



MEDICINAL PLANTS AND THEIR CONSERVATION

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ABSTRACT:

Plants are the main organisms which have localized almost every part of the earth. Most of the plants are having medicinal properties which are used for the curing of various diseases since from the origin of the mankind. Due to the over exploitation, urbanization, industrialization these plants are under danger and proper care is needed for their sustainability. Many of the plants are already vanished from the earth and occupied their place in the dead data book. As these plants are having medicinal values to cure and treatment of many deadly diseases conservation of these plants should be done. They can be protected by adopting several methodologies and techniques such as traditional methods of conservation, *insitu* and *exsitu* conservation etc. it is the duty of each and every person to protect the plants and their habitat for better future.

Key words: Conservation, Medicinal plants

INTRODUCTION:

Majority of the earth surface is covered by the plants. Most of the plants are having medicinal property and plants with medicinal property are called as medicinal plants. Since time immemorial medicinal plants are known to the man. These plants are used for the treatment of several diseases including, cancer, AIDS, diabetes, asthma, skin disorders etc. Nearly 80% of the world population is depended on the medicinal plants for the treatment (Fowler, 2006).

According to ayurveda every plant is having one or other medicinal property. As the forests are the main habitat for the tribal communities, they are having very well knowledge of plants and their uses (Santhya 2006). Tribal play important role in the conservation of medicinal plants. Plants and plants products are continuously exploited for treating of various ailments in both developing and developed countries (Smith-Hall et al., 2012; Sasidharan et al., 2011). Due to the less side effect, natural

products, easily accessible medicinal plants or herbal products performing multi-million-dollar business; which also contribute lot in the development of rural and tribal communities (Katerere et al 2008; Eloff et al., 2011). The growing world population, industrialization, increasing anthropogenic activities, rapidly eroding natural ecosystem, etc are affecting on natural habitat causing a great loss of herbs and trees. Some of the plants have become extinct and most of them are facing extinction (Sharma et al., 2010).

As these plants are having valuable property of medicine proper care and conservation is needed. There are many methods of plant conservation such as plant tissue culture, in situ and ex situ conservation, establishment of medicinal gardens, green house construction, germplasm preservation etc. The main aim of this article is to concentrate on the importance of medicinal plants and methods of conservation.

Threats to plants

Medicinal plants are the main source of drugs globally they are used widely for the treatment of various diseases. Nearly 80% of people from developing countries are and 25% of people from the developed countries are dependent on the herbal drugs (Shukla et al., 2011). The use of the medicinal plant is increasing due to the increase in the demand for herbal drugs, and secondary metabolites (Nalawade et al., 2003). A recent observation states that the loss of plant species in current situation is between 100 to 1000 times higher than the expected natural extinction rate (Cole et al., 2007).

Recent report of International Union for Conservation of Nature (IUCN 2021-1 version) shows that from the entire world 164 plants are extinct, 545 plants are critically endangered, nearly 21,726 plants are threatened and 32,237 plants are at low risk or least concern total comprising of 54,127 plants species. In India 4 plants are extinct one plant is at critically endangered, 457 plants are threatened and 1,846 plants are facing low risk of endangered total adding 2,307 plant species.

Need of conservation

The above data shows that plants are in very much need of conservation as they are facing threats worldwide. Many pharmaceutical drugs which are used today are mainly derived from the plants only, which were used in traditional medicine system (Fabricant and Farnsworth, 2001). Nearly 30% the drugs sold worldwide contain compounds derived from plant material (FAO, 2005).

The plants are having medicinal property due to the presence of chemical compounds in them. These chemicals are called as phytochemicals or secondary metabolites; their main function is the defense against the predators and infections. Many of these phytochemicals are beneficial to the human being as they can treat

various diseases (Padmavati 2013). It is estimated that globally 60,000 species are used for medicinal, nutritional and aromatic purposes and every year more than 5,00,000 tons of material is traded from such species (WHO, 2015; Traffic International, 2015).

Plants are having fewer side effects or no side effect on the human body hence they are using widely. They are easily available with low cost. They heal many of the deadly diseases such as cancer, diabetes, AIDS, malaria etc. even they also acts as preventive substance for many of the diseases along with this they also improve the immunity of our body. They are not only used for medicine but also for shelter, aromatic products, cosmetic products and also as a food. Plants are the main source for the tribal and village community in establishing their economic balance.

Methods of conservation

To maintain the ecological balance in the environment and for the better future of the world they need to be protected. Some of the methods are mentioned as follows-

Role of government and people in conservation of plants

The governments and NGO's are encouraging the peoples for the plantation of trees regularly. Making some the strict rules or Acts such as WWF, Wildlife Protection Act etc. also protecting the plants. Tribal and village peoples are familiar with the importance of plants ritually and economically. They usually protect these plants by adopting several methods such as, planting of the important trees in and around their houses or premises; establishment of sacred grooves near temple or holy places. Tribal peoples protect the plants from the modern man.

In situ Conservation

For the betterment of the plants and to maintain balance in the ecosystem natural

habitats should be protected. *In situ* conservation is the method of conservation of natural habitat at its original region or places, or it is a protection or conservation of plants without damaging ecosystem. This can be done by establishing the Sanctuaries, National Parks, Biosphere, Hotspots etc. In India 104 National parks, 566 Wildlife Sanctuaries, Biosphere 14, Biodiversity hotspots 4 are established for the conservation and protection of the plants and natural habitats (ENVIS).

Ex situ Conservation

It is method of conservation of natural resources at established or offsite conservation. This method includes- Botanical gardens, plant tissue culture, cryopreservation germplasm conservation etc. botanical gardens are the places where exotic, endemic, medicinal and economically important plants are planted. These gardens provide protection to the plants in controlled area. Botanical gardens also helps researchers for the study of plants morphology, physiology anatomy etc.

Plant tissue culture is the one of the modern technique of plant conservation. Here a cell or tissue or an organ is used for the production and multiplication of the plants. Many numbers of plants can be produced within a short time of period in controlled environmental conditions. Cryopreservation where plant cell, tissue or organ is preserved in very extreme low temperature for longer period and whenever necessary they are used for the production of plants (Kadam and Pawar 2020).

CONCLUSION:

Plants are having medicinal values used for the curing of many of the diseases. Due to the anthropogenic activities plants are threatened and they are in danger condition. The present and future of the human is depends on the existence of plants. Hence protection and conservation of

the medicinal plants is very much necessary. It is the responsibility of the each and every person.

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