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A Geographical Understanding of Nityaga Kaala (Chronological time) in India and Its Influence on Health

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ABSTRACT

Ayurveda has given great importance to the *kala* (time) for the healthy as well as the diseased. *Kala* have been divided into two. *Nityaga Kaala* (chronological time) and *Avasthika Kaala* (Conditional time). *Nityaga* again divided into *Uttarayana* and *Dakshinayana*. These two *Ayanas* formed by six *Ritus*. *Avasthika kala* tells us about different *avasthas* of *Vyadhi and Aayu*. In *Charaka Samhita*, it is designated that the *Shodhana* (seasonal purification procedures) should be conceded out in *Sadharana Ritus* i.e., *Praavrit, Sharada and Vasanta*. In *Ayurvedic* classics precise nutritive and negotiating decorum has been suggested for every season to thwart diseases developing due to seasonal changes. It is called as '*Ritucharyaa*' in *Ayurveda*. It is imperative to comprehend the seasons geographically for practical claim of *Ritucharyaa*.

KEYWORDS

Avasthika Kaala, Kaala, Kaarana Dravyaas, Nityaga Kaala, Ritucharyaa.



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INTRODUCTION

Kaala (the time) is one of the nine *Kaarana Dravyaas* (causative substances) of the universe and so of the living human body according to *Charaka*¹. The measure of duration or length of *Aayu* (life) which is called as 'Maana' in Ayurveda is nothing but a form of the *Kaala* and Ayurveda being the science of life thinks not only about compatible and incompatible things for healthy life but also about the *Maana*². [Ref. *Hitahitam sukham dukkham.....MAANAM cha....*] *Kaala* has been given prime importance in Ayurveda in various contexts for maintenance of health and curing diseases. It influences the state of health and disease, potency of drugs and diseases, etc. And as it is said to be the cause for any transformation or change and being *Nishpratyanka* (unavoidable, insuperable and undefeatable) according to *Charaka*³ physician should always consider it while diagnosing and treating diseases.

Without *Kaala* nothing can be produced, nothing can exist and nothing can be destroyed or die because, *Kaala* is the thing which is regulator of all events in the universe⁴. *Kaala* is the cause for any transformation or change. It is the cause for birth and death of all living beings, for the disorders and excellence of the seasons; of

the tastes and potency of drugs (of all the substances); of disorder or excellence of the strength of the *Doshas* and body⁵.

Kaala is said to be *Anaadi* (having no beginning) and *Ananta* (having no end). But for understanding and practical utility, *Kaala* has been divided in to two types viz, *Nityaga Kala* (chronological time) and *Avasthika Kaala* (Conditional time?). *Nityaga Kaala* means *Kaala* which is divided on the basis of external environmental period i.e *Shishira*, *Basant* ... ect and *Aavasthika Kaala* is divided on the basis of the age criteria of human being like *Balyavastha*, *Yovanavastha* and *Vridhhavastha*. *Ritus* (seasons) are said to be divisions of *Kaala* by *Chakrapani*. *Ritus* which are divisions of *Nityaga Kaala* are discussed in present article in context with *Desha* (geography?) as both influence the health significantly. In Ayurvedic classics specific dietary and behavioral protocol has been recommended for every season to prevent diseases developing due to seasonal changes. It is called as 'Ritucharya' in Ayurveda. But these seasonal conditions are not uniform all over the country. They vary from place to place. So, it is important to understand the seasons Geographically for practical application of *Ritucharya*.

REVIEW OF LITERATURE



The time though is one, has been divided into fractions on the basis of solar [actually earth] movement. Division of time on this basis is known as *Nityaga Kaala* (the chronological time). When the sun progresses to North of equator, it brings climatic changes serially during six months. During this period strength of all living beings is drawn up due to specific climate. This period is called as 'Adana Kaala' in Ayurveda while when the sun moves to the South of equator, the climatic changes brought by it releases the strength drawn up in Adana Kaala. This period of six months is called as 'Visarga Kaala' in Ayurveda. During the Adana Kaala, due to solar heat, the winds become hot and rough/dry and so draw moisture from environment progressively increasing roughness, dryness in all living beings over a period of six months. In contrast with this, the hot and dry effect of sun is lessened during Visarga Kaala due to clouds, winds and rain progressively over period of six month. This total period of 12 months makes a year. So due to above mentioned climatic changes, a year gets divided into six seasons viz. *Shishira*, *Basant*, *Greshma*, *Varsha* and *Hemanta* as mentioned by Charaka⁶.

In Ayurveda the seasons are broadly grouped in to three types based on their main climatic features such as hot, cold and

rain⁷. All seasons have been included under these three climatic divisions. Some of them are extreme hot, some are extreme cold and some are *Sadharana* (average). Ancient Ayurvedic scholar Charaka described that *Samvatsara* (a year) division of Kaala is having the characteristics of cold, hot and rain in *Hemanta*, *Greshma* and *Varsha Ritus* respectively⁸.

The above classification of climate in Ayurvedic literatures is same as mentioned in modern science According to modern science India mainly features with three types of climate

1. Cold weather season (December – February)
2. Hot weather season (March – May)
3. Rain weather season, which is of two types- West monsoon season (June – September) Post or retreating monsoon season (October – November).

Though all seasons in India can be categorized in to cold, hot and rainy seasons, there are regional variations found across the country. The above mentioned seasons of moderate to severe nature are found in India with varying duration. In *Charaka Samhita* it is described that the moderate seasons are best suitable for administration of *Shodhana* (elimination) therapy due to the mild nature of that season and strong tolerability of patients⁹. In



words of Mr. Valiathan M. S., “The seasons are marked by fluctuation in strength”.

In Ayurvedic classics specific signs have been described to identify specific seasons which can be summarized as follows.

Classical Ayurvedic description of three types of seasons:-

1. Sheeta Kaala (Cold weather seasons)

This seasons forms in the later part of *Visarga Kaala* and first quarter of *Adana Kaala*, after rainfall or rainy season, the *Visarga Kaala* mainly dominates with the dark cloud covers and cold winds. The seasons *Sharada* and *Hemanta* are the main seasons during this solstice, and *Shishira* being the first season of *Aadana Kaala* has dominant cold weather condition is also the major *Ritu* of this *Kaala*. When we generally observe the climate of India grossly, the North-west part of India experiences more winter months, whereas the peninsular India and eastern India experiences more rainy months.

The *Hemanta & Shishira Ritu*'s constitute cold weather season in India generally, in the greater parts of India *Hemanta Ritu* begins in the later part of November in the north, and by the beginning of December in the rest of the country. When we observe the synonyms of *Hemanta Ritu*, it is mentioned as *Sheeta*, *Tusharasamaya*, *Himagama*, *Shishiragama* (ch. sam) which

indicates the predominant misty, cold climatic conditions of the season.

During *Hemanta Ritu*, cold wind blows from the north, The quarters (space around) are full of dust and smoke, The Sunrays are hindered by fog, Reservoirs of water are covered with mist, *Rodhra*, *Priyangu* and *Punnāga* trees flourish (bring up flowers). The season of *Hemanta* is cold but *Ruksha*. The sun is weak and the atmosphere is very airy¹⁰. In *Shishira Ritu* the intensity of cold is more and all other *lakshanas* are the same as in *Hemanta Ritu*, In *Shishira*, *purva vayu* is good which has qualities like *Sheeta*, *Madhura*, *Vaata Prakopi*, *Balakrut* and which is not good for *Vranasopha*. In हेमन्त - आग्नेय वायु which has qualities like *Madhura Rasa*, *Kapha* and *Vata Rogas* are produced, which is not good for *Shopha Vrana*.

The cold weather season is characterized by out-flowing winds, dry and stable air, and clear skies. During winter season there is a general decrease in temperature from north to south, Isotherm or constant temperature run parallel to the latitudes (horizontal axis). The description of *Agneya vayu* during *Hemanta* can be considered as the north westerly flow prevails down the ganges Valleys, and the *Purva Vayu* in *Shishira Ritu* can be compared to the inflow wind of western disturbances originating



from the meditaranean sea, which lasts upto the spring season. These winds will be extremely cold, besides snowfall from westerly wind towards east, which feed the western glaciers of Himalaya. In the month of January.i.e in *Hemanta Ritu*, the north-western parts of the great plains of India(Punjab, Haryana, Western uttar Pradesh and Rajastan) experiences less than 15⁰ mean monthly temperature. The night temperature in the plains of Punjab, Haryana, and Rajastan(Amritsar, Hisar & Jodhpur) reads below freezing point, producing ground frost condition. Often there is a decrease of more than 6⁰ C in the mean temperature, resulting in the cold wave in the northern plains of India, it can be understood as the *Shishira Ritu*, which is characterized with extreme cold. January is the coldest month in India, especially in north India, this indicates the dominant appearance of *Shishira Ritu* in north western India. In south India, however does not have a well defined cold weather season. The mean maximum temperature for the month of January at Tiruvanantapuram and Chennai reads 31⁰C and 30⁰C respectively.

2. *Ushna Kaala* (Hot weather seasons)

This is the later two thirds of *Adana Kaala*, mainly characterized with the hot weather condition, this season constituted by the moderate hot weather season *Vasanta Ritu*

and extreme hot weather season *Greshma Ritu*. As the sun moves above the tropic of cancer the northern part of the earth starts getting warmer, the sun rays will be very sharp and it drains away the moisture from the earth¹¹.

In this season the sun absorbs the unctuous qualities from the living beings as well as from the nature. (*ch su 6/4 chakra. Vayu is Ruksha and Laghu* by its *Swabhava*¹². The wind blowing from *Nairutya*(south-west) direction causes un pleasant experiences. Earth will be very much hot¹³.

The north Indian region experiences a well defined hot weather season from mid-March to mid-June, with the northward march of the sun towards the tropic of cancer after the vernal equinox the temperature begins to rise. At the advent of March, the temperature starts rising abruptly. Whereas in south India the intensity of heat is not as much as in northern India, it is because of the presence of relative humidity due to the oceans surrounding this region. During *Vasanta Ritu* the wind blows from the south, the sun's rays are coppery red in color, the trees are full of fresh tender leaves and bark, all the quarters are clean and clear¹⁴. The wind blowing from the south through the rows of *Chandana* (sandle) trees carry their sweet smell and produces pleasure in amorous persons by enhancing sexual desire.



(Su.Su.6) During this period the sky will be very clear without any fog¹⁵.

By April, the peninsular region south of the *Vindhya* range heat up with mean maximum temperature of 40⁰C. In May the mean maximum temperature reaches 42⁰C in Rajasthan, Delhi, West Uttar Pradesh, south Punjab Jammu city and Haryana. At some places, particularly in north-western India, day temperature may be as high as 45⁰C or 47⁰C. The mean minimum daily temperature in May also remains quite high being about 26⁰C at Delhi and Jaipur. Because of this high temperature During *Greshma Ritu* as the sun rays become more powerful, the body feels as if squeezed with increasing atmospheric temperature, The earth is extremely hot in all directions due to forest fire kind of extremely hot sunrays, All animals feel as if they are suffering from fever due to the hot sun, wind and sweat,¹⁶ During summer season, the sun is scorching and the relative humidity is generally below 30% , Occasionally reaching below 10%, the atmospheric air become very hot and dry. The total rainfall in this season is below 2cm in most of the north western India, This is why it causes extreme exhaustion in human beings as well as animals. Due to the soaring heat, the water resources dries up, the pond water dries of and their banks looks high. The water of the river and pond are polluted by elephants and buffaloes, this

is the attempt from these animals to regulate their body's temperature due to heat wave.

The temperature in the eastern states of India and in the hilly regions in the month of May is generally cool and invigorating. Being transitional season between the north-east and the south-west monsoon (rainy season), it is characterized by unstable air pressure and wind circulation. This low pressure moves from south-east to north-west and finally settles over north-west India by mid of May to early June. The general wind direction is from north-west and west in north western India and from south-west in the Arabian Sea in south India. The tornado like dust storms of Punjab, Haryana and western Uttar Pradesh, the hot winds (*Loo*) in western India, the northwester (*Kalbaishaki*) of West Bengal are the characteristics of summer season.

3. *Vrishti Kaala* (Rainy weather seasons)

This season mainly features rainy weather conditions, there are two seasons are described for *Vrishti Kaala* i.e., *Pravrit* and *Varsha*. The *Praavrit Ritu* is mentioned in the context of seasonal purification, *Praavrit Ritu* constitutes *Ashada* (June-July) and *Shravana* (July-Aug) months, *Varsha Ritu* constitutes *Bhaadrapada* (Aug-Sep) and *Ashwina* (Sep-Oct) months. In generally when we look into the rainy pattern in Indian sub continent, there is a



large rainy season prevails in south and North-East India, in this region receives an average of 2000mm rainfall annually. In contrast to this in north and north-west India receives an average of 500-1000 mm rain fall annually.

In *Kashyapa Samhita* it is explained that, some scholars hold the view that in the region of south of Ganga there is excessive rain which continues over six months. This period is divided into two seasons and they are known as *Pravrit* (beginning of rainy season) and *Varsha* (Rainy season proper). Similarly in the region north of Ganga there is excessive cold months which continues for over four months. This period is divided into two seasons and they are known as *Hemanta* (Early winter) and *Shishira* (winter proper).

Pravrit Ritu can be considered as the early rainy season, in south India the month of May records highest temperature and in north India temperatures goes to peak in June. This heating of earth during these months causes low pressure over the northern plains of India, generally in the afternoon of a scorching day, rain begins suddenly, and this is known as Monsoon burst. In south India in the end of May occasional rainfall can be noticed, this can be attributed to *Praavrit Ritu* or early Monsoon. The onset of Monsoon in India progresses with the northwards wind from

Arabian Sea reaches the southern end of Kerala by June-1 later spreads over entire country by July 10. Hence *Praavrit Ritu* is the early rainy season or pre monsoon season or the Forepart of the rainy season.

Varsha Ritu is the main season of *Vrishti Kaala* and the first season in *Visarga Kaala* after *Praavrit Ritu* in southern and eastern India, whereas in north-west India it happens after *Greshma Ritu*. This is mainly characterized by the heavy and continuous rain fall all over the country, the words '*Vrishti*', '*Sechana*' means the continuous shower, when the heavy rain causes damage to the lives it is often termed as '*Ati vrishti*' (over flood), the word *Vrishti* can also be equated with flood. *Vrishti*, *Megha*, *Ghana Kaala*, *Jalarnava*, *Meghagama*, *Ghanakara* (*Shabda ratnavali*) are the synonyms of *Varsha Ritu*, this signifies the rainfall and dark cloud cover, here the word *Ghana* signifies the dark cloud cover, a typical characteristic feature during monsoon season. By the end of July the monsoon covers the entire country and produces heavy to very heavy rain fall, from July to September the country receives the highest rainfall of the year. The north and north-west region receives about 350-500 mm rain, East and north-east and south India receives about 1000-2000 mm rainfall in this season. The description of this season found in Ayurvedic classics



very clearly indicates the During this season Wind blows from *Vaaruna disha*, Sky is covered with *Indraneela* coloured clouds which move slowly, Rivers appear like ocean, Demarcation between land & water are not clear, Pleasant sounds from clouds, Peacocks & Frogs are heard, Earth shines with *Indragopa* insects, rainbow & lightnings, Covered with *Shyamala trina*, *Shilinda* & *Kutaja* flowers appears¹⁷. Earth being covered with Silted mud & profuse vegetation Sky becomes overcast with huge clouds, Excess of Humidity dulls the appetite, Thus, *Aushadhi's* partaken causes *Vidaha* & causes *Pitta Sanchaya*, Rivers overflow their banks, Ponds & Lakes filled with *Kumuda* & *Neelotpala* flowers¹⁸ Sky becomes overcast with huge clouds and Rivers overflow their banks¹⁹. These classical observation this season a typical characteristic of rainy season, during this time the relative humidity will be about

65% -80%, this causes the cool atmospheric condition, most of the country experiences good cloud cover. In the third week of September, the southwest monsoon retreats from Punjab and adjacent regions, however unlike the burst of monsoon the retreat is slow and steady. By the end of October the rainy season fades away and the winds from Himalayan region enters the plains of north India and thus begins the winter season.

There are two sets of seasonal classifications based on status of *Swaabhaavik Bala* (natural strength) of living beings and dominance of *rasa* in environment²⁰ in one set and in another set the natural accumulation, progression and regression status of *Doshas* in living bodies in respective months for the purpose of *Rituvat Shodhana* (preventive seasonal purification)²¹.

These two sets of classification are shown in Table 'A' and 'B' respectively.

Table A Classification of seasons based on status of *Swaabhaavik Bala* and dominance of *Rasa*

Climatological condition	Status of <i>Swaabhaavik Bala</i>	Dominance of <i>Rasa</i> in environment	Seasons	Indian months	Greek calendar
Cold	<i>Madhyam (Moderate)</i>	<i>Lavana (Salty)</i>	<i>Sharada (Autumn)</i>	<i>Aswayuja Karthika</i>	Second half of August to first half of October
	<i>Uttama (Maximum)</i>	<i>Madhura (Sweet)</i>	<i>Hemanta (Early winter)</i>	<i>Margaseersha - Pushya</i>	Second half of October to 22 nd December
	<i>Uttama (Maximum)</i>	<i>Tikta (Bitter)</i>	<i>Shishira (winter)</i>	<i>Magha Phalguna</i>	23 rd December to first half of February
Hot	<i>Madhyam (Moderate)</i>	<i>Kashaaya (Astringent)</i>	<i>Vasanta (Spring)</i>	<i>Chaitra Vaisakha</i>	Second half of February to first half of April
	<i>Heena (Minimum)</i>	<i>Katu (Spicy)</i>	<i>Greeshma (Summer)</i>	<i>Jyeshtha Aashada</i>	Second half of April to first half of June
Rainy	<i>Heena (Minimum)</i>	<i>Aamla (Sour)</i>	<i>Varsha (Monsoon/</i>	<i>Shravana Bhaadrapada</i>	23 June to first half of August



Rainy
season)

Table B: Division of seasons based on status of doshas in body and *Rituvat Shodhana* indicated

Climatological condition	Status of doshas in body	Indicated shodhana for preventive purpose	Seasons	Indian months	Greek calendar
Cold	<i>Pitta prakopa</i>	<i>Virechana</i>	<i>Sharada</i>	<i>Kartika-Mārgashirsha</i>	Oct-Nov Nov-Dec
			<i>Hemanta</i>	<i>Pushya-Magha</i>	Dec- Jan Jan- feb
Hot	<i>Kapha prakopa</i>	<i>Vamana</i>	<i>Vasanta</i>	<i>Phalgun-Chaitra</i>	Feb-Mar Mar-April
			<i>Greeshma</i>	<i>Vaishakha-Jyeshtha</i>	April-May May- June
Rainy	<i>Vaata prakopa</i>	<i>Basti</i>	<i>Praavrit</i>	<i>Ashadha – Shravana</i>	June- July July- Aug
			<i>Varshaa</i>	<i>Bhadrapada-Ashwayuja</i>	Aug- Sep Sep- Oct

In Charaka Samhita, it is described that the *Shodhana* (seasonal purification procedures) should be carried out in *Sadharana Ritus* i.e., *Praavrit*, *Sharada* and *Vasanta* because of the mildness and suitability of season for the same as in these seasons above mentioned three climatical conditions are moderate. And *Shodhana* is contra-indicated in *Tikshna Ritus* i.e. extreme climatical condition such as *Varsha*, *Hemanta* and *Greshma* due to their strong nature²².

Above mentioned climatical conditions are not uniform at specific time period everywhere on the Earth or in India. They change region wise according to geography of that region. *Nityaga Kaala* is having *Samavaya Sambandha* with *Desha* (geography?). Therefore, the exact nature

of season in specific region cannot be understood without knowledge of relation between *Kaala* and *Desha*.

Though tremendous information is found in Ayurveda regarding *Nityaga Kaala*, its effective utilization is not being made because of lack of adequate knowledge about the relation between *Kaala* and *Desha*. Understanding *Kaala* in different *Deshas* geographically is very important for Ayurvedic practitioners, since these two are major examination aspects in *Dashavidha pariksha bhavas*²³. Hence present article aims to understand the seasons of India geographically.

Climate, Weather and Season

Climate refers to the sum total of weather conditions and variations over large area for a long period of time (more than 30 years).



Weather is state of atmosphere over an area at any point of time. Similarly weather conditions which last for longer duration are responsible for making a season. Seasons basically happens due to the Northwardly and Southwardly movement of sun from the equatorial line. In Ayurvedic classics it is named as 'Uttaraayana' and 'Dakshinaayana' respectively. The tilt of the earth about 23.5° is the major reason for the formation of seasons across the globe. Geographically India is a sub tropical country with very vast area with varied climatic conditions situated above equatorial plane with the latitude 8° N - 36° N and altitude 68° E - 96° E and tropic of cancer passes through the middle of the country.

There is a gross climatic differences found in India due to many factors, this knowledge

Factors Affecting the Climate of India

1. **Location:** The places which are closer to equator have high temperature. As one moves towards the poles temperature decreases.
2. **Distance from the sea:** The southern half of India is surrounded by sea from three sides: the Arabian sea in the West, the Bay of Bengal in the East and the Indian Ocean in the South. Due to moderating influence of the sea this region is neither hot in summer nor very cold in winter.

3. **Altitude:** It means the height above the average sea level. The atmosphere becomes less dense and we feel breathlessness as we go higher from the earth surface and thus the temperature also decreases with the height.

4. **Mountain Ranges:** Mountain ranges also affect the climate of any region to a great extent. The Himalaya Mountain is located in the northern part of our country with an average height of 6000 m. It protects our country from cold winds of Central Asia. Similarly, Western Ghats force rain bearing winds to cause heavy rain fall on the Western slopes of the Western Ghats.

5. **Direction of surface winds:** The wind system also affects the Indian climate. This system consists of monsoon winds, land and sea breeze, and local winds. In winter the winds blow from land to sea so they are cold and dry.

6. **Upper air Currents:** Besides surface winds, there are strong air currents called Jet streams which also influence the climate of India. These jet streams are a narrow belt of fast blowing winds located generally at 12,000 meter height above the sea level. They bring western cyclonic disturbances along with them.



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