

## Ethnonutritional, ethnomedicinal and sacred religious rites of “*Karkidaka charya*” a traditional seasonal practice of Kerala

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*Karkidaka charya* is the seasonal regimen followed during *Karkidaka*, the last month of the Malayalam calendar (mid-July to mid-August). It is the month with torrential rain, low digestive fire and causing the vitiation of three humours (*Vata*, *Pitta* and *Kapha*) according to Ayurveda classics. Economic imbalances of the early farming communities, low immunity and environment which is favourable for epidemics, made the month of *Karkidaka* more vulnerable. Hence, our older generation followed a strict regimen to avert from this detrimental *Karkidaka*. The present study is a compilation of the traditional practices in Kerala during the month of *Karkidaka* and its critical analysis. About 22 unique practices were observed in different parts of Kerala during this month. Most of the practices were observed as a caution for any upcoming pandemic in the severe rainy month. The practices cover ethnonutritional, ethnomedicinal and sacred religious aspects of *Karkidaka charya*.

**Keyword:** Culture, Ethnomedicine, Ethnonutrition, *Karkidaka charya*, Kerala, Rites, Sacred religious, Seasonal practice

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The narrow strip of land sandwiched in between Arabian Sea in the West and Western Ghats in the East, makes Kerala geographically unique. Traditional festivals and regimens of this bewitched land represents an expression of culture and lifestyle resulting from its local climatic, agricultural and economic principles. *Karkidaka charya* is one such unique traditional health care practice among Keralites.

*Karkidaka* is the last month of the Malayalam calendar (mid-July–mid August) and *Charya* is the Sanskrit word meaning regimens. According to astrology, the sun travels through *Karkidaka* (Cancer) rasi during the month of ‘*Karkidaka*’. Ayurveda explains the month of *Karkidaka* as the starting of *dakshinayana kaala* (where the sun is seen traversing to the Southern hemisphere) and ending of the *aadana kaala* (where the sun is seen traversing to the Northern hemisphere). During the *dakshinayana kaala* sun is over the Southern hemisphere and it gives strength to the organisms and in *aadana kaala* sun is over the Northern hemisphere<sup>1</sup>. Subsequently,

*Karkidaka* month becomes the period of transition from a state of less immunity and physical strength (*Adana kaala*), to high immunity and physical strength (*Visarga kaala*). Classical Ayurvedic texts say, as this transition messes with human physiology, certain regimens have to be strictly practiced.

Kerala witnesses mainly two rainy seasons, the Southwest monsoon and the Northeast monsoon. The Southwest monsoon or ‘*Idavappathy*’ (as it commences during the later half of the month of ‘*Idavam*’ on the Malayalam calendar) arrives in the month of June and north east monsoon or *Thula varsham* arrives in the month of October. The heavy rain and chilly wind during the earlier days of *Karkidaka* plays havoc with human health. The weak digestive power of *aadana kaala* further worsens in the rainy season (*varsha rithu*). In this season, body become more weak and causes vitiation of all three humours<sup>2</sup> (*Vata*, *Pitta* and *Kapha*). The transition from *aadana* to *visarga kaala*, torrential rain, low digestive fire, vitiation of three humours, economic imbalances of the farming community, low immunity and favourable environment for epidemics make the month of *Karkidaka* more vulnerable. Hence, our

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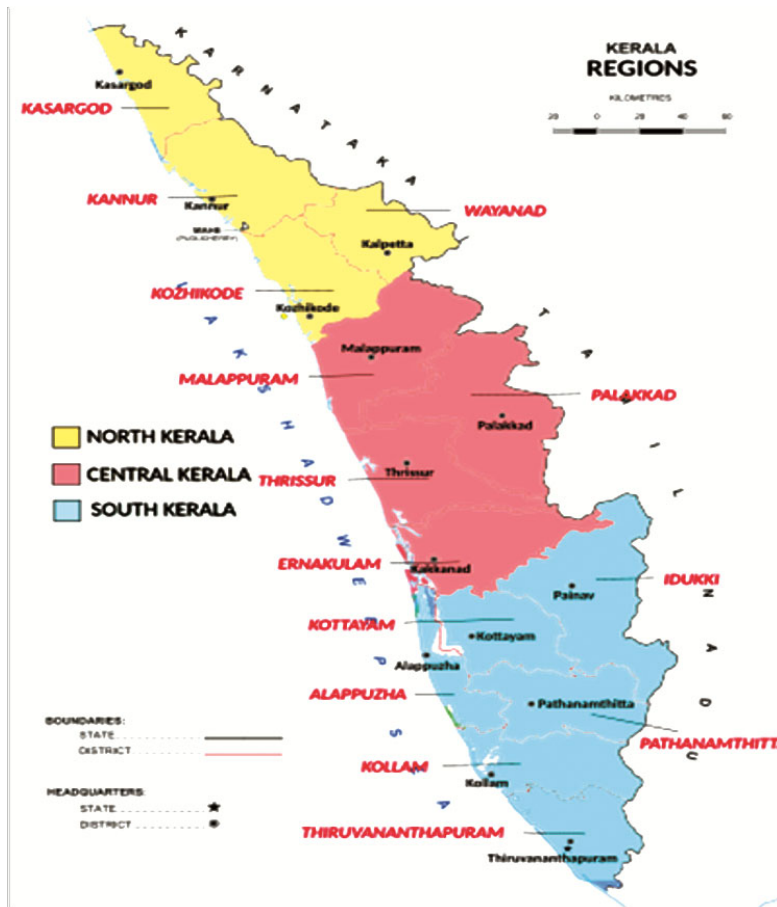


Fig. 1 — Kerala regions

older generation aphorize *Karkidaka* as “*Karkadam durghadam*” (month of poverty, diseases and inauspicious), “*Kadavotty Karkidakam* (month of poverty) and “*Karkidakam panja masam*” (month of poverty and diseases). To get rid of these difficulties several cultural practices were performed during this month based on the availability of food crops and traditional beliefs. As there is very feeble data regarding *Karkidaka charya*, the present study compiled traditional practices in Kerala during the month of *Karkidaka* along with its critical analysis.

**Materials and Methods**

**Study area**

Kerala is a state in the Southwestern coast of India. It is known for its biodiversity with an area 38,863 square km, stretches about 360 miles (580 km) along the Malabar Coast<sup>3</sup>. The survey was conducted throughout Kerala. Where, Kerala was divided as Northern Kerala (Kasarcod, Kannur, Wayanad, Kozhikode, Malappuram), Central Kerala (Palakkad,

Sl. No	Area of Data collection	Participants		Total
		Male	Female	
1.	Northern Kerala	1	6	7
2.	Central Kerala	2	7	9
3.	Southern Kerala	2	6	8
	Total	5	19	24

Thrissur, Ernakulam, Idukki) and Southern Kerala (Trivandrum, Kollam, Pathanamthitta, Kottayam, Alappuzha) regions (Fig. 1). The division was chosen for the reason that, variations in cultural tradition was noticeable based on this geography<sup>4</sup>.

**Data collection**

The information was acquired through the interaction with traditional knowledge holders. 24 informants (age >55) were randomly selected from Northern Kerala, Central Kerala and Southern Kerala (Table 1) during the year 2018-2020, July- august. Data collection was done through field trips, direct and indirect interviews. Prior informed consent was taken from the knowledge providers as per the

guidelines. Audio and written documentation of the data was done. The photographs are also taken after taking the permission from the concerned person. The undocumented information acquired does not compromise on their intellectual property. Timeworn and existing cultural practices were recorded under seasonal ethnonutritional, ethnomedicinal and sacred religious aspects. From the results obtained, data was analyzed on aspects related to season specific hygiene, mental fitness, physical fitness and food practices.

#### Data analysis

The standard statistical indices relevant for the present study such as Informant Consensus Factor (ICF) and User Value (UV) were selected<sup>5</sup>. The primary data was normalized using MS excel sheet.

#### Informant consensus factor (ICF)<sup>6</sup>

ICF value indicates the uniformity of the information about a specific plant use shared by all the informants for a particular ritual. The value of this factor ranges from 0 to 1. The maximum ICF value close to 1 indicates well known plant species used due to the authenticity for same ritual.

$$ICF = \frac{Nur - Nt}{Nur - 1}$$

Where, Nur = Number of reports for a particular use category; Nt = Number of taxa used for particular use category by all the informant. However, ICF value 0 represents rare or no use of the plant by the informant.

#### User value (UV)<sup>7</sup>

The use value (UV) established to know the relative importance of locally used species with respect to other species. High value of UV means that the plant is very important. The UV is calculated as:

$$UV = \frac{\sum U}{N}$$

Where, U: number of uses per species, n: number of informants.

#### Results

About 22 unique practices were observed in different parts of Kerala during the month of *Karkidaka*. A total of 98 plants were documented belonging to 89 genera and 49 families (Table 2). Fabaceae family was noted to have the largest number of species (9 species), followed by Poaceae and Apiaceae (6 species). Different parts of the medicinal plant species were used like heart wood, whole plant, endosperm, leaves, stem, fruits, rhizome, tuber, twig, seeds, bark and root, among that leaves were the most commonly used part followed by plant as whole. The use value (UV) was calculated for each plant. The species with the highest UV values were *Zingiber officinale* Roscoe and *Oryza sativa* L with a UV of 0.98 Among these seasonal practices most of the rituals were observed as a prevention for upcoming pandemic during/after the severe rainy month. 08 rituals such as *Karkidaka sankranthi*, *Kaliyanu kodukkal*, *Chettaye odikkal*, *Sheepothi orukkal*, *Kalichiyee kalayal*, *Aadi kalayal*, *Aadi vedan*, *Karkidaka parayana* were found to be custom specific hygiene methods, while 06 practices (*Sheepothi orukkal*, *Nira puthari*, *Karkidaka parayana*, *Aadi vedan*, *Muppettu velli*, *Karkidaka vaavu*) were noted as rituals helping in mental fitness in a spiritual way. About 06 rituals *Kaliyanu kodukkal*, *Chettaye odikkal*, *Nira puthari*, *Aadi vedan*, *Pilleronam*, *Muppettu velli* were related to games, arts and crafts, 06 rituals fall under ethnonutritional category (*Karkidaka vaavu*, *Mukkudi seva*, *Karkidaka pathu*, *Karkidaka kanji*, *Uluva unda*, *Aanayoottu* and *moorimarunnu* (veterinary) and 03 rituals such as *Karkidaka kuri*, *Oushada seva*, *Nadee kashaya seva* can be included under ethnomedicinal aspect. Although they can be categorized (Table 3) under three aspects

Table 2 — Categorization of *Karkidakacharya*

Ethnonutritional (EN)	Ethnomedical (EM)	Sacred and religious rites (SAR)		
<i>Karkidaka vaavu</i>	<i>Karkidaka kuri</i>	Personal	and	sorrounding Spiritual
<i>Mukkudi seva</i>	<i>Oushada seva</i>	hygiene		Games, arts and crafts
<i>Karkidaka pathu</i>	<i>Nadee kashaya seva</i>	<i>Karkidaka sankranthi</i>		<i>Sheepothi orukkal</i>
<i>Karkidaka kanji</i>		<i>Kaliyanu kodukkal</i>		<i>Kaliyanu kodukkal</i>
<i>Marunnunda</i>		<i>Chettaye odikkal</i>		<i>Chettaye odikkal</i>
<i>Aanayoottu and</i>		<i>Sheepothi orukkal</i>		<i>Nira puthari</i>
<i>moorimarunnu</i>		<i>Kalichiyee kalayal</i>		<i>Aadi vedan</i>
(veterinary aspect)		<i>Aadi kalayal</i>		<i>Muppettu velli</i>
		<i>Aadi vedan</i>		<i>Pilleronam</i>
		<i>Karkidaka parayana</i>		<i>Muppettu velli</i>

Table 3 — Plants used in *karkidakacharya*

S. N.	Botanical source	Family name	Categorization	UV	Documented uses
1.	<i>Strychnos nux-vomica</i> L.	Loganiaceae	SAR	0.12	Twig is offered in <i>Niraputhari</i> ceremony
2.	<i>Atrocarpus heterophyllus</i> Lam	Moraceae	SAR	0.09	Twig is offered during <i>Niraputhari</i> ceremony. Different models related to agriculture like ox, plough, etc., are prepared out of leaves in <i>Kaliyanukodukkal</i> ceremony. The tree grown in south-western corner is considered as <i>Kaliyanplavu</i> (symbolize God <i>Kaliyan</i> )
3.	<i>Maranta arundinacea</i> L.	Marantaceae	SAR	0.09	Different models related to agriculture like ox, plough, etc., are prepared out of leaves in <i>Kaliyanu kodukkal</i> ceremony.
4.	<i>Mussaenda frondosa</i> L.	Rubiaceae	SAR	0.06	Twig is offered during <i>Niraputhari</i> ceremony.
5.	<i>Clerodendrum infortunatum</i> L.	Lamiaceae	SAR	0.075	Twig is offered during <i>Niraputhari</i> ceremony.
6.	<i>Bambusa</i> spp.	Poaceae	SAR	0.091	Twig is offered during <i>Niraputhari</i> ceremony.
7.	<i>Ficus religiosa</i> L.	Moraceae	SAR	0.63	Twig is offered during <i>Niraputhari</i> ceremony.
8.	<i>Ficus benghalensis</i> L.	Moraceae	SAR	0.63	Twig is offered during <i>Niraputhari</i> ceremony.
9.	<i>Mangifera indica</i> L.	Anacardiaceae	SAR	0.63	Twig is offered during <i>Niraputhari</i> ceremony.
10.	<i>Oryza sativa</i> L.	Poaceae	SAR EN	0.98	Paddy husk is offered during <i>Niraputhari</i> ceremony. Several attractive figures are made out of paddy spikes like ornamental ceiling, parrot etc., Endosperm of indigenous variety ( <i>Chambavu</i> - parboiled) is used in preparing <i>Karkidaka lehya</i> . Endosperm of indigenous variety ( <i>Njavara</i> ) is used in preparing <i>Marunnu unda</i> and <i>Karkidaka kanji</i> . Dried cooked endosperm ( <i>Pacheri</i> –Raw rice) is used in <i>Karkidaka vaavu</i> . Dried raw rice along with turmeric, chilli powder and charcoal is used in preparing tricolor bolus during <i>Chettaye odikkal</i> . Cooked rice is given as an offering during <i>Kaliyanu kodukkal</i> ceremony. Offerings like rice/paddy ( <i>Ari/Nellu</i> ) is offered during <i>Aadi vedan</i> ceremony, also <i>Kutti theyyam</i> gives away <i>prasada</i> made of turmeric and rice during the ceremony. Dehusked paddy is considered as one of 8 auspicious things ( <i>Ashta lekshmi</i> ) during decoration of <i>sheepothi</i> .
11.	<i>Saccharum officinarum</i> L.	Poaceae	SAR EN	0.69	Jaggery is used in preparing <i>Marunnu unda</i> , <i>Karkidaka lehya</i> , <i>Karkidaka vaavu</i> . Jaggery is also given as food to elephant during <i>Aanayoottu</i> ceremony.
12.	<i>Musa paradisiaca</i> L.	Musaceae	SAR EN	0.52	Leaf is used in <i>Karkidaka vaavu</i> and <i>Pilleronam</i> . In <i>Pilleronam</i> leaf used as a plate to distribute the food item. Different models related to agriculture like ox, plough, etc., are prepared out of leaves in <i>Kaliyanu kodukkal</i> ceremony. The Plantain stem also aids in successful preparation of these models.
13.	<i>Sesamum indicum</i> L.	Pedaliaceae	SAR EN	0.73	Seeds are used in preparing <i>Marunnu unda</i> and <i>Karkidaka lehya</i> . In <i>Karkidaka vaavu</i> ritual seeds are offered to fore fathers. Seed oil is used in lighting lamp in most of the ceremony.
14.	<i>Santalum album</i> L.	Santalaceae	SAR	0.24	Heart wood paste is used as an offering in <i>Karkidaka vaavu</i> . Santal wood is considered as one of the 8 auspicious things ( <i>Ashta lekshmi</i> ) during decoration of <i>sheepothi</i> .
15.	<i>Aerva lanata</i> (L.) Juss.ex. Schult.	Amaranthaceae	SAR EN	0.91	Twig or whole fresh plant is used in ceremonies like <i>Niraputhari</i> , <i>Dasapushpa</i> , <i>Karkidaka vaavu</i> . In <i>Karkidaka kanji</i> juice of the same is taken for preparation of medicinal food.
16.	<i>Desmostachya bipinnata</i> (L.) Stapf	Poaceae	SAR	0.28	Using this leaf “ <i>Pavitram</i> ” is made, a type of ring which has to wear in right ring finger during <i>Karkidaka vaavu</i> ritual by the ritual performer.
17.	<i>Plumbago auriculata</i> Lam. Or <i>Plumbago</i> spp.		EN EM	0.16	Fresh purified roots are used in preparing <i>Oushada seva</i> and <i>Mukkudi seva</i>
18.	<i>Plumbago zeylanica</i>	Plumbaginaceae	EN	0.22	Dried purified roots are used in preparing <i>Karkidaka kanji</i> .

(Contd.)

Table 3 — Plants used in *karkidakacharya* (Contd.)

S. N.	Botanical source	Family name	Categorization	UV	Documented uses
19.	<i>Acorus calamus</i> L.	Acoraceae	EN EM	0.16	Rhizomes are used in preparing <i>Oushada seva</i>
20.	<i>Terminalia chebula</i> Retz.	Combrataceae	EN EM	0.34	Fruit rind is used in <i>Oushada seva</i> , <i>Karkidaka kanji</i> and <i>Nadee kashaya</i>
21.	<i>Emblica officinalis</i> Gaertn.	Phyllanthaceae	EN EM	0.53	Fruit rind is used in <i>Oushada seva</i> , <i>Karkidaka kanji</i> and <i>Nadee kashaya</i>
22.	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Combrataceae	EN EM	0.53	Fruit rind is used in <i>Oushada seva</i> , <i>Karkidaka kanji</i> and <i>Nadee kashaya</i>
23.	<i>Lepidium sativum</i> L.	Brassicaceae	EN EM	0.88	Dried fruits are used in the preparation of <i>Marunnu unda</i> , <i>Karkidaka kanji</i> , <i>Karkidaka lehya</i> , and <i>Nadee kashaya</i>
24.	<i>Alpinia calcarata</i> (Haw.) Roscoe	Zingiberaceae	EM	0.16	Rhizome is used in preparing <i>Nadee kashaya</i>
25.	<i>Pterocarpus santalinus</i>	Fabaceae	EM	0.11	Heart wood is used in preparing <i>Nadee kashaya</i>
26.	<i>Chrysopogon zizanioides</i> (L.) Roberty	Poaceae	EN EM	0.23	Root is used in preparing <i>Nadee kashaya</i>
27.	<i>Sida alnifolia</i> L.	Malvaceae	EM	0.22	Root is used in preparing <i>Nadee kashaya</i>
28.	<i>Tragia involucrate</i> L.	Euphorbiaceae	EM EN	0.34	Root is used in preparing <i>Nadee Kashaya</i> . Tender leaf is used as one among <i>Pathila</i> .
29.	<i>Andrographis paniculata</i> (Burm.f.) Nees	Acanthaceae	EM	0.14	Root is used in preparing <i>Nadee kashaya</i>
30.	<i>Plectranthus hardiensis</i> (Forssk.) Schweinf.ex Sprenger	Lamiaceae	EM	0.1	Whole plant is used in preparing <i>Nadee kashaya</i>
31.	<i>Azadirachta indica</i> A.Juss.	Meliaceae	EM	0.11	Bark is used in preparing <i>Nadee kashaya</i>
32.	<i>Coscinium fenestratum</i> (Goetgh.) Colebr.	Menispermaceae	EM	0.08	Stem is used in preparing <i>Nadee kashaya</i>
33.	<i>Cedrus deodara</i> (Roxb. ex D. Don)	Pinaceae	EM	0.04	Hard wood is used in preparing <i>Nadee kashaya</i>
34.	<i>Ricinus communis</i> L.	Euphorbiaceae	EM	0.08	Root is used in preparing <i>Nadee kashaya</i>
35.	<i>Curcuma longa</i> L.	Zingiberaceae	EM SAR	0.30	Rhizome is used in preparing <i>Nadee Kashaya</i> , <i>Kutti theyyam</i> gives away prasada made of turmeric and rice during <i>Aadi vedan</i> ceremony. Turmeric along with calcium Hydroxide is used as <i>Gurusi</i> water in <i>Chettaye odikkal</i> and <i>Aadi vedan</i> ceremony.
36.	<i>Trigonella foenum-graecum</i> L.	Fabaceae	EM EN	0.36	Dried seed is used in preparing <i>Nadee Kashaya</i> , <i>Marunnu unda</i> and <i>Karkidaka lehya</i>
37.	<i>Cyclospermum leptophyllum</i> (Pers.) Sprague.	Apiaceae	EN EM	0.41	Dried fruit is used in preparing <i>Nadee Kashaya</i> , <i>Karkidaka lehya</i>
38.	<i>Zingiber officinale</i> Roscoe	Zingiberaceae	EM EN	0.98	Rhizome is used in preparing <i>Nadee Kashaya</i> , <i>Marunnu unda</i> , <i>Mukkudi seva</i> , <i>Karkidaka kanji</i> and <i>Karkidaka lehya</i>
39.	<i>Glycyrrhiza glabra</i> L.	Fabaceae	EM	0.29	Dried root is used in preparing <i>Nadee kashaya</i>
40.	<i>Kaempferia galanga</i> L.	Zingiberaceae	EM	0.12	Dried rhizome is used in preparing <i>Nadee kashaya</i>
41.	<i>Piper nigrum</i> L.	Piperaceae	EM EN	0.48	Dried fruit is used in preparing <i>Nadee Kashaya</i> , <i>Mukkudi seva</i>
42.	<i>Cyperus rotundus</i> L.	Cyperaceae	EM	0.24	Fresh rhizome is used in preparing <i>Nadee kashaya</i>
43.	<i>Oldenlandia corymbosa</i> L.	Rubiaceae	EM	0.22	Dried whole plant is used in preparing <i>Nadee kashaya</i>
44.	<i>Vigna radiate</i> (L.) R. Wilczek	Fabaceae	EM EN	0.29	Dried whole plant is used in preparing <i>Nadee Kashaya</i> . Tender leaf is used as one among <i>Pathila</i> and used in preparing <i>Karkidaka kanji</i>
45.	<i>Strychnos potatorum</i> L.f.	Loganiaceae	EM	0.11	Dried seed is used in preparing <i>Nadee kashaya</i>
46.	<i>Elettaria cardamomum</i> L.	Zingiberaceae	EM EN	0.42	Dried fruit and seed is used in preparing <i>Nadee Kashaya</i> , <i>Marunnu unda</i> and <i>Karkidaka kanji</i>

(Contd.)

Table 3 — Plants used in *karkidakacharya* (Contd.)

S. N.	Botanical source	Family name	Categorization	UV	Documented uses
47.	<i>Embelia ribes</i> Burm.f.	Myrsinaceae	EM EN	0.15	Dried fruit is used in preparing <i>Nadee Kashaya</i> and <i>Karkidaka kanji</i>
48.	<i>Cullen corylifolium</i> (L.) Medik.	Fabaceae	EM EN	0.22	Dried seed is used in preparing <i>Nadee Kashaya</i> and <i>Karkidaka kanji</i>
49.	<i>Coriandrum sativum</i> L.	Apiaceae	EN EM	0.24	Dried fruit is used in preparing <i>Nadee Kashaya</i> and <i>Karkidaka kanji</i>
50.	<i>Holarrhena antidysenterica</i> (L.) Wall.	Apocyanaceae	EM EN	0.26	Dried seed is used in preparing <i>Nadee Kashaya</i> and <i>Karkidaka kanji</i>
51.	<i>Celastrus paniculatus</i> Willd.	Celastraceae	EN EM	0.28	Dried seed is used in preparing <i>Nadee Kashaya</i> and <i>Karkidaka kanji</i>
52.	<i>Cuminum cyminum</i> L.	Apiaceae	EM EN	0.75	Dried fruit is used in preparing <i>Nadee Kashaya</i> , <i>Marunnu unda</i> , <i>Karkidaka kanji</i> and <i>Karkidaka lehya</i>
53.	<i>Nigella sativum</i> L.	Ranunculaceae	EN EM	0.46	Dried fruit is used in preparing <i>Nadee Kashaya</i> , <i>Karkidaka kanji</i> and <i>Karkidaka lehya</i>
54.	<i>Carum carvi</i> L.	Apiaceae	EM EN	0.23	Dried fruit is used in preparing <i>Nadee Kashaya</i> and <i>Karkidaka kanji</i>
55.	<i>Anethum sowa</i> Roxb. Ex Fleming	Apiaceae	EN EM	0.44	Dried fruit is used in preparing <i>Marunnu unda</i> , <i>Karkidaka lehya</i> , <i>Karkidaka kanji</i>
56.	<i>Cocos nucifera</i> L.	Arecaceae	SAR EN	0.96	Grated coconut is shredded while preparing <i>Marunnu unda</i> and <i>Karkidaka kanji</i> (coconut milk is also used instead of shredded coconut in <i>Kanji</i> ). Different models related to agriculture like ox, plough, etc., are prepared out of leaves in <i>Kaliyanu kodukkal</i> ceremony. Coconut leaf is also given as food during <i>Aanayoottu</i> ceremony. Burned pieces of coconut shell, <i>Choottu pandam</i> (lighting facility using dried coconut leaves) is also placed along with the models in <i>Kaliyanu kodukkal</i> ceremony.
57.	<i>Piper longum</i> L.	Piperaceae	EN	0.73	Dried fruit is used in preparing medicinal butter milk in <i>Mukkudi seva</i> and also in <i>Karkidaka kanji</i>
58.	<i>Colocasia esculenta</i> (L.) Schott	Araceae	EN	0.21	Tender leaves are used as <i>Pathila</i> and used in preparation of <i>Karkidaka kanji</i>
59.	<i>Amorphophallus paeoniifolius</i> (Dennst.) Nicols. var. <i>campanulatus</i> (Decne.) Sivad.	Araceae	EN	0.22	Tender leaves are used as <i>Pathila</i> and used in preparation of <i>Karkidaka kanji</i>
60.	<i>Cucurbita maxima</i> Duchesne	Cucurbitaceae	EN	0.22	Tender leaves are used as <i>Pathila</i> and used in preparation of <i>Karkidaka kanji</i>
61.	<i>Diplocyclos palmatus</i> Jeffrey	Cucurbitaceae	EN	0.1	Tender leaves are used as <i>Pathila</i> and used in preparation of <i>Karkidaka kanji</i>
62.	<i>Boerhavia diffusa</i> L.	Nyctaginaceae	EN	0.22	Tender leaves are used as <i>Pathila</i> and used in preparation of <i>Karkidaka kanji</i>
63.	<i>Dioscorea alata</i> L.	Dioscoraceae	EN	0.20	Tender leaves are used as <i>Pathila</i> and used in preparation of <i>Karkidaka kanji</i>
64.	<i>Benincasa hispida</i> Thunb	Cucurbitaceae	EN	0.16	Tender leaves are used as <i>Pathila</i> and used in preparation of <i>Karkidaka kanji</i>
65.	<i>Alternanthera sessilis</i> L.	Amaranthaceae	EN	0.18	Tender leaves are used as <i>Pathila</i> and used in preparation of <i>Karkidaka kanji</i>
66.	<i>Amaranthus spinosus</i> L.	Amaranthaceae	EN	0.20	Tender leaves are used as <i>Pathila</i> and used in preparation of <i>Karkidaka kanji</i>
67.	<i>Amaranthus dubius</i> Mart.ex. Thell	Amaranthaceae	EN	0.11	Tender leaves are used as <i>Pathila</i> and used in preparation of <i>Karkidaka kanji</i>
68.	<i>Basella alba</i> L.	Basellaceae	EN	0.12	Tender leaves are used as <i>Pathila</i> and used in preparation of <i>Karkidaka kanji</i>
69.	<i>Centella asiatica</i> L.	Apiaceae	EN	0.20	Tender leaves are used as <i>Pathila</i> and used in preparation of <i>Karkidaka kanji</i>

(Contd.)

Table 3 — Plants used in *karkidakacharya* (Contd.)

S. N.	Botanical source	Family name	Categorization	UV	Documented uses
70.	<i>Leportia interupta</i> L. Chew, Gard. Bull	Urticaceae	EN	0.21	Tender leaves are used as <i>Pathila</i> and used in preparation of <i>Karkidaka kanji</i>
71.	<i>Solanum nigrum</i> L.	Solanaceae	EN	0.12	Tender leaves are used as <i>Pathila</i> and used in preparation of <i>Karkidaka kanji</i>
72.	<i>Cassia occidentalis</i> L.	Fabaceae	EN	0.16	Tender leaves are used as <i>Pathila</i> and used in preparation of <i>Karkidaka kanji</i>
73.	<i>Cassia tora</i> L.	Fabaceae	EN	0.18	Tender leaves are used as <i>Pathila</i> and used in preparation of <i>Karkidaka kanji</i>
74.	<i>Coccinia grandis</i> L. Voigt	Cucurbitaceae	EN	0.08	Tender leaves are used as <i>Pathila</i> and used in preparation of <i>Karkidaka kanji</i>
75.	<i>Portulaca oleracea</i> L.	Portulacaceae	EN	0.02	Tender leaves are used as <i>Pathila</i> and used in preparation of <i>Karkidaka kanji</i>
76.	<i>Biophytum sensitivum</i> (L.) DC	Oxalidaceae	EN SAR	0.74	Whole plant is used in <i>Niraputhari</i> and <i>Dasapushpa</i> ceremony. Extracted fresh juice of the whole plant is used in preparing <i>Karkidaka kanji</i>
77.	<i>Cardiospermum halicacabum</i> L.	Sapindaceae	EN SAR	0.51	Fresh twig/Whole plant is used in <i>Niraputhari</i> and <i>Dasapushpa</i> ceremony. Extracted fresh juice of the whole plant is used in preparing <i>Karkidaka kanji</i>
78.	<i>Curculiogo orchioides</i> Gaertn.	Hypoxidaceae	EN SAR	0.54	Whole plant is used in <i>Niraputhari</i> and <i>Dasapushpa</i> ceremony. Extracted fresh juice of the whole plant is used in preparing <i>Karkidaka kanji</i>
79.	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	EN SAR	0.5	Whole plant is used in <i>Niraputhari</i> and <i>Dasapushpa</i> ceremony. Extracted fresh juice of the whole plant is used in preparing <i>Karkidaka kanji</i>
80.	<i>Eclipta alba</i> (L.) Mant	Asteraceae	EN SAR	0.62	Fresh twig/Whole plant is used in <i>Niraputhari</i> and <i>Dasapushpa</i> ceremony. Extracted fresh juice of the whole plant is used in preparing <i>Karkidaka kanji</i>
81.	<i>Emilia sonchifolia</i> (L.) DC	Asteraceae	EN SAR	0.46	Whole plant is used in <i>Niraputhari</i> and <i>Dasapushpa</i> ceremony. Extracted fresh juice of the whole plant is used in preparing <i>Karkidaka kanji</i>
82.	<i>Evolvulus alsinoides</i> (L.)	Convolvulaceae	EN SAR	0.54	Whole plant is used in <i>Niraputhari</i> and <i>Dasapushpa</i> ceremony. Extracted fresh juice of the whole plant is used in preparing <i>Karkidaka kanji</i>
83.	<i>Ipomea sepiaria</i> Koen. ex Roxb.	Convolvulaceae	EN SAR	0.62	Fresh twig/Whole plant is used in <i>Niraputhari</i> and <i>Dasapushpa</i> ceremony. Extracted fresh juice of the whole plant is used in preparing <i>Karkidaka kanji</i>
84.	<i>Vernonia cinerea</i> (L.) Less.	Asteraceae	EN SAR	0.46	Fresh twig/Whole plant is used in <i>Niraputhari</i> and <i>Dasapushpa</i> ceremony. Extracted fresh juice of the whole plant is used in preparing <i>Karkidaka kanji</i>
85.	<i>Pseudarthria viscida</i> (L.) Wight & Arn.	Fabaceae	EN EM	0.64	Root of the plant is used as one among <i>Dasamoola</i> . Root is also used in preparing <i>Karkidaka kanji</i> and <i>Nadee kashaya</i>
86.	<i>Desmodium gangeticum</i> (L.) DC.	Fabaceae	EN EM	0.64	Root of the plant is used as one among <i>Dasamoola</i> . Root is also used in preparing <i>Karkidaka kanji</i> and <i>Nadee kashaya</i>
87.	<i>Solanum anguivi</i> Lam.	Solanaceae	EN EM	0.64	Root of the plant is used as one among <i>Dasamoola</i> . Root is also used in preparing <i>Karkidaka kanji</i> and <i>Nadee kashaya</i>
88.	<i>Solanum virginianum</i> L.	Solanaceae	EN EM	0.64	Root of the plant is used as one among <i>Dasamoola</i> . Root is also used in preparing <i>Karkidaka kanji</i> and <i>Nadee kashaya</i>
89.	<i>Tribulus terrestris</i> L.	Zygophyllaceae	EN EM	0.64	Root of the plant is used as one among <i>Dasamoola</i> . Root is also used in preparing <i>Karkidaka kanji</i> and <i>Nadee kashaya</i>

(Contd.)



Table 3 — Plants used in *karkidakacharya* (Contd.)

S. N.	Botanical source	Family name	Categorization	UV	Documented uses
90.	<i>Aegle marmelos</i> (L.) Correa	Rutaceae	EN EM	0.64	Root of the plant is used as one among <i>Dasamoola</i> . Root is also used in preparing <i>Karkidaka kanji</i> and <i>Nadee kashaya</i>
91.	<i>Gmelina arborea</i> Roxb.	Lamiaceae	EN EM	0.64	Root of the plant is used as one among <i>Dasamoola</i> . Root is also used in preparing <i>Karkidaka kanji</i> and <i>Nadee kashaya</i>
92.	<i>Premna serratifolia</i> L.	Lamiaceae	EN EM	0.64	Root of the plant is used as one among <i>Dasamoola</i> . Root is also used in preparing <i>Karkidaka kanji</i> and <i>Nadee kashaya</i>
93.	<i>Stereospermum chelonoides</i> (L.f.) DC.	Bignoniaceae	EN EM	0.64	Root of the plant is used as one among <i>Dasamoola</i> . Root is also used in preparing <i>Karkidaka kanji</i> and <i>Nadee kashaya</i>
94.	<i>Oroxylum indicum</i> (L.) Kurz	Bignoniaceae	EN EM	0.64	Root of the plant is used as one among <i>Dasamoola</i> . Root is also used in preparing <i>Karkidaka kanji</i> and <i>Nadee kashaya</i>
95.	<i>Cinnamomum verum</i> J.Presl.	Lauraceae	EN	0.18	Dried bark is used in preparing <i>Karkidaka kanji</i>
96.	<i>Cinnamomum tamala</i> I (Buch.-Ham.) T.Nees & Eberm.	Lauraceae	EN	0.12	Dried leaf is used in preparing <i>Karkidaka kanji</i>
97.	<i>Mesua ferrea</i> L.	Calophyllaceae	EN	0.16	Dried flower is used in preparing <i>Karkidaka kanji</i>
98.	<i>Piper retrofractum</i> Vahl.	Piperaceae	EN	0.12	Dried fruit is used in preparing <i>Karkidaka kanji</i>

(ethnonutritional, ethnomedicinal and sacred religious aspects), some rituals found interrelated.

### 1 *Karkidaka sankranthi*

Sankranthi word indicates the shift of sun from *Miduna rasi* (gemini zodiac) to *Karkidaka rasi* (cancer zodiac) also the shift from *aadana* to *visarga kaala*. The ritual starts a day before the commencement of *Karkidaka* month *i.e.*, on the eve of *Karkidaka*. As a part of this ritual, houses are cleaned properly, garbage collected and disposed off that evening. The house members take the collected garbage and circambulate their respective houses thrice before they discard it. This cultural practice is mainly performed in central Kerala. There are diverse forms of *Karkidaka samkranthi* in different places with different names. The basic intention of all the rituals is to observe personal and surrounding hygiene.

### 2 *Kaliyanu kodukkal/ kaliyanu vaykkal* (Offering *Kaliyan*)

This ritual is performed along Malabar region and northern parts of Kerala. On the eve of *Karkidaka* or on the last day of Malayalam month '*Midhuna*', this ritual is performed in order to get the blessings of God "*Kaliyan*". *Kaliyan* is regarded as a fierce God of *Karkidaka* who is depicted with huge, fierce round eyes, protruding bloodshed tongue with long canine tooth. There is a belief that if one does not satisfy the God *Kaliyan* well, it will result in consequences.



Fig. 2 — Models prepared in *Kaliyanukodukkal*

"*Kaliyan kopichal Karkidakam kalangum*" and prosperity is the outcome of his blessings. These rituals begin towards the end of the day, when the house and its surroundings are cleaned properly. Different type of models related to agriculture like ox, plough, yoke, hoe, ladder, cow shed etc., are prepared out of leaves of jackfruit, banana, tender leaves of coconut and arrow root (Fig. 2). The plantain stem and the midrib of coconut leaf also aids in preparing these models successfully. These models are placed in a banana leaf and put beneath a jackfruit "*Kaliyan plavu*" grown in south-western corner of house



(*Kannimoola*), after circumambulating the house for 3 times. Food prepared out of raw jackfruit and its seeds (*Chakka puzukku*), cooked rice, water in *kindi* (a type of brass vessel), *chiratta kanal* (burned pieces of coconut shell), *Choottu pandam* (lighting facility using dried coconut leaves) are also placed along with this models (Fig. 3). A person is decorated as God *Kaliyan* and children follow him during the march, sprinkling cow dung water ahead and singing songs like

“*Kaliya kaliya kooi kooi  
Chakkem mangem konde thaayo  
Aala nirachum pashukale thaayo*”

literally means hey *Kaliya*, please give as back all the crops like jackfruit, mango etc., and fill our cow sheds with lot of cattles when you go back. Also sing “*Kaliyano kaliyan kaniyane Bhagavan*” oh God of *Karkidaka* please do bless us.

### 3 *Chettaye odikkal* (drag *chetta* or *Jyeshtha* out of home)

This ritual begins on *Karkidaka sankranthi* with loud screams “*Chetta po Bhagavathi vaa*” by group of family members and children headed by senior woman of that house. In this ritual all the old and unused things are placed in cracked pot or a torned sieve (*muram*). Along with that three type of coloured cooked rice boluses like black with charcoal, yellow with turmeric and red with chilli powder are put inside the sieve/pot along with *gurusi* (lime and turmeric mixed to get red colour) (Fig. 4). By the end of the day, all these things and an old broom is taken



Fig. 3 — *Kaliyanukodukkal* ritual

and rotated around the house for 3 times, saying the slogan loudly. And the person who heads the group dumps these things somewhere outside the house. After that she takes bath and lights a lamp in the porch (*veranda*) symbolizing the presence of God of prosperity ‘*Sreebhagavathi*’.

There is a different version in the region of Thrissur, according to them, along with unused things placed in the cracked pot, cooked meat is also placed instead of tri coloured rice boluses. And there will be one person who symbolizes *Chettabhagavthy*, rather an outsider. The ceremony involves the little ones chasing ‘*Chetta*’ the goddess of poverty raising slogans with an old broom and cow dung water, which is sprinkled over *Chetta*, when she attempts to enter through the closed doors of the house. After the ritual, the person who performed as *Chetta*, takes a bath and elder woman of the family lights up the lamp in the porch. As a token of gratitude food feast is arranged for the performer symbolizing the person as *Sreebhagavathi*. This eliminates all poverty and ill-fates of *Chetta* and welcomes prosperity and wealth of *Sreebhagavathi*.

### 4 *Sheepothi orukkal* (Decorating *sheepothi*)

*Shee/ sri* means auspicious and *pothi* is packets, *shepothi* is the symbol of prosperity and wealth. This ritual is performed in northern and central parts of Kerala with slight variation. *Sheepothi orikkal* is performed during the whole month starting from *Karkidaka* 1<sup>st</sup>. Rituals starts from bathing before breaking of dawn. Water is taken in *kindi* (traditional copper vessel) and placed it in porch along with basil



Fig. 4 — Coloured rice in *Chettaye odikkal* ritual

leaves, one plant among *dasapushpa* (10 flowers with definite medicinal use) or *dasapushpa* as a whole, cow dung ashes (*bhasma*) in foots of *nilavilakku* (lighted brass lamp) and all these have to place above a clean wooden piece (Fig. 5). In the evening, the basil leaves are wrapped along with ashes and placed on the ceiling. There is a concept that goddess of poverty gets trapped in *sheepothi*. On final day of the month all these packets are collected in clay pot and dumped in backyard. There is a slight difference in practice is observed in central Kerala this ritual is also called as *Sheepothi vaikkal/ sreebhagavathi vaikkal/Lekshmikku vaikkal*. Here there is no preparation of the *sheepothi* packets. Some also include all or 8 auspicious things, *Ashta lekshmi* (mirror with a short handle to hold (Vaal kannadi), betel, arecanut, husked rice, sandalwood, casket of vermilion, holy book, gold) for *Sheepothi vaikkal*. *Ashta lekshmi* (eight auspicious things) is different in different places.

#### 5 *Kalichiyē kalayal/ kalichiyē adichirakkal* (Draging *Kalichi* out)

*Kalichi* is the Goddess who represents misery and poverty. This ritual is performed at the end of *Karkidaka* month. Rituals begin towards the end of the day after cleansing the house and its surroundings; waste along with *sheepothi* is kept in a broken pot along with old broom and broken sieve These are thrown outside symbolizing Goddess *kalichi*. This custom is mainly practiced in Malabar region as a part of welcoming of the month *Chingam*.

#### 6 *Aadi kalayal/ andu aruthi* (End of the year in Malayalam calender)



Fig. 5 — *Sheepothi orukkal* ritual

This ritual is similar to that of *kalichiyē kalayal* but with a different name in Southern Kerala mainly in Trivandrum district. *Aadi* is the Tamil name of *Karkidaka* and *aandu aruthi* means the end of the year.

#### 7 *Nira puthari/ illam nira*

Just after the *Karkidaka vaavu*, farmers carry newly reaped paddy spike bundles on head and circambulate the temple as a gratitude to get good yield in the forthcoming months. During the ritual prosperous slogans are raised “*Nirayoo nira. Illam nira, vallam nira, vatti nira, kotta nira, pathayam nira nirayo nira*”, *Nira nira poli poli* let everything fills with wealth let the home, all type of basket, granary etc., fills with grain throughout the year. The reaped spikes are taken inside by the temple priest and after offering it to the deity, given back to devotees. Later these spikes are hanged in front of house ceilings with a belief to attract prosperity. Several attractive figures are made out of spikes like ornamental ceiling, parrot etc., Along with the paddy spikes other twigs of plants such as *Kanjiram (Strychnos nux-vomica L.)*, *Plavu (Atrocarpus heterophyllus Lam.)*, *Vellila (Mussaenda frondosa L.)*, *Vattaparu (Clerodendrum infortunatum L.)*, *Mula (Bambusa spp.)*, *Arayaal (Ficus religiosa L.)*, *Peraal (Ficus benghalensis L.)*, *Mavu (Mangifera indica L.)* and *Dasapushpa* are tied as bundle in temples.

#### 8 *Aadi vedan / Kutti theyyam* (a special traditional art of the month)

These are special theyyam performances during the month of *Karkidaka* in Malabar region. *Aadivedan* is considered as fortunate, who comes with prosperity and wealth. Although named as *aadi vedan theyya*, *aadi* and *vedan* are different terms. Where *aadi* is performed by Vannar community and *vedan theyya* is performed by Malayar community. Normal theyyaam is performed during the festival season and month of *Karkidaka* is an offseason. At that time, children under the age of 14 years perform *kuttitheyyam/aadi vedan* The performers visit all the homes of that locality along with a *chenda* (a type of percussion instrument) striker. On hearing the sounds of *chenda* offerings like rice/paddy (*Ari/Nellu*), coins etc are arranged. After three rounds around the house, *kutti theyyam* gives away *prasada* made of turmeric and rice. On leaving that house *kaaryakkar* (one who accompanies *kutti theyyam*) pour *gurusi* water to the south corner of the house after sprinkling the same on

all members of the house, for the purpose of killing evil eyes. The closing ceremony of *kutti theyyam* is called *mudiyazhikkal* is performed on *Karkidaka sankrama*.

#### 9 *Karkidaka vaavu or Pitr darpana* (Offerings to forefather)

*Uttarayana/ aadana kaala* is explained as day of Gods and *Dakshinayana kala* as night of Gods. So *Karkidaka* becomes *devasandya* (Twilight of God). *Karkidaka vaavu* is a ritual to pay homage to ancestors. As per this ritual, various mantras are chanted with the priest leading the chant. Dried cooked endosperm of *Oryza sativa* L. (*Pacheri*), extract of *Saccharum officinarum* L. (*Sarkara*), fresh fruits of *Musa paradisiaca* L. (*Pazam*), dry seeds of *Sesamum indicum* L. (*Ellu*), powder of heart wood of *Santalum album* L. (*Chandanam*), twig of *Aerva lanata* (L.) Juss.ex. Schult. (*Bali poovu*), fresh leaves of *Desmostachya bipinnata* (L.) Stapf (*Darbha*) along with honey and ghee are used in this ritual. These rituals are done beside a water body. A day before this ritual, the one who performs the ritual observes a fast or *orikkal* (either take food prepared with rice for one meal only or take only one meal) a type of intermittent fasting.

#### 10 *Pilleronam/ kunjonam* (Pre Onam festive)

Like the word expresses, this is a custom celebrated by children in thiruvonam (star) of *Karkidaka* before the commencement of actual thiruvonam. There is a belief that hurdles in the *Karkidaka* dwindled by the prayers of the children, as God pays heed to the prayers of the innocent children. Special *sadya* (food feast) is arranged for the littles. Food prepared out with the little help lending hands is one of the main attractions of *kunjonam*. This ritual is observed among Brahmin communities.

#### 11 *Karkidaka parayana* (Reciting holy books)

*Karkidaka* is also the month of reading spiritual books. In earlier days *Bhagavathi* goddess is praised during the month. But later customs changed to Ramayana (an epic of the story of God Rama) rending tradition. Basic belief of this culture is making one's mind calm by diverting their thoughts to the spiritual part. It is believed that praying to God during this time protects their families as well as crop from natural disasters and epidemics. After observing

surrounding and personal hygiene, people recite holy book in front of lighted lamp.

#### 12 *Muppettu velli* (Blessed first friday)

*Muppettu velli* is the first friday of the month. Reading spiritual books, putting henna (*Lawsonia inermis* L. leaf paste) on hands and making special dishes consisting of 10 leaves are the important practices on *mupettu* Friday. Application of henna during the whole month is also observed in some places (Thrikkakkara, Kochi). This practice is not common in southern parts of Kerala.

#### 13 *Karkidaka kuri* (Putting medicinal tika on forehead)

During the month of *Karkidaka* married women used to wear paste of *mukkutti* (*Biophytum sensitivum* (L.) DC.) in between their eyebrows. There is a belief that this will enhance their concentration power and forbearance. In some places (Koovapady, Ernakulam) females of all ages wear this paste. *Mukkutti kuri thodal* is also important in *Dhanu Thiruvathira* amid the Brahmin community.

#### 14 *Oushada seva* (Medicine consumption ceremony-processed ghee)

This is mainly practiced in central Kerala and places adjacent to Dhanwanthri (God of Ayurveda) temples eg.: Koovapady of Ernakulam district, Nelluvayi of Thrissur district. A special preparation of ghee is given as *prasada* to be taken orally. The main ingredient of this *prasada* is *koduveli* (*Plumbago* spp.) along with other ingredients. In some places specifically blue variety of *Koduveli* (*Plumbago auriculata* Lam.) is used e.g.: In Nelluvayi temple Neelakoduveli collected from "*Machanu*" hills are used. Special type of collection practice is also followed during collection. *Oushada seva* is practiced at the beginning or last half of *Karkidaka* i.e., on *Karidakam*<sup>16</sup>. Those who are taking this *prasada* are restricted to take non veg during that day and day before. *Oushada seva* is consumed aiming good appetite, immunity modulation and better physical strength.

#### 15 *Nadee kashaya seva* (Medicine consumption ceremony- medicated decoction)

*Nadee kasaya seva* is mainly practiced in Malabar region (North Kerala). This is medicated decoction consumed during the month for 7/ 21/ for the whole month. Although a definite ingredient is mentioned as

Nadee Kashaya in 'Sahasrayoga' a renowned Malayalam text, on documentation different ingredients and different methods of preparation was explored. Among them most recorded method was putting a cloth packet filled with crushed medicine in water and boil it. There will be continuous supply of heat maintained optimally by providing rice awn heat as fuel. This medicinal packet is discarded only on the 3<sup>rd</sup> or 4<sup>th</sup> day. Water is replaced daily. Hot decoction can be consumed once/twice daily according to one's physic. During the consumption of decoction one should follow strict vegetarian diet.

16 **Marunnu unda/ uluva unda seva** (Medicine consumption ceremony- medicated bolus)

This preparation is made from about 10-24 number of medicines in which a great amount of *uluva* (Fenu greek) is added, hence has the name *uluva unda*. This sweet delicacy made along with jaggery is also consumed as postpartum care. *Marunnu unda* is taken twice daily for a period of 7 days. Children are restricted to use this in some places. This medicine provides immunity, good appetite, and subsides all types of joint disorders. Practice of *marunnunda* is observed commonly in central and northern Kerala regions.

17 **Mukkudi seva** (Medicine consumption ceremony- medicated buttermilk)

Mukkudi is a kind of medicated buttermilk made by adding certain medicinal herbs like Adaykkamaniyan (*Sphaeranthus indicus* L.), Koduveli (*Plumbago indica* L.) etc., which was prescribed for enhancing the probiotic effects in human beings by the traditional physicians of Kerala. This fermented drink is considered as digestive, carminative and an effective preventive drink to check the tendency of increase of cholesterol.

18 **Karkidaka pathu-** A practice of consuming 10 leaves, 10 roots (*dasamoola*) and 10 flowers (*dasapushpa*)

The practice of consuming 10 edible leaves is mainly observed in central and northern Kerala and some parts of southern Kerala. Long ago, for the farming community of rural Kerala, the month of *Karkidakam* with its torrential rains was a period of confinement and forced rest. Hence, they collected and stored rice and grains even before the rainy season. And during the rainy season they procured easily available leafy vegetables from their home premises with or without the knowledge of medicinal values.

This practice is still continuing in whole Kerala understanding the benefits of these 10 leaves. These are consumed as *Thoran* or *Uppery* (South Indian cuisine). Also these leaves are added to the medicated gruel consumed specially during *Karkidaka*.

*Dashapushpa* (10 flowers) are very much important in the month of *Karkidaka*. These are used to tie in hair as it is considered auspicious. Juices expressed from *dasapushpa*, are used to make *Karkidaka kanji* (medicinal gruel). Also *dasapushpa* was given importance in ceremonies like *sheepothi vaikkal*.

Similar ten roots (*dasamoola*) are also used in preparing *Karkidaka kanji* (medicated gruel). Practice of *dasapushpa* and *dasamoola* are available in ayurveda classics<sup>8</sup>. But there is no such reference regarding the ten leaves, and therefore these 10 leaves are not a fixed one, it changes with geography according to obtainability<sup>9</sup>.

19 **Karkidaka kanji** (Medicine consumption ceremony- medicated gruel)

*Karkidaka kanji* consists of boiled cereals and herbs which is highly digestive (*Deepana*) and carminative (*Pachana*) in nature. Along with Njavara rice (*Oryza sativa*), 12 to 24 types of medicinal herbs are used in preparing this gruel. There are various recipes of *Karkidaka kanji* which are followed in different parts of Kerala.

20 **Karkidaka lehya** (Medicine consumption ceremony- medicated linctus)

*Karkidaka lehya* (medicinal linctus) is observed in Malabar regions. This sweet preparation is made out of lot of medicines which claims to provide better immunity, body strength and good appetite. The ingredients for the preparation of *Karkidaka lehya* and *marunna unda* are almost similar with some regional differences.

21 **Karkidaka chikitsa** (Medical treatment)

During the period of *Karkidaka*, forced rest due to heavy rain is a chance to undergo a course of ayurvedic treatment among higher social class groups. It helps in regaining and maintaining physical strength throughout the year along with better immunity. Mainly the treatments include *Panchakarma* (a course of five type of Ayurvedic treatment intended in body cleansing) therapy and *Rasayana chikitsa* (Antiageing therapy)

22 **Karkidaka charya in animals** (Medicine consumption ceremony- in animals)

To live life fully a man should bond with nature, nurture it and it will love you and nurture you back. *Aanayoottu* is one such culture binding the concomitance bonds.

### ***Aanayoottu***

Elephants form an essential part of Kerala culture. During the time of *Karkidaka* as there is no auspicious ceremonies or rituals held in temples, elephants get a good time to follow the full course of ayurvedic treatments. So this time is utilized to rejuvenate it's health by giving special types of medicines, food preparation and complete rest. During *aanayoottu* ceremony devotees get an opportunity to feed elephants with sugarcane/ jaggery, cucumber, coconut leaves, palm leaves etc.,

### ***Moori marunnu***

The agarian nature of Keralites gives good care of their basic income. Bull was extensively used in their fields in days of yore. *Moori marunnu* is a special medicinal preparation given to oxen to improve

their health and vitality and thereby prepare them for hard work in later months. This culture is getting faded by the dwindling of agarian culture and paddy fields.

### **Discussion**

The elementary belief of considering God in subtle things in universe is evidently visible in most of the traditional rituals, particularly in *Karkidaka ritual*. Earlier Keralites along with their health considered the health of the fellow four legged ones and mutually benefited. All these rituals starting from *Karkidaka samkranthi* (last day of month of midhuna) to *kalichiye kalayal* (last day of *Karkidaka*) particularly aims in personal as well as surrounding hygiene. These rituals tied along with beliefs forces earlier people to follow a strict sanitization. Usage of cow dung water, ash, 10 flowers, basil leaves, sandal wood, turmeric etc., during the month of heavy rain and epidemic, helped a lot in maintaining their immunity (Table 4).

Table 4 — Relevance of *Karkidakacharya*

Cultural practices	Day of practice	Relevance
<i>Karkidaka</i> sankranthi	Last day of month of Midhuna	Aims in personal as well as surrounding hygiene, thereby decreasing the chances of irruption of vector borne epidemics (chickunguniya, dengue). The ritual tied along with belief, forces people to follow a strict sanitization/dry day, further preventing them from monsoonal epidemic havoc.
Offering <i>Kaliyan</i>	Last day of month of Midhuna	Preparing crafts during the ritual 'offering <i>Kaliyan</i> ' makes the child curious and increase their ability of imagination. A healthy competition between the children, in order to make one's own craft better, enhances their creativity further.
Draging <i>Chetta</i> out of home	Last day of month of Midhuna	Bringing auspiciousness to home, gives a state of confidence and balance mental health from the chaos of <i>karkidaka</i>
Decorating <i>sheepothi</i> and <i>Sreebhagavathi</i>	Whole month of <i>karkidaka</i>	Ensure cleanliness, along with spiritual belief maintains proper mental health. Wearing and intake of religious offering made up of turmeric better act well as an antibacterial. Pouring of <i>gurusi</i> preparation made out of turmeric and calcium hydroxide act as potent antibacterial than turmeric alone. Studies have proven increased efficacy of turmeric as antibacterial when combined along with calcium hydroxide <sup>9,10</sup> .
Draging <i>Kalichi</i> out	last day of month of <i>karkidaka</i>	Maintains mental fitness. Religious intermittent fasting helps in maintain proper health.
End of the year in Malayalam calender	last day of month of <i>karkidaka</i>	Fun games invigorates children, also gives them responsibility by engaging them in household works.
Nira puthari/ illam nira	Just after the <i>karkidaka</i> vaavu	Engaging in spiritual belief enhances their state of mental consciousness and strength.
Traditional art form specially performed in <i>karkidaka</i>	After 10 <sup>th</sup> or 16 <sup>th</sup> day of <i>karkidaka</i> or from 1 <sup>st</sup> day of the month onwards	
Offerings to forefather	Black moon day in month of <i>karkidaka</i>	
Onam festival of children	Thiruvona (star) of <i>karkidaka</i>	
Blessed friday	First friday of the month	
Reciting holy books	Whole month of <i>karkidaka</i>	

(Contd.)



Table 4 — Relevance of *Karkidakacharya*

Cultural practices	Day of practice	Relevance
Putting medicinal tika on forehead	1 <sup>st</sup> 7 days or Whole month of <i>karkidaka</i>	Tika applied in Sthapani marma (glabella) protect from losing energy and increases concentration. Antiepileptic, antibacterial, antidiabetic, antilipidimic, antiageing, immunity enhancing, antiviral, anxiolytic, memory enhancing effects of Biophytum leaves has been proven <sup>13</sup> . These data point out the effect of Biophytum in maintaining hormonal balance of pituitary. Though, clinical evidence is needed to firm the theory.
Hair decoration with ten medicinal flowers	Whole month of <i>karkidaka</i>	Ensure personal hygiene. These 10 herbs are proven for their antiinflammatory, antiarrhythmic, antibacterial, antidiabetic, antilipidimic, antidiarrheal, anti-cancerous, antirheumatic, antifungal, anxiolytic, antipsychotic etc <sup>12</sup> .
Hand and foot decoration with henna leaves	grinded First Friday of the month or Whole month of <i>karkidaka</i>	Humid and damp weather give a positive environment for the growth of bacteria, virus and fungi resulting in Athlete's foot, Ringworm infection, Tinea capitis etc can be prevented by the application of henna leaves <sup>13</sup> .
Medicine consumption ceremony- medicinal ghee	<i>Karkidaka</i> 16	Most of herbs used in medicated preparations are proven antibacterial, antidiabetic, anti lipidimic, antiageing, immunity enhancers, antirheumatic, digestants, carminatives, antiviral, anxiolytic, memory enhancers <sup>14</sup> .
Intake of medicinal gruel	For a period of 7 or 11 or 13 or 21 or 31 days in month of <i>karkidaka</i>	
Intake of medicinal decoction, bolus and linctus	For a period of 7 days or Whole month of <i>karkidaka</i>	
Intake of ten medicinal leaves as food	First Friday of the month or Whole month of <i>karkidaka</i>	
Intake of special medicines made out of buttermilk		'Mukkudi', enhances the probiotic effects. Has proven antimicrobial, anticancerogenic, antihypertensive, antiulcerative, antitumour, antidiabetic, cholesterol-lowering and immunomodulatory activities <sup>15</sup> . When supplemented with spices and other flours, fortified buttermilk ( <i>Mukkudi</i> ) become superior compared to sole buttermilk due to better sensory properties and richer nutritional composition <sup>16</sup> .
Preventive and rejuvenating ayurvedic treatments	For a period of 7 or 14 or 21 or 28 days in month of <i>karkidaka</i>	Enhances immunity, ensure internal body purification and protect from ageing factors.
Ceremony of giving food and medicines to elephant, ox and buffalos	Food giving on <i>karkidaka</i> 1 <sup>st</sup> Medicine is given throughout the month	Enhances the strength of the animals. And help them productively work on farms for the next year.

Global warming and other serious environmental issues resulted in drastic climate change. Now a day, Kerala is not getting enough rainfall as earlier during *Karkidaka*. Change in climate, economical variation and change in attitude towards agriculture ensuing the deterioration of this ethnic practices. The practices like *kalichiye kalayal* and *moori marunnu* are getting diminished. *Kaliyanu kodukkal* and *chettaye odikkal* are not practicing currently. Efforts must be done to conserve this kind of region specific, season specific ethnic practices. The practice of consumption of different forms of medicines is practicing widely in different parts of Kerala. Incorrect practices, preparation and consumption was noted during documentation. Awareness has to be given to avoid this kind of practices and encourage consultation with an Ayurveda doctor to ensure person specific

*Karkidaka* medicine considering the person's digestive fire, mental and physical physic. Each ritual is applicable for further detailed quantitative analysis with a large sample size.

### Conclusion

Among the 22 seasonal practices recorded under *Karkidaka charya* in Kerala, most of the practices are observed as a caution for upcoming pandemic in the severe rainy month. About 98 plants are recorded to be utilized during *Karkidaka charya*. Systemic documentation of this invaluable ethnic knowledge is a need of the hour, as these rituals are declining. Furthermore, clinical studies have to be performed to find out the role of these nutraceuticals and other factors in maintaining health during the month.

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### Conflict of Interest

Authors declare that they do not have conflict of interest.

### Authors' Contributions

RRG conceived the idea, investigated and wrote the manuscript. KR and ISSupervised and done manuscript correction and editing. All the authors discussed the results and contributed to the manuscript.

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