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MOON DIVINE REMEDIAL PLANTS AND ITS DOCTRINE OF SIGNATURES – A BOTANICAL INSIGHT

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Abstract: This study has been undertaken to investigate the moon divine remedial plants mentioned in Vedic astrology, western astrology and traditional Indian medicine system to figure out the doctrine of signatures. The study of 90 moon divine remedial plants traces a rational basis relationship of cosmo-biological humor kapha, water element, moist habitat, non-arid geographical habitat, elliptic to ovate leaf shape, soft stemmed plants, perennial or annual life span, useful parts nature and so on of moon divine remedial plants and validate that the plants were assigned to moon based on the plant morphology, biological humor, ecological parameters and active properties doctrine of signatures.

Index Terms **– Astrology, Divine Remedial Plants, Moon, Vedic, Traditional Indian Medicine**

I. INTRODUCTION

Plants were related to celestial bodies in traditional Indian medicine (Ayurveda, Siddha and herbal) and astrological system[1-11] as a remedy for treating debilitated, afflicted or malefic planet and diseases associated with concerned planets in a person's horoscope [7,12-27] and are referred as divine remedial plants (DRPs). DRPs for planets was gradually created over the millennia from the dawn of humankind and the knowledge acquainted about plants either for food or to treat disease have been transmitted, received, assimilated and reworked by all the cultures that flourished are preserved till date through oral traditions for several centuries and then by ancient sages, astrologers, ancient books, scriptures and treatises[2-29]. DRPs had been in wider practice from time immemorial to eliminate or escape from obstacles faced by humans in traditional medicine system (TMS) and astrology is now under critically endangered status owing to several limitations. The prime reason is most of the traditional medicine preparation men are not adhering to the astrological principle of herbal medicine preparation. They also lack knowledge about the type, quality, selection and collection of herbs that balance out the energy system of human life and the mechanism of energizing or empowering the herbs with mantras[18-31]. Secondly, more than 98% of present astrologers lack complete knowledge about herbs so they suggest all sorts of high cost remedial measures (*yantras*, tantric, havana, making donations, wearing rudraksha and gems) and not low cost most effective herbal remedies (planting plants, watering plants, keeping specific plants in indoor and outdoor, wearing and keeping plant parts, consuming plant as food and medicine). Thirdly, the degree of effectiveness also varies with different astrologers and traditional healers based on their experience about the concepts, problems and remedies. Fourthly, astrologers and healers begin to practice as a business for making money without training. In addition, the ancient Vedic and western religious, medicinal and astrology books mentioned only the plant name and its associated planets and not about the physical basis of plants link to planet. This ancient herbal practice can be restored only by unraveling the hidden secrets about DRPs-planets correspondences. There is no evidence of science based study about the traditional belief or supernatural power of planet associated DRPs either in astrology or in ayurvedic and siddha medicine system[1]. Hence the concept of DRPs practices are not understood precisely by the people and viewed as superstition by scientific community though the concept is an essential part for TMS regarding plant collection, medicine preparation and administration. Moreover, it is of interest to unravel whether the astrological correspondences of DRPs is purely imaginary and arbitrary or has got some basis of physical link behind. The scientific and pragmatic understanding of DRPs relationship is more meaningful by the synergistic study of astrology and botany[1, 4, 6,8-11,14,23-25,32-34] to figure out the correspondences and its role in TMS and astrology which has never touched by the scientific community. Therefore a systematic study of DRPs exploration, compilation and analysis is highly essential to decode scientifically the underlying facts that throw light on the planets DRPs correspondences. The connection between planets (macrocosm), human body (microcosm) and plants in therapeutic can be unfolded step by step viz., 1. Correlating DRPs botanical traits with planets characteristic features, 2. Analyzing DRPs botanical traits with friendly planets characters, 3. Pharmacological therapeutic curative properties analysis of DRPs and planets associated diseases, 4. Pharmacological analysis of DRPs and friendly planets associated diseases. To assess the scientific validity, the entire spectrum of DRPs usage in eastern and western world should be studied. Though there are 9 and 12 planets respectively in Vedic and western astrology, the visible effects of lunar phases of moon on environment and biological organisms is well understood than other planets.[35] Moreover it is a second source of light other than the sun and nearer to the earth compared to other planets. Keeping this in view, the present attempt is made to trace certain salient features of various divine moon remedial plants (DMRPs) in a botanical perspective and to correlate that knowledge with later findings to identify the connecting features.

II. METHODOLOGY

2.1 Literature Survey of DMRPs

The secondary data has been collected through systematic DMRPs literature survey during December 2019 to June 2021. Initial information was gathered from various literary resources like religious, Vedic, ancient and modern astrology, Ayurveda and Siddha books followed by through intensive electronic resources. Electronic resource includes astrology relevant e-journals, e-books, e-reports, e-newspapers, e-magazines, Institutional repositories, electronic databases, e-thesis, websites and dissertations. The search keyword includes plants in combination with planets, astrology, Ayurveda and Siddha. Data collected included plant species assigned to moon used to pacify the malefic effects in astrology and to treat diseases in TMS. Excluded other planets and sun plants used in astrology.

2.2 Botanical study of DMRPs

The systematic enumeration of DMRPs, its floristic composition and scientific name validation was made with utmost care in order to avoid faulty identification and arranged according to the phylogeny and then in alphabetic order of the family. The species correctness and family names were checked using the http://www.theplantlist.org/. The scientific names alone are included in the table due to imprecise nature or confusions in vernacular and common names etymology. Ecological, environmental and morphological parameters namely antiquity, habitat, nativity, geographical habitat type, life-span, Raunkiaer life-form with subtype, leaf physiogamy (spectra, lamina shape, leaf habit), growing seasons (distribution of plants in the summer, rainy and winter seasons), Flower colour, plant uses, parts used, global conservation status, species tolerant level, native distribution and symbiotic association [36-38] were studied to unfold the DMRPs metaphysical link to moon and then to understand the physiological and ecological role in classifying remedial plants associations.

III RESULTS AND DISCUSSION

The DRPs used for sustainable maintenance or neutralizing malefic planetary combinations as reported in Vedic, western and TMS literature shows the moon was associated with 90 species[1-31,34,36].

3.1 Antiquity of DMRPs

Life is powered by plants on earth. Humans are connected and intertwined with plants and natural forces as mankind depends on plant for primary needs. Table 3.1 shows that the DMRPs evolved much before the old world and includes *Chondrus crispus* Stackh (originated 600 million years ago (mya)), the more primitive ancestral ferns *Botrychium lunaria* (L.) Sw. and *Ophioglossum californicum* Prantl evolved as far back as 430 mya[39-40], *Platanus occidentalis* L. between 145.5 and 65.5 mya in Cretaceous period, *D. cinnabari* evolved during Neogene or Mio-Pliocene geological period (23 to 2.6 mya), *Ulmus rubra* Muhl. of Miocene geological period, *T. arvense* an archaeophyte, a living fossil *D. involucrata*., *Aloe vera* (L.) Burm.f. evolved 16 mya, plants cultivated 10000 years ago (*Musa paradisiaca* L. and *H. vulgare* L.) and so on. This supports the human use of plants at the earliest level for food and medicines. The knowledge about plants curative power came from observing animal use of plants[41]. The ancestor's deep understanding about cyclic natural events and climatic variations made them to believe in supernatural forces. Supernatural forces are galactic cosmic radiations originate from sun and outside of the solar system may be either positive or negative or neutral depending upon the intensity, time period, electron to proton ratios and acceleration of particles which affect abiotic and biotic components on the earth. The prehistoric medicine men named the negative and positive radiations respectively as evil and holy spirit. In addition, they thought to control the natural phenomenon by providing plants as a physical link. Hence plants were connected to celestial bodies, various reoccurring natural events and spiritual realm and used for forecasting events. Through time and experience man learned to balance or manipulate natural force energies with the help of plants for protection, health, prosperity, love and wisdom that leads to the discovery of most potent DMRPs. Thus prehistoric medicine includes psychic, magic and super natural healing to control the evil effects which pave the way to astronomical, astrological and TMS system dates as far back as 30,000 B.C and reveal cues for when and why the plants were linked with moon and planets.

3.2 Floristic Composition of DMRPs

A total of 90 DMRPs belonging to 83 genera distributed among 56 families (Table 1). It comprises 95.56% of angiosperms (86), 2.22% of non-vascular and vascular cryptogams (2 species each). The non-vascular cryptogams include algae and fungi (1 species (1.11%) each). The pteridophyte was represented by one family and two genera. Angiosperm represents 53 families and 79 genera. Among angiosperms 72 species were represented by dicots (80%) of which 38 were herbs (42.22%) followed by 16 trees (17.77%), 10 shrubs (11.11%) and eight climbers (8.88%) representing 66 genera and 45 families. Monocots were represented by 14 species (15.55 %) of which 11 were herbs (12.22%) followed by two trees (2.22%), shrubs none and one climber (1.11%) representing 13 genera and eight families. Out of the total 56 families, 41 (73.21%), seven (12.50%), three (5.36%), three (5.36%), one (2.0%) and one (2.0%) were respectively represented in ascending array by one, two, three, four, five and nine species. The species were categorized as well (≥5 species, 9 Brassicaceae, 5 Cucurbitaceae), moderately (3-4 species, Compositae, Malvaceae, Asparagaceae, Oleaceae, Rosaceae, Poaceae) and least (1-2 species) represented families. Representation of one thallophyte (1.11%), one saprophyte (1.11%), two ferns (2.22%), 49 herbs (55%), 10 shrubs (11%), nine climbers (10%), and 18 tree (20%) species shows 80% of the DMRPs (72 species) have soft herbaceous stem nature which concurs to the soft, delicate and *sattva* feature of moon. Thus ancient men selected DMRPs by equating the plants and moon nature.

3.3 DMRPs Habitat and Geographical habitat

Table 1 depict the various habitat and geographical habitat types (GHT) of DMRPs. Habitat includes 46.67% moist places (42), 17.77% cool places (16), 8.88% cultivated fields and wet places (8 each), 6.66% water bodies (6), 4.44% shade places (4), 2.22% marshy places and woodlands (2 each), 1.11% sea rocks and decaying liters (1 each). All the observed 90 DMRPs grows of either in temperate (45), subtropical (10) or tropical (35) GHT and not in arid or semiarid places. These two data clearly indicates that all the DMRPs grow best in watery abode, a specialized ecological niche which agrees with the watery element of moon.

Table 3.1 Floristic composition, morphological and ecological analysis of moon remedial plants

S. No.	Remedial plants of Moon	H	N	HT	GHT	LS	RLF		Leaf physiogamy			Seasons			FC	Uses	Parts Used	GCS	ST	Native Distribution
							LF	LF-SD	LSS	LL	LH	S	R	W						
	ALGAE																			
	1. Gigartinaceae (Genus 1, Species 1)																			
1	*Chondrus crispus* Stackh.	Th	N	SR	Te	P	Th	Th-he	Le	Fa	D	A	P	P	R	F-Bg-M	Th	NE	S	M
	FUNGI																			
	2. Agaricaceae (Genus 1, Species 1)																			
2	*Agaricus bisporus* L.	Sa	N	DL	Te-Tr	A	Th	Th-sa	Me	Bu	D	A	P	P	W	F-RR	Fr bd	NE	D	EA
	PTERIDOPHYTE																			
	3. Ophioglossaceae (Genus 2, Species 2)																			
3	*Botrychium lunaria* (L.) Sw	Fe	N	MP	Te	P	Th	Th-Ch	Le	Cr	D	A	P	P	G	M	L	NE	Efz	EA
4	Ophioglossum californicum Pantl	Fe	N	MP	Tr	P	Th	Th-Ch	Le	Ob	D	A	P	P	G	M-MR	L	LR	D	Am
	ANGIOSPERM																			
	Dicot																			
	4. Acanthaceae (Genus 1, Species 1)																			
5	*Andrographis paniculata* (Burm.f.) Nees	He	N	CF	Tr	A	Ph	N-Ph	Me	La	E	A	P	P	W	M-RR	WP, L	LR	S	SA
	5. Apiaceae (Genus 1, Species 1)																			
6	*Pimpinella saxifraga* L.	He	N	MP	Te	P	Ph	N-Ph	Me	El	E	A	P	P	P	M	WP	NEx	D	Eu- WA
	6. Apocynaceae (Genus 1, Species 1)																			
7	*Carissa spinarum* L.	Sh	N	CF	Tr	P	Ph	Mi-Ph	Na	Ov	D	P	P	P	W	F-M	Fr	LC	D	SA
	7. Araliaceae (Genus 1, Species 1)																			
8	*Hedera helix* L.	Cl	N	CP	Te	P	Ph	Mg-Ph	Me	Obo	D	P	P	P	Y	M	Bk , L	NEx	C	EA- WA
	8. Boraginaceae (Genus 1, Species 1)																			
9	*Symphytum officinale* L.	He	N	MP	Te	A	Cr	Bu-Ge	Ma	La	E	A	P	P	W	M	L	NEx	D	EA
	9. Brassicaceae (Genus 7, Species 9)																			
10	*Brassica napus* L.	He	N	CP	Te-STr	A	Ph	N-Ph	Me	Lo	E	A	P	P	Y	F	Se	NEx	Fz	M
11	*Brassica oleracea* L.	He	N	CP	Te-STr	A	Ph	N-Ph	Me	Ov	E	A	P	P	Y	F	L	DD	Fz	Eu
12	*Brassica rapa* L.	He	N	CP	Te-STr	A	Ph	N-Ph	Me	Ob-l	E	A	P	P	Y	F	R, L	NEx	Fz	EA
13	*Crambe cordifolia* Steven	He	N	MP	Te	P	Ph	Mi-Ph	Mg	Co	D	P	P	P	W	F-M	R, L	NE	D	EA
14	*Hesperis matronalis* L.	He	N	CP	WTe-Tr	P	Ph	N-Ph	Me	Ov	E	P	P	P	P	F	L	NEx	D	EA
15	*Lepidium sativum* L.	He	E	CP	Tr	A	The	Ca-The	Mi	Obl	E	A	P	P	W	F-M	Se	NEx	MD	WA
16	*Lunaria annua* L.	He	E	MP	Te	B	Ph	N-Ph	Me	Ov	E	A	P	P	P	F	L	NEx	D	SWA
17	*Nasturtium officinale* R.Br.	He	E	WB	Te	P	Ph	N-Ph	No	Pi	E	A	P	P	W	M	L	LC	D	EA
18	*Thlaspi arvense* L.	He	E	CF	Te	A	Cr	Tu-Ge	Me	La	E	A	P	P	W	M	L	NEx	EFz	EA
	10. Capifoliaceae (Genus 1, Species 1)																			
19	*Aelia grandiflora* (Ravelli ex Andre) Rehder	Sh	N	MP	Te-Tr	P	Ph	N-Ph	Na	Ov	E	P	P	P	W	O	WP	NE	S-Fz	A
	11. Caryophyllaceae (Genus 1, Species 1)																			
20	*Cerastium fontanum* Baumg.	He	E	MP	Te	P	Ch	Su-Ch	Le	Ov	E	P	P	P	W	F-RR	WP, L	NEx	Fr	Eu
	12. Compositae (Genus 4, Species 4)																			
21	*Artemisia vulgaris* L.	He	E	CP	Te-STr	A	Ph	N-Ph	Na	Pi	E	P	P	A	P	M	R	NEx	D	EA
22	*Lactuca sativa* L.	He	N	MP	Te	B	Ph	N-Ph	Me	Obl	D	A	P	P	Y	F	L	NEx	Fz	EA
23	*Matricaria chamomilla* L.	He	N	MP	Te	A	The	Sc-The	Na	Fi	E	A	P	P	W	M	Fl	NEx	D	EA
24	*Senecio candicans* Wall.	He	N	MP	Tr	P	He	Sc-He	Me	Ov	E	P	P	P	Y	M	L	NE	D	In
	13. Cornaceae (Genus 2, Species 2)																			
25	*Cornus florida* L.	Sh	N	WL	Te	P	Ph	Me-Ph	Me	Ov	D	P	P	P	W	T-M	W, B	NEx	D	NAm
26	*Davidia involucrata* Baill.	Tr	N	WL	Te	P	Ph	Me-Ph	Me	Co	D	P	P	P	W	F-T	Fr, W	E	Fr	SEA
	14. Crassulaceae (Genus 1, Species 1)																			
27	*Hylotelephium telephium* (L.)H.Ohba	He	B	MP	Te	P	Ph	N-Ph	Me	Ov	E	P	P	P	P	M	WP, L	NEx	D	EA-Nam
	15. Cucurbitaceae (Genus 3, Species 5)																			
28	*Cucumis melo* L.	Cl	N	CF	WTe-Tr	A	Ph	N-Ph	Me	Ov	E	P	P	A	Y	F	Fr	NEx	D	In-Af
29	*Cucumis sativus* L.	Cl	N	CF	WTe-Tr	A	Ph	N-Ph	Me	Pa	E	P	P	A	Y	F	Fr	NEx	D	SA
30	*Cucurbita pepo* L.	Cl	N	CF	WTe-Tr	A	Ph	Mi-Ph	Me	Ov	E	P	P	A	Y	F	Fr	NEx	D	Am
31	*Lagenaria siceraria* (Molina) Standl.	Cl	N	MP	Tr	A	Ph	Me-Ph	Ma	Co	E	A	P	P	W	F	Fr	NEx	D	Af-A
32	*Lagenaria sphaerica* (Sond.) Naudin	Cl	N	CF	Tr	A	Ph	Me-Ph	Me	Ov	E	A	P	P	W	M	Fr	NE	D	Af
	16. Frankeniaceae (Genus 1, Species 1)																			
33	*Frankenia salina* (Molina) I.M.John.	He	N	SM	Te-STr	P	Ph	N-Ph	No	Ob	E	P	P	P	P	O	WP	NE	Salt	Am
	17. Gentianaceae (Genus 1, Species 1)																			
34	*Gentiana lutea* L.	He	N	CP	Tr	P	Ph	N-Ph	Mg	La	D	A	P	P	Y	M	R	NEx	Fr, D	Eu
	18. Lamiaceae (Genus 2, Species 2)																			
35	*Melissa officinalis* L.	He	D	MP	Tr-STr	P	Ph	N-Ph	Me	Ov	E	A	P	P	W	M-RR	L	NEx	MD	M-EA-Af
36	*Salvia sclarea* L.	He	N	CP	Te-Tr	B	Ph	N-Ph	Mg	Lo	E	A	P	P	P	M-RR	WP	NEx	D	SEEu
	19. Leguminosae (Genus 1, Species 1)																			
37	*Butea monosperma* (Lam.) Taub.	Tr	N	CF	Tr	P	Ph	Me-Ph	Ma	Ov	E	P	P	P	O	M-RR	Fl, Se	NE	D	SA
	20. Lythraceae (Genus 1, Species 1)																			
38	*Lythrum salicaria* L.	He	E	WB	Te	P	Ph	Mi-Ph	Me	La	E	A	P	P	P	F-M	WP, L	LC	MD	EA
	21. Malvaceae (Genus 4, Species 4)																			
39	*Althaea officinalis* L.	He	N	SM	Te-Tr	P	Ph	N-Ph	Me	Obc	E	A	P	P	W	M	R	NEx	D	Af-EA
40	*Malva sylvestris* L.	He	E	MP	Te-Tr	A	The	Ca-The	Me	Pa	D	A	P	P	P	F	L, S	NEx	MD	EA-Af
41	*Sida cordifolia* L.	Sh	N	MP	Tr	A	Ph	N-Ph	No	Co	E	A	P	P	Y	M	R, L	NEx	D	A
42	*Tilia americana* L.	Tr	N	MP	Te	P	Ph	Mg-Ph	Ma	Obo	D	P	P	P	Y	M-T	Wo, L	NEx	S	Am
	22. Meliaceae (Genus 1, Species 1)																			
43	*Swietenia mahagoni* (L.) Jacq.	Tr	N	MP	Tr	P	Ph	Mg-Ph	Me	Obl	E	P	P	P	Y	M -T	Bk, L	E	D	Am
	23. Moringaceae (Genus 1, Species 1)																			
44	*Moringa oleifera* Lam.	Tr	N	MP	Tr	P	Ph	Me-Ph	Na	Tpi	D	P	P	P	W	F	Fr, L	NEx	D	In
	24. Nelumbonaceae (Genus 1, Species 1)																			
45	*Nelumbo nucifera* Gaertn.	He	N	WB	Tr	P	Cr	Rh-hl	Mg	Or	E	A	P	P	W	F-MR	WP	NE	D	In
	25. Nymphaeaceae (Genus 1, Species 1)																			
46	*Nymphaea pubescens* Willd.	He	N	WB	Tr	P	Cr	Rh-hl	Mg	Co	E	A	P	P	W	M-RR	WP	LC	D	In- SEA
	26. Oleaceae (Genus 3, Species 3)																			
47	*Chionanthus virginicus* L.	Tr	N	MP	Te	P	Ph	Me-Ph	Na	Ov	D	P	P	P	W	M	R Bk	NEx	D	Am
48	*Jasminum officinale* L.	Sh	N	MP	Tr	P	Ph	Mg-Ph	Me	Tpi	D	P	P	P	W	M-RR	Fl	NE	D	EA
49	*Ligustrum vulgare* L.	Tr	E	CP	Te-STr	P	Ph	Mi-Ph	Na	Ov	D	P	P	P	W	M-D	WP, L	NEx	D	Eu-NAf-WA
	27. Onagraceae (Genus 1, Species 1)																			
50	*Oenothera biennis* L.	He	N	MP	Te-Tr	B	Ph	N-Ph	No	La	E	P	P	P	Y	F-M	WP	NEx	D	NAm

Table 3.1 Cont.

S. No.	Remedial plants of Moon	H	N	HT	GHT	LS	RLF		Leaf physiogamy			Seasons			FC	Uses	Parts Used	GCS	ST	Native Distribution
							LF	LF-SD	LSS	LL	LH	S	R	W						
	28. Orobanchaceae (Genus 1, Species 1)																			
51	*Rhinanthus minor* L.	He	N	CP	Te	A	The	Ca-The	Na	Ha	E	P	P	A	Y	D-Fd	L	NEx	D	Eu-NAf-WA

	29. Paeoniaceae (Genus 1, Species 1)																		
52	*Paeonia lactiflora* Pall.	He	N	MP	Te	P	Ph	N-Ph	Me	Lo	E	P	P	P	W	M	R	NEx	D	EA
	30. Papaveraceae (Genus 1, Species 1)																			
53	*Papaver somniferum* L.	He	N	SP	WTe-Tr	P	The	Ca-The	Me	Lo	E	P	P	P	P	F-M	Fr	NEx	D	M- EA
	31. Passifloraceae (Genus 1, Species 1)																			
54	*Passiflora incarnata* L.	Cl	N	MP	WTe-Tr	P	Ph	Me-Ph	Me	Pa-l	E	P	P	P	P	M-RR	Fr	NEx	D	SAm- SA
	32. Pedaliaceae (Genus 1, Species 1)																			
55	*Sesamum indicum* L.	He	N	MP	Tr	A	The	Ca-The	Me	La	E	A	P	P	W	F-RR	Se	NEx	D	In
	33. Plantaginaceae (Genus 1, Species 1)																			
56	*Veronica officinalis* L.	He	N	MP	Te	P	Ph	N-Ph	No	El	E	A	P	P	B	M	L	NEx	D	Eu
	34. Platanaceae (Genus 1, Species 1)																			
57	*Platanus occidentalis* L.	Tr	N	MP	Te-Tr	P	Ph	Mg-Ph	Ma	Lo	E	P	P	P	W	F-M -T	WP	NEx	D	Am
	35. Portulacaceae (Genus 1, Species 1)																			
58	*Portulaca oleracea* L.	He	E	MP	Te-Tr	A	The	Su-The	Le	Ov	E	A	P	P	Y	F-M	Wo, L	NEx	D	Co
	36. Primulaceae (Genus 1, Species 1)																			
59	*Embelia ribes* Burm.f.	Sh	N	CP	Tr	P	Ph	Me-Ph	Me	Obo	D	P	P	P	W	M	L	E	Fz	SA
	37. Ranunculaceae (Genus 1, Species 1)																			
60	*Aquilegia vulgaris* L.	He	N	MP	Te	B	Ph	N-Ph	No	Bit	E	P	P	A	P	M	R	LC	Fz	Eu
	38. Rhamnaceae (Genus 1, Species 1)																			
61	*Ceanothus americanus* L.	Sh	N	MP	Te	P	Ph	N-Ph	Me	Obo	D	P	P	P	W	M	R	NEx	D	NAm
	39. Rosaceae (Genus 3, Species 3)																			
62	*Malus domestica* Borkh.	Tr	D	MP	Te-Tr	P	Ph	Me-Ph	Ma	Ov	D	P	P	P	W	F-RR	Fr	NEx	MD	CA
63	*Pyrus communis* L.	Tr	N	CP	Te-Tr	P	Ph	Mg-Ph	Me	Ov	E	P	P	P	W	F	Fr	NEx	D	Eu
64	*Rosa acicularis* Lindl.	Sh	N	CP	Te-Tr	P	Ph	Mi-Ph	Me	Pi	D	P	P	A	P	F-RR	Bk, L	NEx	C	Eu- A- Am
	40. Rubiaceae (Genus 1, Species 1)																			
65	*Gardenia jasminoides* J.Ellis.	Sh	N	WB	WTe-Tr	P	Ph	N-Ph	Me	La	E	P	P	P	W	M-RR	Fr	NEx	MD	A
	41. Salicaceae (Genus 1, Species 1)																			
66	Salix bAylonica L.	Tr	E	CP	Te	P	Ph	Me-Ph	No	La	D	P	P	A	Y	F-M	Bk, L	NEx	D	NCh
	42. Santalaceae (Genus 1, Species 1)																			
67	*Santalum album* L.	Tr	N	CP	WTe-Tr	P	Ph	Me-Ph	Na	Obl	E	P	P	P	P	M-RR	Wo	V	D	In
	43. Sapindaceae (Genus 1, Species 1)																			
68	*Acer palmatum* Thunb.	Tr	N	MP	Te-Tr	P	Ph	Me-Ph	Ma	Pa	D	P	P	P	R	F-M	L	LC	D	A
	44. Sapotaceae (Genus 1, Species 2)																			
69	*Mimusops hexandra* Roxb.	Tr	N	MP	Tr	P	Ph	Me-Ph	Me	Ov	E	P	P	P	W	F-RR	Fr	NE	D	In
70	*Mimusops kauki* L.	Tr	N	MP	Tr	P	Ph	Me-Ph	Me	Ov	E	P	P	P	W	F-RR	Fr	NE	D	Tr A
	45. Saxifrangaceae (Genus 1, Species 2)																			
71	*Saxifraga paniculata* Mill.	He	N	MP	Te	P	Ch	Ca-Ch	Na	Obo	E	A	P	P	W	M	L	ER	D	Eu- Am
72	*Saxifraga oppositifolia* L.	He	N	MP	Te	P	Ch	Ca-Ch	Na	Obo	E	A	P	P	P	F	Fl, L	NEx	D	Eu
	46. Solanaceae (Genus 2, Species 2)																			
73	*Mandragora officinarum* L.	He	N	MP	Te	P	He	Ca-He	Ma	Ov	E	A	P	P	W	MR	R	NEx	D	M
74	*Solanum trilobatum* L.	Sh	N	MP	Tr	P	Ph	N-Ph	No	Ov	E	P	P	P	P	M	L	NE	D	In
	47. Ulmaceae (Genus 1, Species 1)																			
75	*Ulmus rubra* Muhl.	Tr	N	MP	Te	P	Ph	Me-Ph	Ma	Obo	D	P	P	P	R	M-T	Wo, L	NEx	D,C	NAm
	48. Vitaceae (Genus 1, Species 1)																			
76	*Cissus quadrangularis* L.	Cl	N	SP	Tr	P	Ph	Mi-Ph	No	Ov	E	P	P	P	Y	F-M	S	NE	D	In-Af
	Monocot																			
	49. Araceae (Genus 1, Species 1)																			
77	*Spirodela polyrrhiza* (L.)Schleid	He	E	WB	Te-Tr	P	Cr	Ro-Hl	Na	Or	E	A	P	P	G	BM	WP	LC	MFr	SA- Af
	50. Arecaceae (Genus 1, Species 1)																			
78	*Euterpe oleracea* Mart.	Tr	N	WP	Tr	P	Ph	Me-Ph	Mg	Pi	E	P	P	P	Y	F-M	Frs	NEx	D	SAm
	51. Asparagaceae (Genus 4, Species 4)																			
79	*Asparagus racemosus* Willd.	Cl	N	SP	Tr	P	Ph	Mi-Ph	Le	Ac	E	A	P	P	W	F-M	Tu	E	ED	Af- A
80	*Chlorophytum borivilianum* Santapau & R.R. Fern	He	N	WP	Tr	P	Cr	Tu-Ge	Me	La	D	A	P	P	W	F-M	Tu	CE	ED	In
81	Dracaena cinnaari Balf. f	Tr	N	WP	Tr	P	Ph	Me-Ph	Me	En	E	P	P	P	W	M-RR	S	V	ED	NEAf
82	*Polygonatum biflorum* (Walter) Elliot	He	N	MP	Te	P	Cr	Rh-Ge	Me	El	D	A	P	P	W	M	Rh, L	NEx	Fz	NAm
	52. Iridaceae (Genus 1, Species 2)																			
83	*Iris pseudacorus* L.	He	N	WP	Te	P	Cr	Rh-hl	No	Li	E	P	P	A	Y	O-RR	Fl	LC	Fz	Eu-NAf- WA
84	*Iris × germanica* L.	He	N	WP	Te	P	Cr	Rh-hl	No	Li	E	P	P	A	P	F-M	WP	NEx	Fz	M- Eu
	53. Liliaceae (Genus 1, Species 1)																			
85	*Lilium lancifolium* Thunb.	He	N	WP	Te	P	Ph	N-Ph	Na	La	D	P	P	A	O	F -O	Bb, Fl	NEx	Fz	A
	54. Musaceae (Genus 1, Species 1)																			
86	*Musa × paradisiaca* L.	He	N	WP	Tr-STr	P	Ph	Mi-Ph	Mg	Pa	E	P	P	P	Y	F-M-RR	Fl, Fr	NEx	D	SEA
	55. Poaceae (Genus 3, Species 3)																			
87	*Hordeum vulgare* L.	He	D	WP	Te	A	The	Ca-The	Na	Li	D	A	P	P	Y	F -BG	Se	NEx	Fz	EA
88	*Saccharum officinarum* L.	He	D	MP	Tr-STr	P	The	Sc-The	Ma	Li	E	P	P	P	W	F-RR	S	NEx	MFr	SEA
89	*Triticum aestivum* L.	He	D	MP	Te-Tr	A	The	Sc-The	Na	Li	D	A	P	P	G	F-RR	Se	NEx	MFr	M
	56. Xanthorrhoeaceae (Genus 1, Species 1)																			
90	*Aloe vera* (L.) Burm.f.	He	N	SP	Tr-STr	P	Cr	Rb-Ge	Me	La	E	P	P	P	Y	M-RR	L	NEx	ED	SAf

Habit (H): Th = Thallophyte, Sa = Saprophyte, Fe = Fern, Herb = He, Shrub = Sh, Tree = Tr, Cl = Climber.
Nativity (N): D = Domesticated, E = Exotic, N = Native, B = Both Native and Exotic.
Habitat (HT): MP - Moist places, WB - Water bodies, WP - Wet places, CF - Cultivated fields, CP - Cool places, SP - Shade places, SR - Sea rocks, DL - Decaying liters, SM - Marshy places, WL – Woodlands.
Geographical habitat type (GHT): Te = Temperate, Te-STr = Temperate to Subtropical, Te-Tr = Temperate to Tropical, Tr = Tropical, Tr-STr = Tropical to Subtropical, WTe-Tr = Warm temperate to Tropical.
Life Span (LS): A = Annual, B = Biennial, P – Perennial.
Raunkiaer's Life forms (RLF) and Sub division (SD):
Th = Thallophytes, Th-he = Thallo-hemicryptophytes, Th-Sa = Thallo-saprophytes, Th-Ch = Thallo-chamaephytes.
Ph = Phanerophytes, N-Ph = NanoPhanerophytes, Mi-Ph = MicroPhanerophytes, Me-Ph = MesoPhanerophytes, Mg-Ph = MegaPhanerophytes.
Ch = Chamaephytes, Ca-Ch = Caespitose Chamaephytes, Su-Ch = Suffruticose chamaeophyte, He = Hemicryptophytes, Ca-He = Caespitose hemicryptophytes, Sc-He = Scapose hemicryptophytes.
Cr = Cryptophytes, Rh-hl = Rhizome helophytes, Bu-Ge = Bulbous geophytes, Tu-Ge = Tuber geotypes, Rb-Ge = Root budding Geotypes, Rh-Ge = Rhizome geophytes, Ro-Hl = Root helophytes.
The = Therophytes, Ca-The = Caespitose therophytes, Sc-The = Scapose therophytes, Su-The = Succulent therophytes.
Leaf Size Spectra (LSS): Le = Leptophyll, Na = Nanophyll, Mi = Microphyll, No = Notophyll, Me = Mesophyll, Ma = Macrophyll, Mg = Megaphyll.
Leaf Lamina (LL): Ac = Acicular, Bit = Biternate, Bu = Button, Co = Cordate, Cr = Crescent, El = Elliptic, En = Ensiform, Fi = filiform, Fa = Fan, Ha = Hastate, La = Lanceolate, Li = Linear, Lo = Lobed, Ob = Oblong, Obl = Oblanceolate, Obc = Obcordate, Obo = Obovate, Or = Orbicular, Ov = Ovate, Pa = Paddle, Pi = Pinnate, Ob-l = Oblong and Lobed, Pa = Palmate, Pa-l = Palmately and 3 Lobed, Pi = Pinnate, Tpi = Tripinnate.
Leaf habit (LH): E = Evergreen, D = Decidious.
Growth Seasons: Summer (S), Rainy (R), Winter (W); P = Present, A = Absent.

Flower colour (FC): R - Red, W - White, G - Green, Y - Yellow, P - Purple, O - Orange, B – Blueish.
Uses: BM = Bioremediation, D-Fd = Dye and Fodder, F = Food, F-BG = Food and Beverages, F-M = Food and Medicine, F-O = Food and Ornamental, F-T = Food, and Timber, F-BG-M = Food, Beverages and Medicine, O = Ornamental, F-M-T = Food, Medicine and Timber, MR = Magic rituals, M = Medicine, M-T = Medicine and Timber, M-D = Medicine and Dye, M-RR = Medicine, Religious ritual.
Parts Used : B = Bark, Bb = Bulb, L = L, Fl = Flower, Fr = Fruit, Fr Bd = Fruit body, Rh = Rhizome, R = Root, S = Stem, Se = Seeds, Th = Thallus, Tu = Tuber, WP = Whole plant, W = Wood.
Global conservation status(GCS): CE = Critically endangered, DD = Data deficient, E = Endangered, ER = Extremely rare, LC = Least concern, LR = Low Risk, NE = Not Evaluated, NEx = Not Extinct, V = Vulnerable.
Species Tolerant (ST): C = Cold, D = Drought, ErFz = Early Freezing, ED = Extreme D, Efz = Extreme Freezing, FD = Fairly D, Fz = Freezing, Fr = Frost, Fr&C = Frost and Cold, D&C = D and Cold, MSLi = Minimum sunlight, MD = Moderately to D, MFr = Moderately to Frost.
Native Distribution: African = Af, Am = American, A = Asian, Co = Cosmopoliton, EA = Eurasia, Eu = European, In = Indian, M = Mediterranean, Tr = Tropical, E = East/ Eastern, W = West/ Western, N = North, S = South, C = Central, - = and.

3.4 DMRPs Life span

The DMRPs life spans (Table 1) were mostly perennial (63) followed by annuals (22) and biennials (5). The DMRPs perennial nature shows the ability to thrive under various environmental stresses for a long period of time and maintain its normal nature by actively participating in the cycling of ecosystem's buffering capacity which correlates with the longevity nature of moon. The length of generation can be correlated with the growth habit of the plant which is greatest in trees, less in shrubs and shortest in herbs. Annual or biennial plants multiply its generations more rapidly and accumulate heritable changes much faster than trees where it requires much longer time to get maturity which can be equated to the changeability nature and short lunar cycle phases of moon.

3.4 Raunkiaer's Life forms and Biological Spectrum

Biological Spectrum of Raunkiaer's Life forms and their Sub divisions were compared with Raunkiaer's normal spectrum to study the DMRPs phytoclimatic spectrum (Table 1, Fig. 1). The study revealed that there was a significant deviation from normal spectrum as phanerophytes (Ph) were dominant (67.78%) followed 11.11% each by cryptophytes (Cr) and Therophytes (The) then by 4.44% thallophytes (Th), 3.33% chamaephytes (Ch) and 2.22% Hemicryptophytes (He). Nanophanerophytes (45.9%) recorded maximum number of species followed by mesophanerophytes (29.51%), microphanerophytes (14.75%) and megaphanerophytes (9.84%) among the Phanerophytes. Phanerophytes dominance was akin to the normal spectrum whereas hemicryptophytes, chamaephytes, therophytes and cryptophytes, thallophytes were comparatively represented in small and high number respectively. The higher percentage of phanerophytes was an indicative of phanerophytic climate, moist rich ecosystems which in turn supports the moon's watery nature.

3.5 DMRPs Leaf physiogamy

3.5.1 Leaf lamina shape

The leaf economic spectrum, such as leaf area and specific leaf area depends mainly on leaf shape since it plays a key role in plant function and long-term adaptation to the environment. As regards the shape of leaf lamina, ovate 24 (26.67%) was found to be the maximum followed by lanceolate 12 (13.33%), obovate 7 (7.77%) and elliptic 3 (3.33%). Cordate, linear and lobed were represented by five species each (5.55%) while oblanceolate, palmate and pinnate represents four species each (4.44%). Two species (2.22%) represents oblong, orbicular and tripinnate leaf shapes. Acicular, biternate, button, crescent, ensiform, fan, filiform, hastate, obcordate, oblong and lobed, palmately with trilobe leaf shapes were represented by single species (Table 1). Thus the much affected essential plant part by environmental factors was leaf shape and it mostly range from elliptic to ovate in the present study are correlated to the moon orbit while the other leaf shapes coincide to the moon's changeability nature.

3.5.2 Leaf size spectra

The overall leaf size spectrum showed the presence of mesophyll 41 (45.56%), nanophyll 15 (16.66%), notophyll 11 (12.22%), macrophyll 10 (11.11%), megaphyll 6 (6.66%), leptophyll 6 (6.66%) and microphyll 1 (1.11%) that have the maximum in comparison to phanerophytes, cryptophytes, therophytes and thallophytes respectively (Table 1). The presence of medium to large leaves shows their less efficient energy exchange capacity which was advantageous in cooler, moister and lower irradiance environments [42] which in turn match geographical habitat type (GHT) and the moon's cool nature.

3.5.3 Leaf habit

The world's terrestrial ecosystems composed of wet and dry seasons and the plant have distinct leaf habit strategies for coping coldest and hottest seasons. Table 1 indicates that the leaf habit of DMRPs were either evergreen (61 species) or deciduous (29 species). This shows that the drought tolerance and drought avoidance are associated respectively with evergreen and deciduous plants. Deciduous species drop their leaves when soil water potentials decline during dry seasons whereas evergreen plants are perennial nature and possess traits to thrive under extreme environmental factors. The dominated evergreen (67.78%) leaf habit over deciduous (32.22%) can be related independently to immortality symbol cum eternal life of moon and lunar cycle.

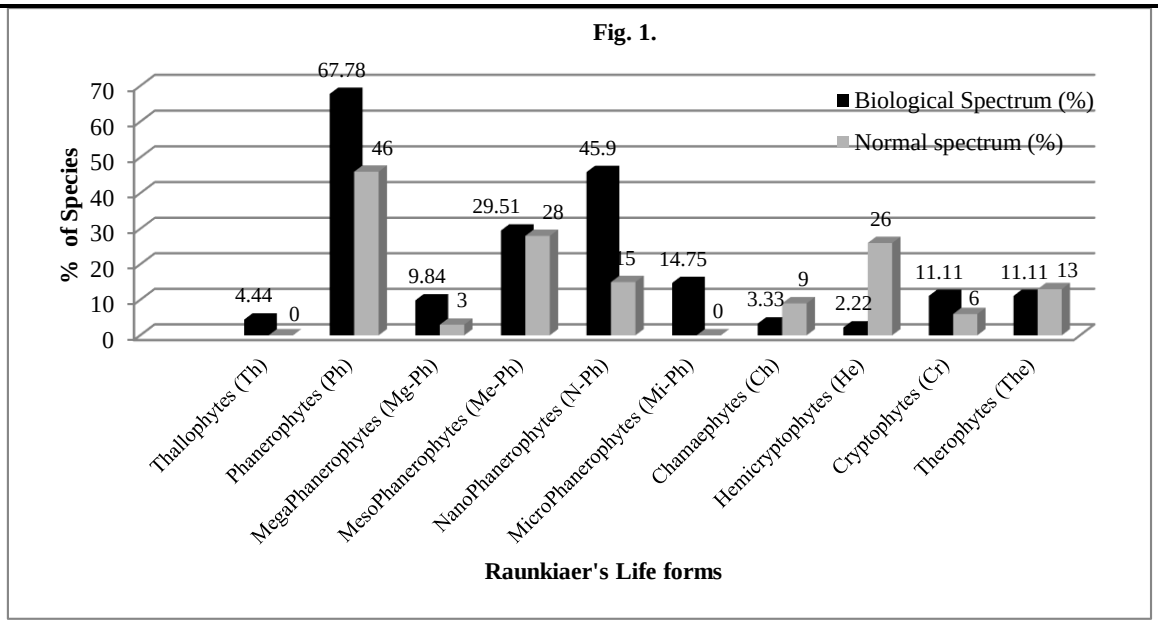

Fig. 1. Comparison of divine moon remedial plants biological spectrum with Raunkiaer's normal spectra

3.6 Growth seasons

The vegetation and reproductive growth period in Table 1 during different seasons affirm that most of the species were dominant in rainy seasons 90 (100%), followed by winter 79 (87.78%) and summer 52 (57.78%). The habit-wise species content varied with respect to seasons. In the summer season, tree > shrub > climber > herb while in rainy and winter season, herb>climber>shrub>tree growth pattern were observed. The DMRPs governance of rainy (August - September) followed by winter (December - January) and summer (June - July) seasons were in harmony with the moon's *varsha* rtu (rainy season) and its friendly planetary rulerships seasons of Jupiter's *hemanta* rtu (winter) and mars *grishma* rtu (summer)[43]. Thus the study of DMRPs growth seasons conforms either with the seasons of moon or with the seasons of friendly planets and play a significant role in determining the biochemical composition of plants.

3.7 Flower colour

Table 1 shows human perception of seven different colours from DMRPs flowers. 44.44% White flower (40) dominates and 25.56% yellow (23), 18.89% purple (17), 4.44% green (4), 3.33% red (3), 2.22% orange (2) and 1.11% blue (1) follows descending order. The correspondences between DMRPs flower colour could be well understood by correlating the colour of moon light, its phases and moon's friendly planets colour namely orange (sun), red (mars) and yellow or green (Jupiter). Moreover, moon light colour varies depending on the moon position in the sky, lunar phases and eclipse. Moon light appear white during day time and normal days, yellow at night, blue to purple on full moon day, red or orange at the lowest horizon and on lunar eclipse. Thus the DMRPs flower colour is in tune with either the colour of moon phases or friendly planets colour.

3.8 Uses

Table 1 reveal that the DMRPs were used for food (34.92%), medicine (30.95%), religious ritual (17.46%), magic rituals (4.76%), timber (3.97%), ornamental (3.18%), dye and beverages (1.59% each), fodder and bioremediation (0.79% each). Except *Spirodela polyrrhiza* (L.) Schleid all other species have multiple uses. *Hordeum vulgare* L. and *Triticum aestivum* L. were neolithic founder crops still in fourth and third position in world production of cereals. *Melissa officinalis* L. (Lamiaceae), synanthropic species of cultigen apophytes attracts human due to wider use as tea, flavouring agent, honey production, high cost oil in perfumery and ornamental. *Malus domestica* Borkh., an important ancient fruit of royals was still widely grown and most consumed fruit around the world. The use of maximum number of plants for food, medicine and religious ritual supports the antiquity use of plants in culture by human race. Incorporation of respective curative, religious and conservation element in food, medicine and ecosystem (wet places bioremediation by *S. polyrrhiza*, soil erosion control, land rehabilitation, water conservation and soil carbon sequestration by *Butea monosperma* (Lam.) Taub.) in culture emphasizes how ancestors coexist with nature and lead a healthy sustainable life.

3.9 Useful parts

The plant parts analysis is highly essential for efficient use of DMRPs as the nutritional status of the plant differs with different parts. Table 1 show that leaves (29.14%) were mostly used followed by root (15.23%), fruit (11.92%), whole plant (8.61%), stem (7.95%), seeds (7.29%), Rhizome (4.64%), flower (4.64%), wood (3.97%), bark (3.31%), tuber (1.33%), bulb (0.66%) and thallus (0.66%). Most plant parts (leaves, fruit, tuber, bulb and rhizome) were associated with soft, succulent or juicy traits that resembles cool and watery moon nature, hard and dark coloured parts (wood and stem) resembles the rocky nature of mars, parts lacking well defined surface (thallus and bark) resembles the nature of Jupiter, parts which give life force (seeds, whole plants and root) resembles the nature of the sun. Hence, DMRPs parts are corresponded to colour and nature of either moon or its friendly planets which agrees with the flower colour.

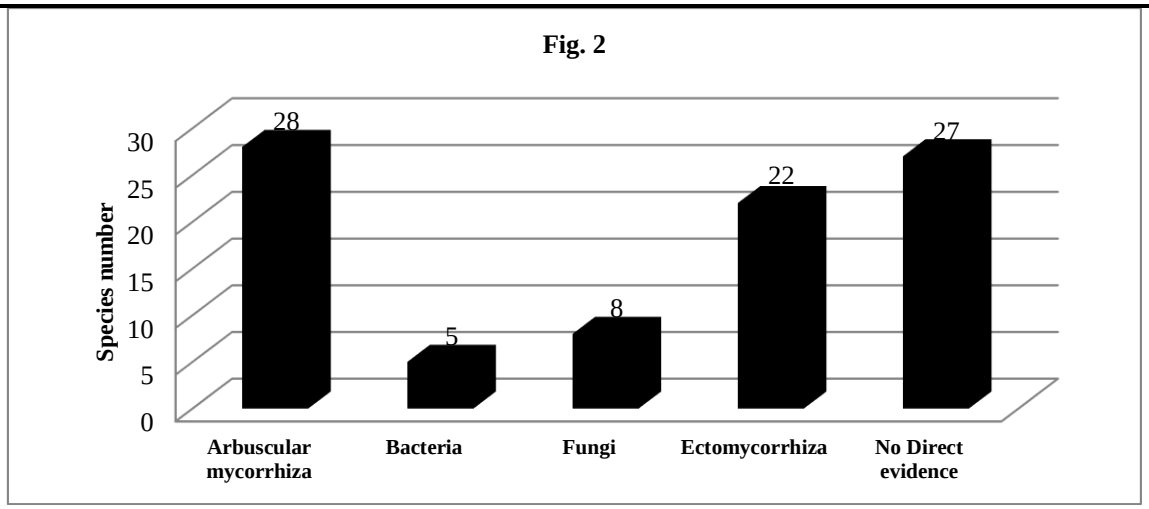

Fig. 2. Symbiotic relationship of divine moon remedial plants

3.10 Native distribution and Nativity

Human density determines the intensity of transports, industries and agriculture that increase the pressure of exotic plants introduction and their propagation. Twenty nine species have Asian distribution followed by Eurasia (19), American (17), European (16), African (14), Indian (11), Mediterranean (7) and Cosmopoliton (1). Multiple native distributions of species (Table 1) indicate that the species were present in single land mass prior to the continental drift. Seventy three species were native while 12 species were exotic. Four species *M. domestica*, *M. officinalis*, *H. vulgare* and *T. aestivum* were domesticated and single species *Hylotelephium telephium* (L.) H. Ohba belongs to the family Crassulaceae exhibit both exotic and nativity due to its succulent nature and CAM (Crassulacean acid metabolism) photosynthesis. Native plants promote biodiversity by providing diverse habitats and food sources. Spiritual, aesthetic and region unique feature of native plants provides a deeper understanding of its antiquity, adaptability and distribution.

3.11 Global conservation status

Observation of Table 1 divulge one critically endangered (*Chlorophytum borivilianum* Santapau and R.R.Fern.), four endangered (*Davidia involucrata* Baill., *Embelia ribes* Burm.f., *Swietenia mahagoni* (L.) Jacq., *Asparagus racemosus* Willd.), one extremely rare (*Saxifraga paniculata* Mill.), two vulnerable (*Dracaena cinnabari* Balf.f, *Santalum album* L.), two low risk (*Andrographis paniculata* (Burm.f.) Nees., *Solanum trilobatum* L.) and eight least concerned (*Acer palmatum* Thunb., *Aquilegia vulgaris* L., *Carissa spinarum* L., *Lythrum salicaria* L., *Nasturtium officinale* R.Br., *Nymphaea pubescens* Willd., *Iris pseudacorus* L. and *S. polyrrhiza*) species. Fifteen plants have not yet been evaluated till now and 56 were categorized as not extinct species. This helps in identification and determination of DMRPs that needs conservation.

3.12 Species tolerant level and Symbiotic relationship

Investigation of all DMRPs showed tolerance ability either to drought (57.78%) or freezing (13.33%) or frost (2.22% each) however, the tolerance degree varies with species (Table 1). Some species have tolerance to both drought and cold (1.11%) and frost and drought (2.22%). Other types of tolerance level includes moderately to drought (7.77%), extreme drought and shade (4.44% each), moderately to frost (3.33%), early freezing, extreme freezing and salt (1.11% each). Symbiotic relationship analysis of DMRPs (Table 1) shows 63 species (70%) were associated with either fungi or bacteria and 27 (30%) have no direct evidence of symbiotic association. This agrees with the report of 80% vascular plants form relationships with mycorrhizal fungi[44]. Out of 63 species, 28 were associated with arbuscular mycorrhiza, 22 with ectomycorrhiza, eight with fungi and five with bacteria (Fig. 2). The critically endangered, endangered, vulnerable and rare species all are having symbiotic relationship with Arbuscular mycorrhiza. In addition, all the native old world species still thrives due to high degree of abiotic stress tolerance conferred by the mutual interactions between mycorrhizal fungi (both endo and ectophytes) and plant roots[45]. However, the exotic and the domesticated species do not have symbiotic association with fungi or bacteria.

3.13 Correspondences between moon and DMRPs

All the 90 DMRPs associated to the nature manifestation of water element[8-10,16], a major important component of living things (60 to 90%) essential for metabolism regulation, molecules transport, communication and survival of organisms. Water element herbs were used to tap the life-giving power of water in general and for cleansing, environment purification and nourishing souls in particular. Hence moon and DMRPs are assigned to feminine or mother family relation[10]. Interestingly all the 90 DMRPs also belong to the cosmo-biological humor kapha which shows the inter-relationship of moon (beauty, coolness, general well being, happiness, mind functions, sensitiveness, longevity, changeability, watery nature, immortality and eternal life) and its corresponding ayurvedic humor kapha (heavy, slow, cool, sleek, smooth, delicate, thick, stable, gross, and cloudy) characters[16,22,25]. In addition, DMRPs flower colour, soft nature and colour of useful parts were in par with the colour and nature of moon phases or the colour of friendly planets. Native distribution, nativity, global conservation status, species tolerant level and symbiotic relationship provide the relation of past, present, ecosystem conservation and nature of DMRPs. Observations made clearly states that plant's physical characteristics have significant role in DMRPs selection criteria. DRPs choice for moon by prehistoric medicine was based primarily on water manifestation element, cosmo-biological humour kapha and colour of either moon phases or its friendly planets sun, mars and Jupiter followed by doctrine of signatures to figure out a plant-moon

correspondences or magical and medical uses. Thus certain aspects of DMRPs metaphysical link with moon were unraveled but complete mechanism behind association needs further investigation.

4. CONCLUSIONS

The first unfolding step of present study denotes the persistence of using botanical approach to interpret the metaphysical connection of DMRPs. The DMRPs botanical traits analyses unfurl certain hidden cues regarding plants-moon relationship. Herbaceous habit, phanerophytic phytoclimate, wetland habitat preference, luxuriant growth during rainy season, plants uses, medicinal usage of soft, hard and life force plant parts, relationship between species tolerance level, symbiotic and antiquity coincides predominantly with moon and its friendly planets characteristic features in the present study. The study is useful in conceptual framing about the moon-plant association and strongly supports the abiotic factor water, cosmo-biological humour kapha, non arid geographical habitat and useful parts cum flower colour play an important role in assigning plants to moon. In order to ensure proper criteria for DMRPs harmony further research is needed with reference to DMRPs medicinal aspects, diseases and ruling human body parts to explore the points of convergence and divergence between plants, planets, traditional medicine and human body by which the DMRPs or medicinal plants efficacy can be increased by using the exact blend of natural ingredients linked with the choice of the favorable astral conjunction. This brings new approach in future medicinal plant therapy.

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Conflict of Interest

The authors declare no competing or conflict of interest.

Author's Contributions

Komalavalli N: Performed the conceptualization, data analysis and interptetation, writing, editing, and review of the manuscript; Shanthini K: Performed the literature survey, table, figures and reference part of the study.

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