Collection of Raw Drugs w.s.r. to Rasapanchak

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ABSTRACT
The earliest documentation of medicinal uses of plants is found in Rigaveda which was written between 4500-1600 B.C. Chikitsa Chatushpada includes Bhishak (physician), Dravya (medicine), Upasthata (Nurse) and Rogi² (patient). In this Dravya (medicine) stands at second position just after physician highlighting its importance in treatment. The pharmacological, toxicological and clinical efficacies of drugs are attributed to the five qualities of the drug broadly classified as Rasa (taste), Guna (properties), Virya (potency), Vipaka (biotransformation) and Prabhava (special action). These five qualities are collectively known as Rasapanchaka. The time and place of collection of raw drugs have an important effect on the Rasapanchaka of the drug. Due to this Acharyas have given importance to the time and place of collection of drugs. The present article gives an insight about the principles of collection of raw drugs as per classics of Ayurveda.

KEYWORDS
Raw drugs, collection, Ayurveda, Rasapanchaka
INTRODUCTION

Plants are associated with different facets of life such as cultural, medical, economical and spiritual. Since the dawn of human history, plants have been extensively used by human beings for maintenance of their health and for treatment of various diseases either in the form of food or medicine. The earliest documentation of medicinal uses of plants is found in Rigaveda which was written between 4500-1600 B.C. In the course of evolution, long before, Jagdish Chandra Bose demonstrated the signs of life in plants by his scientific experiments, Vedic sages documented it in Chandogya Upanishada (6-11.1).

Acharyas used medicinal plants judiciously as food and medicine. Ayurveda is well known as the Triskandha Ayurveda which refers to three pillars of Ayurveda. It is for both healthy people and patients. One among these is Aushadha (medicine). Further Acharyas had stated that for successful treatment, coordination and co-existence of Chikitsa Chatushpada is extremely essential. The Chikitsa Chatushpada includes Bhishak (physician), Dravya (medicine), Upasthata (Nurse) and Rogi (patient). In this Dravya (medicine) stands at second position just after physician highlighting its importance in treatment. Hence, a detailed knowledge of Dravyas (medicine) and its properties takes a prime importance.

The pharmacological, toxicological and clinical efficacies of drugs are attributed to the five qualities of the drug broadly classified as Rasa (taste), Guna (properties), Virya (potency), Vipaka (biotransformation) and Prabhava (special action). These five qualities are collectively known as Rasapanchaka. The physical, chemical and physiological properties of Dravyas (drugs) are different to each other so as their Rasapanchaka. Rasapanchaka denotes the composition of drug and thus, becomes an important tool for collection and storage of raw drugs.

Importance of Dravya (drug)-

Acharyas had described the four factors for the treatment of the disease. Dravya (drug) stands on the second place in this series. Bhela had placed the Bhesaj (medicine) on the first place in the sequence of Chikitsa Chatushpada highlighting importance of drug in treatment. As per Charak, any means by which a physician proceeds to attain the state of equilibrium of Dhatus in the body is known as Bhesaj. Drug is most important in the course of treatment because without a drug, a good physician is also helpless. Charak had assigned various synonyms to Bhesaj. These are-
• *Karan-* any means used for treatment by a physician.
• *Chikitshit-* substance used in the process of treatment.
• *Vyadhihara-* which eradicates the diseases.
• *Pathya-* which is beneficial for channels of circulation of body or wholesome for patients.
• *Saadhan-* means of treatment
• *Aushadha-* eradicates diseases
• *Prayaschita-* discomfort or diseases are a result of sinful actions. It is the means to eliminate the discomfort or diseases.
• *Prashaman-* pacifies the vitiated *Doshas* or diseases.
• *Prakrati-Sthapana-* it establishes the normalcy in the body.
• *Hita-* beneficial to the body.

*Acharyas* also described the qualities of *Bheshaj* (drug). As per *Sushrut*, that *Bheshaj* should be used which grows in proper land. *Bheshaj* should be collected at proper time. Dose of *Bheshaj* should be low and palatable. *Bheshaj* should have proper smell, colour and taste. It should alleviate *Doshas* but should not cause malaise and complications. This type of *Bheshaj* should be administered at proper time. *Charak* had preached quality standards for *Bheshaj*. *Charak* had set some parameters on which a drug should stand clear. These are

• *Prakrati-* *Prakrati* means habit of the drug. Habit includes that the drug is tree, shrub, under shrub, herb or creeper. It may be of animal origin or mineral origin. The test drug should have the same habit as that of standard drug.
• *Guna-* *Guna* denotes all the qualities like *Rasa, Veerya, Vipaka, Prabhava* etc. (*Chakrapani*). It means that a drug should have all its qualities like taste, potency, bio-transformation, pharmaco-dynamics and pharmacokinetics etc. up to the standards.
• *Prabhav-* In the strict sense of *Dravyaguna, Prabhav* stands for that quality or action of drug which cannot be rationalized on the basis of *Rasa, Veerya, Vipaka* etc. Here, in context of *Dravya Pariksha, Prabhav* denotes that the drug should be full potent in executing its pharmaco-therapeutic actions.
• *Ashmin Deshe Jatam:* for proper growth and development, a drug requires a particular type of environment. So it should be assessed that the test drug has been cultivated or collected from its natural habitat.
• *Ashmin Ritu Eva Grahitam:* Drug should be collected at its proper time. Drug collected at proper time will be full of its *Rasa, Guna, Virya and Vipaka*.
• *Evam Nihitam:* Drug collected at proper time should be stored with
precautions. Otherwise, it may get contaminated with micro-organisms or insects and eventually drug will lose its properties.

- **Evam Upaskritam:-** Drug should be processed using standard procedures under strict hygienic conditions.
- **Anya Matra Cha YuktaM:-** Dose of medicine should be fixed.
- **Asmin Vyadhey M Prayuktam:-** The drug has effectiveness in this particular disease. The mode of administration of drug is always peculiar in respect to the disease.

As evident from the above facts that *Acharyas* had included the place of procurement of drug in both the qualities as well as in the standards set for a drug. The time of collection of drug had also been included in the quality parameters of drug. This indicates that the place of procurement and time of collection of drug has an impact on the quality of drug. *Charak* had stated that a drug acquires potency by the impact of *Desha* (place of origin), *Kaal* (time), *Guna* (physical properties) and *Bhaajan* \(^9\) (container for storage).

### Characteristics of *Dravya* (drug) that should be procured-

*Charak* had stated the characteristics that form the basis on which decision depends that this particular *Dravya* (drug) should be procured on not. As per *Charak*, the drug which had grown in its natural season should be procured. The best time to collect a drug is when it attains full potency and has proper taste, smell etc. The drug which has not been adversely affected by sunlight, water, air, animals etc. should be collected. Before collection, the drug should be thoroughly examined by smell, colour, taste, touch etc. for proper identification. The drug should be collected from north direction \(^{10}\). *Sushrut* had also advised similar things but additionally he had advocated that the land or the soil in which drug had grown should also be examined before procurement \(^{11}\).

Dr. Pushpangadan (Director NBRI, Lucknow) in his address at the Ayurveda 2000 at Chennai on 30\(^{th}\) January 2000 was mentioning their work which proved that the roots etc. collected from east and north direction do possess more active principles than the parts collected from other directions. This may be because of earth’s magnetic field which is strong in these two directions in India.

### Importance of *Mahabhoota*-

*Charak* had quoted that all the *Dravya* (drugs) used in the treatment or intended to be used in the treatment are *Panchbhautika* \(^{12}\) (composed of five basic elements). *Mahabhoota* are the structural and functional basis of all the substances. Not only the drugs even the human body is
composed of five Mahabhoota. The importance of Mahabhoota can be inferred from the fact that Sushrut had stated that only Mahabhoota are considered in the course of treatment\textsuperscript{13}. In every substance although all the five Mahabhoota (Aakash, Vayu, Agni, Jala & Prithvi) are present but the Mahabhoota having predominance in that particular substance mainly manifests its properties and actions. The substance is designated by the name of Mahabhoota having predominance in that particular substance\textsuperscript{14}. Rasapanchak is the manifestation of Mahabhoota in a Dravya (drug). The properties and actions of a drug are due to its Mahabhoutik predominance. Thus, during collection of drug Mahabhoutik predominance should be considered.

**Collection of drugs as per season**-

Acharyas had specified the season for the collection of particular part of the plant. The particular plant part should be collected in a specific season. Charak advised collection of plant parts as per season which is as follows\textsuperscript{15}.

- Newly emerged leaves and branches- Varsha Ritu (rainy season) and Basant Ritu (spring)
- Roots (should be collected after shedding of leaves by plant)- Grishma Ritu (Summer) and Shishir Ritu (late winter)
- Bark, rhizome and latex- Sharad Ritu (Autumn)
- Saar (heartwood)- Hemant (winter)
- Fruits and flowers- as per season

Sushrut advised collection of plant parts as per season as follows\textsuperscript{16}.

- Root- Pravrata Ritu (early rainy season)
- Leaf- Varsha Ritu (rainy season)
- Bark- Sharad Ritu (Autumn)
- Late- Hemant Ritu (winter)
- Heartwood- Basant Ritu (spring)
- Fruits- Grishma Ritu (summer)

The peculiar Rasa (taste) originates in a particular season as per the predominance of Mahabhoot. So if a plant of particular Rasa is to be collected then the plant should be collected in the specific season in which that particular Rasa (taste) originates. The predominance of Mahabhoota and Rasa as per season is shown in table\textsuperscript{17}.

**Table 1** Predominance of Mahabhoota and Rasa as per season

<table>
<thead>
<tr>
<th>Season</th>
<th>Mahabhoot</th>
<th>Rasa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shishir</td>
<td>Vayu &amp; Aakash</td>
<td>Tikta</td>
</tr>
<tr>
<td>Basant</td>
<td>Vayu &amp; Prithvi</td>
<td>Kashaya</td>
</tr>
<tr>
<td>Grishma</td>
<td>Vayu &amp; Agni</td>
<td>Katu</td>
</tr>
<tr>
<td>Varsha</td>
<td>Prithvi &amp; Agni</td>
<td>Amla</td>
</tr>
<tr>
<td>Sharad</td>
<td>Jala &amp; Agni</td>
<td>Lavana</td>
</tr>
<tr>
<td>Hemanta</td>
<td>Prithvi &amp; Jala</td>
<td>Madhur</td>
</tr>
</tbody>
</table>
Collection of Dravya on the basis of Guna-

Each of the Mahabhoota imparts specific physical quality to the Dravya as per the basic qualities of the concerned Mahabhoota. As mentioned earlier, the predominance of Mahabhoota determines the basic physical qualities of a drug. If a plant of specific qualities is to be collected than it should from the land which has the predominance of same Mahabhoota. The drug collected from this type of land will have more potency. Table 2 shows the relation between type of Dravya and Guna.

Table 2 Type of Dravya and associated Guna

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Type of Dravya</th>
<th>Guna</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Parthiva Dravya</td>
<td>Guru, Khar, Kathina, Manda, Sthira, Vishad etc.</td>
<td>Khadira (Acacia catechu Willd.)</td>
</tr>
<tr>
<td>2</td>
<td>Aapya Dravya</td>
<td>Drav, Snigdha, Sheeta, Picchila etc.</td>
<td>Kumari (Aloe barbadensis Mill.)</td>
</tr>
<tr>
<td>3</td>
<td>Aagneya Dravya</td>
<td>Ushna, Tikshna, Sukshma, Vishad etc.</td>
<td>Maricha (Piper nigrum Linn.)</td>
</tr>
<tr>
<td>4</td>
<td>Vayvaya Dravya</td>
<td>Laghu, Ruksha, Khara, Vishad, Sukshma etc.</td>
<td>Sirisha (Albizia lebeck Benth.)</td>
</tr>
<tr>
<td>5</td>
<td>Aakashiya Dravya</td>
<td>Mridu, Laghua, Sukshma, Salakshna etc.</td>
<td>Jatamansi (Nardostachys jatamansi DC)</td>
</tr>
</tbody>
</table>

Acharya Sushrut also gave practical application of this concept of collection of Dravya as per the qualities. Virechan (purgative) Dravya (drugs) should be collected from soil which is predominant with Jala and Prithavi Mahabhoota. Vaman (emetics) Dravya should be collected from soils which possess the qualities of Agni, Vayu & Aakash Mahabhoota. Ubhayabhagahara (having both purgative and emetic action) Dravya are to be collected from soil having Prithavi, Ambu, Agni, Vayu & Aakash Guna. Sanshaman Dravya should be collected from soil which possesses Aakash Guna.18

Collection on the basis of Virya-

Acharya Sushrut put forth that because of Saumya (~watery) and Aagneya (igneous) nature of umiverse, Saumya plants should be collected in Saumya seasons while Aagneya plants should be collected in Aagneya seasons so that their properties are not affected.19 Table-3 shows the relation of Virya and other properties of drug. Sharangdhar advocated the collection of Aagneya and Saumya Dravya from the specific regions. Aagneya Dravya should be collected from Vindhyaa region as these regions have ecological features which are Aagneya.

Table 3 Virya and other properties of drug

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Dravya Virya</th>
<th>Ritu</th>
<th>Bhumi</th>
<th>Dravya Guna</th>
<th>Rasa</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Saumya (Sheeta)</td>
<td>Saumya- Varsha, Hemanta, Shishira</td>
<td>Saumya</td>
<td>Atimadhura, Snigdha, Sheeta</td>
<td>Madhur, Tikta, Kashaya</td>
</tr>
<tr>
<td>2</td>
<td>Aagneya (Ushna)</td>
<td>Aagneya- Sharad, Vasanta, Grishma</td>
<td>Aagneya</td>
<td>Katu, Ruksha, Ushna</td>
<td>Amla, Lavana, Katu</td>
</tr>
</tbody>
</table>
Hence, the Aagneya Dravya collected from here will be excellent. Similarly, Saumya Dravya is to be collected from Himagiri as the ecological condition is Saumya\textsuperscript{20}.

Acharya Charak had stated that Himalya is the best place for procurement of drug\textsuperscript{21}.

**Collection on the basis of Karma (pharmacological action)**-

For every pharmacological action certain Guna (properties) are required which are the inherent qualities of particular Mahabhoota. This indicates that specific Panchmahabhoutik constitution of drug is required for specific pharmacological action. Acharya Sushrut advocated the collection of drugs from specific region as per their Panchmahabhoutik constitution for specific pharmacological action.

- **Virechan Dravya** (purgatives) should be procured from soil which is predominant with Prithavi & Jala Mahabhoota.
- **Vaman Dravya** (emetics) should be collected from the soil which possesses the qualities of Agni, Vayu & Aakash Mahabhoota.
- **Ubhayabhagahara Dravya** (having both purgative and emetic action) to be collected from soil having Prithavi, Jala, Agni, Vayu & Aakash Mahabhoota.
- **Sanshamana Dravya** should be procured from soil having Aakash Mahabhoota qualities\textsuperscript{22}.

**DISCUSSION**

The collection time of plant parts is also mentioned in botany.

- Leaves from the plants should be collected when the plant is very active, photosynthetic activity is maximum and the leaves contain maximum percentage of active constituents.
- Bark should be collected after 3-8 years of plant growth.
- To collect seeds fruits should be collected when they are ripe but before dehisce on the plant. For Eranda (Ricinus communis) capsules are collected from plants when they begin to turn brown. These capsules are exposed to sun. After 3-4 days, capsules burst suddenly and seeds flung out violently.
- Fruits should be collected when ripe but still firm.
- Roots are collected only after growth. Usually collected during summer. Else, any underground part should be collected when the plants have borne fruits, shed seeds and aerial parts have started to wither. Reasons for the collection at this time are-1. High active chemical composition is seen when vegetable growth is ceased.
2. They are fully mature, developed and of good quality.

3. As plants have already shed seeds, crop continues in next season through natural regeneration.
   - Sap is collected in the spring as it rises or as it tails in autumn.

These evidences show the scientific approach of Acharyas while mentioning the time of collection of raw drugs.

**CONCLUSION**

The concept of specific time and place of collection of raw drug ensures desired quality of raw drug. The place of procurement imparts specific qualities in the drug which are manifested as Rasa Panchaka of the drug. The time of drug collection ensures optimum efficacy of the drug. Thus, both Guna (properties) and Karma (actions) of the drug are affected by the place and time of drug collection. The modern parameters of drug collection should also evolve around Ayurvedic guidelines.
REFERENCES


3. Ibid 2


8. Ibid 5


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22. Ibid 18.