

**HARVESTING TECHNIQUES FOR MEDICINAL PLANT**

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ABSTRACT

Harvesting of medicinal plant is easy ones you know the basic technique. Explained many traditional practices for harvesting plants. The particular part to be collected from the proper place at proper time and season with suitable method. The proper collection aims to obtain a genuine drug with good potency, potency, quality, purity and safety. Explain about Plant Propagation, Collection of Drug as per Different Acharya. Specific guidelines like Guidelines for root harvesting, Guidelines for bark harvesting, Guidelines for leaf harvesting,

Guidelines for fruit harvesting, Whole plant, Flower part, Post-harvest handling, Drying, Storing.

KEYWORD: Post-harvest, Propagation, Guidelines, quality.

INTRODUCTION

The use of Medicinal plant in traditional healing is an important pillar of Health sector. About 80% population in India utilize AYUSH and LHT (Local Health Traditions) to help meet their primary health requirement. According to some studies out of about 9500 species in the country, 7500 are used for medicinal purpose by traditional and folk healers while 3900 for edible use, 700 for other material and cultural requirement, 525 as fiber and cordage, 400 as Food material, 300 as pesticide etc. 300 plant yield gum, resin, and dye about 100 species forms base for perfume in terms of the use of plant material and traditional medicine it is estimated that Local community used over 7500 species of plant.

In medicinal plant the active principle are made available through properly performed harvesting method. The Scientific behind ancient Ayurvedic harvesting method mentioned by

Acharya Charaka, Sushruta etc. A drug in its most active state i.e. having good potency. The particular part to be collected from the proper place at proper time and season with suitable method. The proper collection aims to obtain a genuine drug with good potency, quality, purity and safety.

MATERIALS AND METHODS

Plant Propagation

Propagation have been developed and adopted by scholars as endorsed by authentic literature viz. Rugveda, Brahmana, Brihat samhita, Kautily' Artha sartra (9.15,19) A variety of methods including seed collection, seed treatment, snowing of seed etc. Described in detail.

Major plant propagation method in Ancient India

Plant propagation method	Interpretation
Bijaruha	By seed -Seed collection method -Seed treatment -Snowing of seed
Mulaja	By Root
Kandyaropya and Skandhaja	Cutting and grafting
Agrabija and parana Yoni	Apical portion and leaves

The physician who is pure in mind and clean in body collect the herbs during sunshine praying to lord Shiva in silence herbs growing in northerly direction are to be collected. The Jala, Surya, Agni, Vayu and Pruthvi directly affected production growth and development of plants, Mahabhautik configuration and composition of drug to its pharmacological properties. (C.Su.26/10) The plant under cultivation and plant growing in wild gets different light hour (Agni), Soil condition (Pruthvi,) climate condition (Vayu) and water supply (Jala), change in mahabhautic composition and consequent change in medicinal properties.

Many Acharya mentioned Agni soumya nature of world, he suggested Ushna and Sheeta Veerya drug should collected in Agnaya rutu and saumya rutu respectively (S.Su.36/5) Thus with ongoing harm to the ecosystem through destructive harvesting of natural resources and unreliable collection practices, one should plan collect the drug with highest therapeutic activity so that the dosage required for prescription will be reduced, that will be helpful to reduce the improper and excessive harvesting of medicinal plants.

Acharya Charaka quoted an excellent design of drug research and given much importance to method of collection along with place, season of collection. He described the technical

excellence in the field of Pharmacognosy, Pharmaceutics and therapeutic sciences as “*Tasyapium pariksha idamevam Prakruti*” etc. here “*Desha jatam*” habitat, source, “*Rutum jatam*” Seasonal, “*Rutum gruhitam*” the time and season of collection of drug plays an important role in the field of drug research. *Acharya Charaka* and *Vagbhata* also quoted that the ideal drug is one which cures the disease and maintain the health. *Acharyas* also quoted the criteria of ideal drug which are “*Bahuta*” the drug should be easily available in large quantity, “*Yogyata*” Should be useful according to *Bala* of disease and patient, “*Anekavidha kalpana*” should be easily useful in different ways according to taste of the patient and stage of the disease,”*Sampata*” having good *Rasaveeryadi* qualities and therapeutic action (C.Su.9/7).

In *Ayurvedic* literature, drug collection has been described in four major steps i.e *Bhoomi pariksha* (Selection of land), *Sangrahaniya dravyas* (Selection of drug), *Sangrahaniya Kala* (Time and season of collection) and *Sangrahaniya vidhi* (Method of cultivating). To obtain good qualities of drug the proper place, season, method, time of collection and part of the plant to be collected having more importance. While collection, the factors such as *Guna*, *Desha*, *Kala*, *Pakva-apakva avastha*, *Nava-purana avastha*, *Prayojyanga*, *Karma*, *Disha*, *Nakshtra*, *Tithi*, *Muhurta* should be given more importance (C.Kl.S.1/10, S.Su.36/3, A.H.Kl.6/3-5)

Collection of Drug as per Different Acharya.

Prayojyanga	Charak	Sushruta	Ashtang sangraha	Raj Nighantu	Bruhat Nighantu ratnakara
Kanda	Sharad	-	Sharad	Hemant	Sharad
Ksheer	Sharad	Hemant	Sharad	-	Sharad
Mool	Greeshma	Pravruta	Greeshma	Shishira	Greeshma
Patra	Vaesha Vasant	Varsha	Vaesha Vasant	Greeshma	Varsha Vasant
Phala	Yatha rutu	Greeshma	Yatha rutu	-	Yatha rutu
Pushpa	Yatha rutu	-	Yatha rutu	Vasant	Yatha rutu
Pushpa	Yatha rutu	-	Yatha rutu	Vasant	Yatha rutu
Sara	Hemant	Vasant	Hemant	-	Hemant
Twaka	Sharad	Sharad	Sharad	-	-
Panchanga	-	-	-	Sharad	-

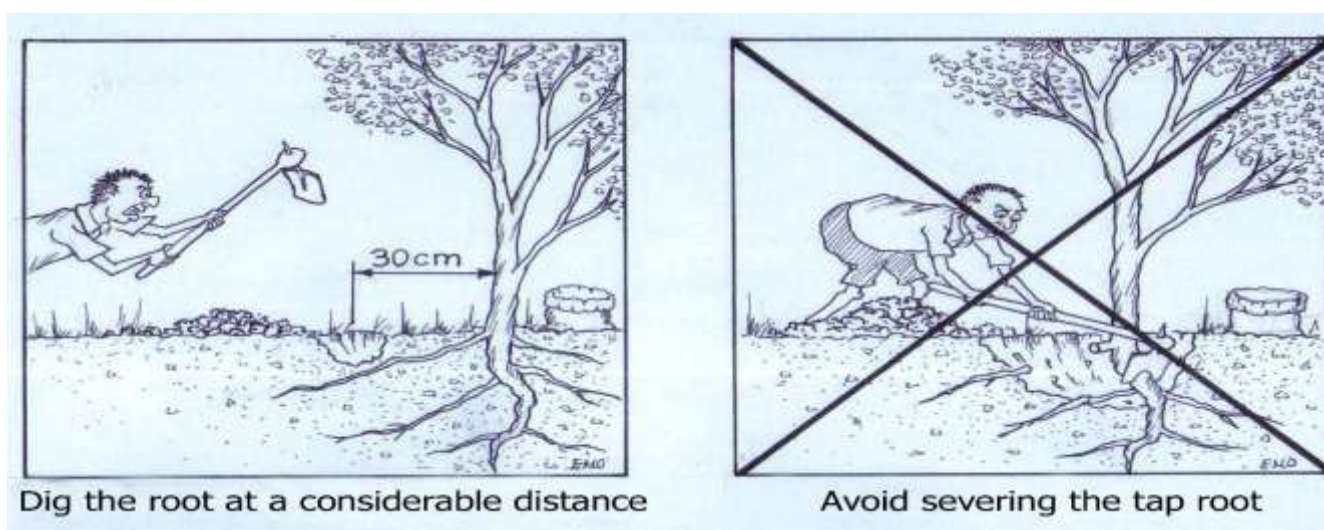
Therapeutic efficacy is depending on the quality and quantity of active principles which are influenced by the method of collection. On the basis of above description there is an importance of application of collection practices to attain desired therapeutic effect. This guideline is aimed at supporting traditional medicinal practitioners and will encourage and support the sustainable collection of medicinal plants of good quality in ways that preserve the medicinal plants and the environment. Choose healthy and well-developed plant material. Do not harvest plant material that is infested with fungal growth or insects.

Specific guidelines

➤ Guidelines for root harvesting

In many medicinal plants, the medically effective substances are found in the root. Thus, in many cases, the whole plant gets uprooted by the gatherers and Thus can never grow again. If this technique is used with a high number of plants in a short time, the plant will eventually go extinct.

- Dig the root at a considerable distance, at least 30 cm, from the main stem or tap root.
- Avoid severing of the tap root. Collect only the lateral roots.

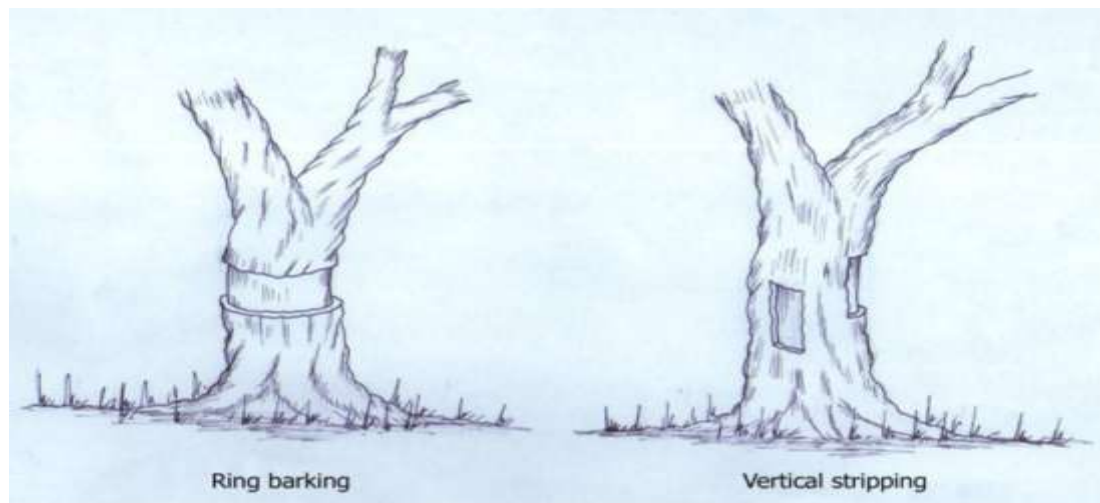


- After digging cover the hole to ensure protection against infection and invasion by pest.

➤ Guidelines for bark harvesting

Traditionally, bark is harvested with an axe or bush knife. If a particular species is in high demand and intensively used, the plant can become endangered by this technique. The most common unsustainable practice is ring-barking where entire rings of bark are removed around the tree, inevitably leading to death of the tree. In order to ensure sustainable harvest of bark material the following:

- Peel the bark from the tree in small pieces leaving most of it intact on the trunk on the East and West side of the tree as has been the tradition. Remove the bark in long vertical strips using a thin flexible blade/bush knife.
- Do not practice ring barking, which is the cut of off entire rings around the tree.
- Remove the bark in small sections and leave some inner bark to protect the wood.



Possibly use 'tree seal', e. g. apply a piece of wet cow-dung to the bark wound. This will prevent the wound from drying out, though it does not facilitate bark recovery or prevent the development of insect infestation or development of infections on the wound.

➤ **Guidelines for leaf harvesting**

Leaf harvesting is regarded as least destructive form of harvesting to the plants. collection of all the leaves from the tree including cutting down the branches and twigs. In order to ensure sustainable harvesting of leaves it is recommended that one can:



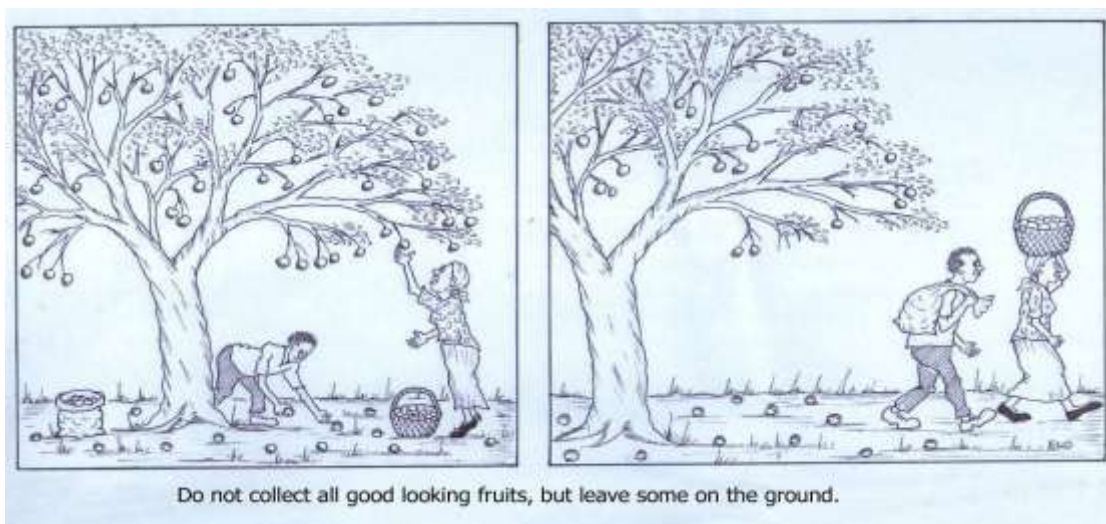


Pluck individual leaves instead of leaf stripping and avoid use of sharp pruning shears for leaves. Regularly prune branches to improve the quality and quantity of leaves. Injure a limited number of roots to encourage sprouting of new root suckers.

➤ **Guidelines for fruit harvesting**

The commercial harvesting of fruits can affect not only species regeneration but also, the quality of the resource in an area. This is particularly the case if the fruits and seeds of an inferior quality, such as small and rotten ones, are left to regenerate.

Do not collect all good looking, high quality fruits but leave some on the ground so that more plants of good quality can germinate.



➤ **Whole plant**

When collecting whole herbaceous plant on its aerial part, harvesting should be done at flower bud. Whole population should never be harvested.

➤ **Flower part**

Flower buds must be collected before buds open and early morning hours. Flower harvested when they have just opened. Floral parts like stigma, anther should be collected appropriate time of maturity.

➤ **Gums and Resins**

Ensure minimum harm to mother plant while collecting exudates few longitudinal incision should be made and exposed part should be avoid foreign matter mixed with gums and resins removed. Younger tree should not be tapped.

Post-harvest handling

After harvest, the harvested fresh plant material undergoes a variety of Processes which can be either desirable or undesirable. Through the harvesting Process, the balance of substances within the plant is disturbed. Such processes are likely to alter the effectiveness of some of the active ingredients.

Arriving at the place for drying or processing, unload and unpack the plant materials promptly as possible. Preliminary processing. This could include including inspection, elimination of undesirable materials and contaminants, washing, sorting and cutting. The inspection may include: Visual inspection to make sure that no untargeted medicinal plants and/or Plant parts is included. Visual inspection for foreign matter,

- Quality evaluation such as: damage, size, color, odor and possibly medical properties,
- Take care to ensure that no foreign matter, weeds, or toxic plants are mixed with the harvested medicinal plant materials.

Take care that the Building-facilities that you use for drying or processing are clean, well aerated and never used for animal keeping.

Make sure that the building-facilities provide protection of the plant-material against pests, rodents, insects and birds as well as against pets and domestic animals.

- Make sure that equipment like drying-frames etc. are clean and regularly serviced.

DRYING

- Give adequate consideration that drying conditions are chosen appropriate to the type of plant-material processed.
- In case of air-drying, spread the plant-material in a thin layer.

- Make sure that the drying frames are located in a sufficient distance from the ground to provide adequate air circulation and facilitate uniform drying.

STORING

- Pack the dried plant-material immediately in bags or containers permitting air exchange in order to reduce the risk of pest attacks and mould.
- Do not store the harvested material in closed and unventilated containers e.g. plastic bags.

Generally, the collection of fruits, flowers and leaves has less adverse immediate impact, whereas the collection of bark, roots, and even whole plants is more likely to be destructive.

The regulation should also draw on the harvesting practices.

Observing ethical, legal and social rights of all those concerned in the Communities where the plants are native. A purposeful increase of production and or productive capacity of some plants is Another option for managing medicinal plants in order to reduce Pressure. These May include Management of the coppice regrowth on cut stumps in the forest to support.

CONCLUSION

Plant are affected by the time of day and the season, changing throughout month and year. As the pulling of the plant shift, affected lunar cycle. The full moon is the optimum time to harvest above ground parts (Leaf, flower, stem and bark), and new moon is the time of harvesting the roots. Described in detail. Major plant propagation method in Ancient India. Acharya charak described the technical excellence in the field of Pharmacognosy, Pharmaceutics and therapeutic sciences as “*Tasyapium pariksha idamevam Prakruti*” etc. here “*Desha jatam*” habitat, source, “*Rutum jatam*” Seasonal, “*Rutum gruhitam*” the time and season of collection of drug plays an important role in the field of drug research In *Ayurvedic* literature, drug collection has been described in four major steps i.e *Bhoomi pariksha* (Selection of land), *Sangrahaniya dravyas* (Selection of drug), *Sangrahaniya Kala*.

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