002.
38.	Vacha	<i>Acorus calamus</i> Linn. Araceae	C	Herb	(i) Southern Asia, Central & Western North America: Novak, 1966. (ii) Europe: Almeida, 2009.

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39.	Hingu	<i>Ferula foetida</i> Regel Apiaceae	W	Herb	Iran, Afghanistan & Pakistan, Choudhary <i>et al.</i> , 2021; Khare, 2008.
40.	Upakunchi	<i>Nigella sativa</i> Linn. Ranunculaceae	W,C	Herb	(i) Eastern Mediterranean Region: Deb, 1983. (ii) Europe Khurro <i>et al.</i> , 2007; Bailey, 1949.
41.	Dadima	<i>Punica granatum</i> Linn. Punicaceae	C	Tree	(i) South Asia: Gaikwad & Garad, 2015. (ii) Afghanistan, Baluchistan & Persia: Patil, 2003; De Candolle, 1959; Shetty & Singh, 1987.
42.	Dhanyaka	<i>Coriandrum sativum</i> Linn. Apiaceae	C	Herb	(i) South Europe: Yadav & Saidesai, 2002. (ii) Mediterranean Region: Shetty & Singh, 1987.
43.	Jeeraka	<i>Cuminum cyminum</i> Linn. Apiaceae	C	Herb	(i) South Europe: Yadav & Sardesai, 2002. (ii) Mediterranean Region: Patil, 1995; Shetty & Singh, 1987.
44.	Krishna-Jeerak	<i>Carum carvi</i> Linn. Apiaceae	C	Herb	Western Asia, Europe & North America: Patil, 2020; Patil & Dhale, 2013.
45.	Chikaka	<i>Plumbago zeylanica</i> Linn. Plumbaginaceae	W	Shrub	(i) Africa: Rajagopal & Panigrahi, 1965. (ii) Tropics & Subtropics: Matthew, 1991. (iii) Tropics of Asia: Africa, Australia & Hawaii, Bailey, 1949.
46.	Yavani, Ajmoda	<i>Trachyspermum ammi</i> (Linn.) Sprague Apiaceae	C	Herb	(i) South Europe: Yadav & Sardesai, 2002. (ii) Africa: Patil, 1995; Shetty & Singh, 1987.
47.	Yayani-yavani	<i>Hyoschymus niger</i> Linn. Solanaceae	W	Herb	Southern England & South-East Ireland: Novak, 1996.
48.	Ushira	<i>Vetiveria zizanoides</i> (Linn.) Nash Poaceae	C	Herb	China: Medakkar & Sharma, 2016b.
49.	Karpura	<i>Cinnamomum camphora</i> (L.) Nees & Eberm Lauraceae	C	Tree	(i) China & Japan; Bailey, 1949. (ii) Japan: Matthew, 1991. (iii) Taiwan: Gopalswamiengar, 1991. (iv) China & South Japan: Wilson, 1994.

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50.	Jatipatri	<i>Myristica fragrans</i> Houtt. Myristicaceae	C	Tree	Moluccas: Singh <i>et al.</i> , 2001.
51.	Pooga	<i>Areca catechu</i> Linn. Arecaceae	C	Tree	(i) Indonesian Archipelago: Ahuja & Ahuja, 2011. (ii) Malaysian Archipelago: Shah, 2015. (iii) Malaysia: Chaphekar <i>et al.</i> , 2007.
52.	Renuka, Sindhuvara	<i>Vitex negundo</i> Linn. Verbenaceae	W	Shrub	North China & Mongolia: Bailey, 1949.
53.	Bhallataka	<i>Semecarpus anacardium</i> L.f. Anacardiaceae	C	Tree	West Indies: Sainkhdia, 2016.
54.	Chakshushya	<i>Cassia absus</i> Linn. Caesalpiniaceae	W	Herb	(i) Tropical America: Reddy, 2008; Wagh & Jain, 2018. (ii) Central America: Panda <i>et al.</i> , 2018.
55.	Karvira	<i>Nerium indicum</i> Mill. Apocynaceae	C	Shrub	(i) Mediterranean Region: Purseglove, 1968. (ii) China: Almeida, 2001. (iii) Persia to Japan: Matthew, 1991.
56.	Chakramarda	<i>Cassia tora</i> Linn. Caesalpiniaceae	W	Herb	South America: Reddy, 2008; Chandra Sekar, 2012.
57.	Dattura	<i>Datura stramonium</i> Linn. Solanaceae	W	Herb	(i) Tropical America: Lesley, 2020. (ii) America: Patil, 2017a. (iii) Paleotropical: Singh & Srivastava, 2000.
58.	Bringraja	<i>Eclipta prostrata</i> (L.) Linn. (Syn.E.alba Hassk.) Asteraceae	W	Herb	South & Tropical America: Patil, 1990; Reddy, 2008; Rajagopal & Panigrahi, 1965.
59.	Rajarka	<i>Calotropis gigantea</i> (Linn.) R.Br. ex Ait. Asclepiadaceae	W	Shrub	Tropical Africa: Reddy, 2008; Chandra Sekar, 2012.
60.	Kakumachi	<i>Solanum nigrum</i> Linn. Solanaceae	W	Herb	(i) Tropical America: Patil, 2017b; Debnath & Debnath, 2017. (ii) Europe & America: Almeida, 2001a.

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61.	Kakanasa	<i>Martynia annua</i> Linn. Martyniaceae	W	Herb	(i) Tropical America: Patil, 2003; Reddy, 2008. (ii) Mexico & Brazil: Patil, 2003. (iii) Mexico: Yadav & Sardesai, 2002.
62.	Moolaka	<i>Raphanus sativus</i> Linn. Brassicaceae	C	Herb	(i) Western Asia: Purseglove, 1968. (ii) Europe: John, 1891. (iii) Europe & Temperate Asia: Patil, 1995.
63.	Grinjana, Gajara	<i>Daucus carota</i> (Hoffm.) Schubl. & G. Martens Apiaceae	C	Herb	(i) Europe: Patil, 2003; Yadav & Sardesai, 2002. (ii) Europe & North Africa: Shetty & Singh, 1987. (iii) Europe & Temperate Asia: De Candolle, 1886.
64.	Shigru	<i>Moringa oleifera</i> Lam. (Syn.M.pterosperma Gaertn.) Moringaceae	C	Tree	America: Singh & Srivastava, 2000.
65.	Sarsapa	<i>Brassica campestris</i> L. Brassicaceae	C	Herb	Mediterranean Region: Almeida, 1996.
66.	Rajakshavaka	<i>Brassica nigra</i> (L.) Koch. Brassicaceae	C	Herb	Europe: Naqshi & Javeid, 1987; John, 1891.
67.	Bhustrina	<i>Hyptis suaveolens</i> (L.) Poit. Lamiaceae	W	Herb	Tropical America: Reddy, 2008; Patil, 2003; Naik, 1998.
68.	Jambira	<i>Citrus limon</i> (Linn.) Burm. f. Rutaceae	C	Tree	South-East Asia: Yadav & Sardesai, 2002; Hajra <i>et al.</i> , 1997.
69.	Kutheraka	<i>Ocimum basilicum</i> L. Lamiaceae	C	Herb	(i) Persia: Pullaiah <i>et al.</i> , 2011. (ii) Afro-Asian: Patil, 2003.
70.	Sumukha, Asuri	<i>Brassica juncea</i> (L.) Czern. & Coss. Brassicaceae	C	Herb	(i) Middle East & Neighbouring Region: Prakash, 1980. (ii) Eastern Europe & China: Spect & Diedarchson, 2001. (iii) Tibet: Medakkar & Sharma, 2016b.

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71.	Jala-pippali	<i>Phyla nodiflora</i> Greene (Syn. <i>Lippia nodiflora</i> Mich.) Verbenaceae	W	Herb	South America: Stewart, 1972.
72.	Jantukari	<i>Solanum virginianum</i> L. Solanaceae	W	Herb	Paleotropical: Singh & Srivastava, 2000.
73.	Varahi	<i>Dioscorea bulbifera</i> L. Dioscoreaceae	W	Climber	Asia (Excl. India): Stewart, 1972.
74.	Vishukranta	<i>Evolvulus alsinoides</i> (L.) L. Convolvulaceae	W	Herb	America: Daniel, 2008.
75.	Tanduliya	<i>Amaranthus spinosus</i> L. Amaranthaceae	W	H	Tropical America: Patil, 1995, 2017b.
76.	Kasamarda	<i>Cassia occidentalis</i> L. Caesalpiaceae	W	H	Tropical America: Reddy, 2008; Patil, 2017b; Chandra Sekar, 2012.
77.	Kusha	<i>Saccharum spontaneum</i> L. Poaceae	W	H	Tropical West Asia: Reddy, 2008; Chandra Sekar, 2012; Patil, 2017a.
78.	Darbha	<i>Imperata cylindrica</i> (L.) Beauv. Poaceae	W	H	(i) Tropical America: Debnath & Debnath, 2017; Reddy, 2008. (ii) Africa: Almeida, 2009. (iii) Asia (Excl. India) & Europe: Kaul, 1986.
79.	Nala	<i>Phragmites vallatoria</i> (Pluk. ex L.) Veldk. [Syn. <i>P. karka</i> (Retz.) Trin. ex Steud] Poaceae	W	H	(i) Africa: Quereshi <i>et al.</i> , 2014. (ii) North America: Garg 2018-2019.
80.	Durva	<i>Cynodon dactylon</i> (L.) Pers. Poaceae	W	H	Tropical Africa: Debnath & Debnath, 2017; Wagh & Jain, 2015; Panda <i>et al.</i> , 2018.
81.	Rajamra	<i>Spondias pinnata</i> (L.f.) Kurz. Anacardiaceae	C	T	Tropical Asia: Martin <i>et al.</i> , 1987.

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82.	Madhu-jambeera	<i>Citrus aurantium</i> L. Rutaceae	C	T	(i) South China: Yadav & Sardesai, 2002.
83.	Naranga	<i>Citrus reticulata</i> Blanco Rutaceae	C	T	Philippines: Almeida, 1996.
84.	Beejapura	<i>Citrus medica</i> Linn. Rutaceae	C	T	China: Roxburgh, 1814; Patil, 2019a.
85.	Amlika	<i>Tamarindus indica</i> Linn. Caesalpinaceae	C	T	(i) Tropical America: Patil, 1990. (ii) Tropical Africa: Pullaiah & Ramamurthy, 2001.
86.	Kshudramlika	<i>Oxalis corniculata</i> L. Oxalidaceae	W	H	(i) Europe: Patil, 2017b; Reddy, 2008. (ii) North America: Bailey, 1949. (iii) South Europe: Rajagopal & Panigrahi, 1965.
87.	Arukam	<i>Prunus persica</i> (L.) Batsch. Rosaceae	C	T	China: Bailey, 1949.
88.	Pinda-Kharjura	<i>Phoenix dactylifera</i> L. Arecaceae	C	T	(i) Africa: Bailey, 1949. (ii) Persian Gulf: Patil, 2019.
89.	Draksha	<i>Vitis vinifera</i> Linn. Vitaceae	C	C	(i) West Indies: Gaikwad & Garad, 2015. (ii) Asia (Excl. India) & Europe: Stewart, 1972.
90.	Tala	<i>Borassus flabellifer</i> Linn. Arecaceae	C	Tree	Tropical Africa: Reddy, 2008; Cooke, 1958; Chandra Sekar, 2012.
91.	Badara	<i>Ziziphus jujuba</i> Mill. Rhamnaceae	C	Tree	Subtropics & Warm Temperate Zone: Martin <i>et al.</i> , 1987.
92.	Karamardaka	<i>Carissa carandas</i> L. Apocynaceae	W	Shrub	(i) South Africa: Sainkhedia, 2016. (ii) Malaysia: Medakkar & Sharma 2016b.

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93.	Shirisha	<i>Albizia lebbek</i> (L.) Benth. Mimosaceae	C	Tree	(i) Pantropical Africa & Tropical Asia: Bhandari, 1978. (ii) Indomalaya, New Guinea & Northern Australia: Singh <i>et al.</i> , 2015. (iii) North Australia & Tropical Asia: Patil, 2017a.
94.	Shalmali	<i>Bombax ceiba</i> L. Bombacaceae	W	Tree	(i) America & Australia: Mukhopadhyay & Chakraverty, 2008. (ii) Brazil To Argentina: Singh <i>et al.</i> , 2015. (iii) Africa: Gaikwad & Garad, 2015.
95.	Irimeda	<i>Vachellia farnesiana</i> (L.) Wight & Arn. (Syn. <i>Acacia farnesiana</i> Willd.) Mimosaceae	C	Tree	(i) Tropical South Asia: Reddy, 2008. (ii) Australia: Chandra Sekar, 2012. (iii) Central America: Rania & Rim, 2021.
96.	Mallika	<i>Jasminum sambac</i> (L.) Ait. Oleaceae	C	Shrub	Tropical Asia: John, 1989; Patil, 2021.
97.	Kubjaka	<i>Rosa moschata</i> Hernm. Rosaceae	C	Herb	Europe & North America: Dar <i>et al.</i> , 2002.
98.	Yava	<i>Hordeum vulgare</i> Linn. Poaceae	C	Herb	Europe & North America: Dar <i>et al.</i> , 2002.
99.	Kodrava	<i>Paspalum scrobiculatum</i> L. Poaceae	W,C	Herb	Tropical Africa: Singh & Nigam, 2017.
100.	Priyansu	<i>Setaria italica</i> (Linn.) P. Beauv. Poaceae	C	Herb	(i) Near East (China): Singh & Nigam, 2017. (ii) East Asia: Naik, 1998. (iii) Northern China: Castillo <i>et al.</i> , 2016.
101.	Adhaki	<i>Cajanus cajan</i> (Linn.) Millsp. Papilionaceae	C	Shrub	Tropical Africa: De Candolle, 1959; Gaikwad & Garad, 2015.

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102.	Masura	<i>Lens culinaris</i> Medic. Papilionaceae	C	Herb	(i) Central Europe, Mediterranean Region & West Asia: Patil, 1995. (ii) Mediterranean Region & West Asia: Shetty & Singh, 1987.
103.	Godhuma	<i>Triticum aestivum</i> Linn. Poaceae	C	Herb	Fertile Crescent: Singh & Nigam, 2017; Patil, 2017a.
104.	Chanaka	<i>Cicer arietinum</i> L. Papilionaceae	C	Herb	(i) Mediterranean Region: Shetty & Singh, 1987. (ii) South Europe: Patil, 1990.
105.	Kalaya	<i>Pisum sativum</i> L. Papilionaceae	C	Herb	(i) Mediterranean Region: Novak, 1966. (ii) West Asia: Shetty & Singh, 1987.
106.	Kulatthaya	<i>Macrotyloma uniflorum</i> (Lam.) Verdc. (Syn. <i>Dolichos biflorus</i> Linn.) Papilionaceae	C	Herb	South East Asia: Patil, 2019a.
107.	Karata	<i>Lablab purpureus</i> (L.) Sweet (Syn. <i>Dolichos lablab</i> Linn.) Papilionaceae	C	Climber	(i) Tropical Africa: Debnath & Debnath, 2017. (ii) Africa: Hewson & Thompson, 1993.
108.	Methiko	<i>Trigonella foenum-graecum</i> L. Papilionaceae	C	Herb	(i) South Europe: Patil, 1995; Shetty & Singh, 1987. (ii) Asia (Excl. India) & Europe: Kaul, 1986.
109.	Atasi	<i>Linum usitatissimum</i> L. Linaceae	C	Herb	(i) Mediterranean Region: De Candolle, 1959; Patil, 2019c. (ii) Europe: Dar <i>et al.</i> , 2002; John, 1991.
110.	Kusumbha	<i>Carthamus tinctorius</i> L. Asteraceae	H,C	Herb	(i) West Asia: Yadav & Sardesai, 2002. (ii) South-West Asia: Patil, 2003; Cooke, 1958; Gaikwad & Garad, 2015.

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111.	Khustila	<i>Papaver somniferum</i> L. Papaveraceae	C	Herb	(i) Mediterranean Countries & Middle East: Shetty & Singh, 1987. (ii) Europe: Stewart, 1972. (iii) Probably Eurasia: Wilson, 1994.
112.	Tulushis, Surasa, Gramya, Bahumanjari, Gowri Bhutaghi	<i>Ocimum tenuiflorum</i> L. (Syn. <i>O. sanctum</i> L.) Lamiaceae	C	Herb	Northern Coastal Belt of Mediterranean Region: Swamy, 1973.

