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Full Length Review Article

REVIEW ARTICAL ON IN SITU AND EX SITU CONSERVATION OF MEDICINAL PLANTS

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ABSTRACT

Medicinal plant and traditional medicine play an important role in health care system of most developing countries. Conservation of threatened species of medicinal plant and their habitat and support for livelihood security through protection of medicinal plant. Traditional health care system is mainly dependent on medicinal plant collected from wild medicinal plant bio-diversity is being depleted due to man made natural calamity. There is need of conservation of medicinal plant in the in situ and ex situ.Conservation of medicinal plant is to support sustainable develop protecting and using biological resourses in ways that do not diminish world's variety of sense and species or destroy important habitat and ecosystem. This review artical focus on support for conservation, management and sustainable utilization of medicinal plant for human and live-health care and to promote in situ and ex situ conservation.

INTRODUCTION

India ranks under world's twelve mega bio-diversity zone. India posseses tremendous ecological bio-diversity. It contains 5% of world's bio-diversity and 2% of earth's surface. The bio-diversity in our country is unique in nature and it's in situ and ex situ conservation is very well needed. In recent years, the global demand of herbs has lead to a quantum jumps in volume of medicinal plants traded within and across the countries. The medicinal plants have been identified as one of the most important plant diversities for rural development. The use of plants as medicine is as old as civilization itself. During recent years, ethno-botanical research on medicinal plants is getting much importance and it has been considered as thrust area in field of biological research. It is well known that lot of emphasis is being given on conservation of medicinal plants by Govt.of India. This paper deals with in situ and ex situ conservation of medicinal plants. Situ is a latin phrase that means "in position","locally","on site." In situ conservation is the "on site conservation." It is conservation of generic resources in natural population of plant species.It is a process of protecting an endangered plant species in its natural habitat.

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Ex situ conservation means literally "off site conservation." It is process of protecting an endangered species of plants outside its habitat, for example-by removing part of population from a threatened habitat and placing it in a new location, which may be a wild area or within the care of humans.

Aims

In situ conservation aims to enable bio-diversity to maintain itself within the contact of the eco system in which it is found, where as ex situ conservation aims to conserve rare and endanger species.

Objective

The objective of such programmes is -to create a new population in the original environment, to promote conservation, cultivation and growth of important medicinal plants species.

In situ conservation Methods

In situ conservation, the conservation of species in their natural habitat, is considered to be the most appropriate way of conserving bio-diversity. Conserving the areas where

population of species exits naturally is an underlying condition for the conservation of bio-diversity. Around 4% of total geographical area of the country is used for in situ conservation. The following methods are presently used for in situ conservation- Biosphere reserve- It covers very large area. It is used to protect species for a long time. National parks- It is an area dedicated for conservation of wild life along with its environment. It is usually a small reserve. Wild sanctuaries- it is area reserved for animals. Gene sanctuary- a gene sanctuary is an area where plants are conserved.

Ex situ conservation Methods

Ex situ conservation is the preservation of component of biological diversity outside their natural habitat.This involve conservation of genetic resources as well as wild and cultivated species.Some of these include-

- Gene bank- e.g. seeds banks, sperms and ova banks, field banks.
- In vitro, plant's tissue and microbial culture collection,
- Artificial propogation of plant with possible reintroduction in wild.

Observation

Benefits of in situ conservation is that, if maintain recovering population in the environment where they have developed their distinctive properties. Another benefit is that, this strategy help to ensure the ongoing processes of evolution and adaptation within their environment. Ex situ conservation is off site conservation to protect endanger species. Ex situ conservation is an essential alternative strategy when in situ conservation is inadequate. Ex situ conservation is to be used as a last resort or as a supplement to in situ conservation because it cannot recreate the habitat as a whole. The drawbacks of ex situ conservation are, they are costly and seed banks are ineffective for certain plant genera.

Dissection

We can therefore see that bio-diversity conservation is a complex and articulated process. In situ conservation is effective when the number of individual involved is sufficiently large. It is severely limited by fragmentation and the consequent reduction in population number. On the other hand, ex situ conservation programmes, because of absence of interaction with the natural environment, preserve only a fraction of genetic diversity of the tax a concerned. Sometimes ex situ conservation is the only choice because if no species longer exist in wild.

Conclusion

The conservation of forest genetic resources is a multi dimensions process. It needs global and regional coordination. In situ measures are the primary conservation approach because they provide a more holistic strategy for conservation, by allowing easier conservation of a greater number of ecological and evolutionary processes. The use of ex situ conservation is recommended if in situ conservation, the preferable conservation alternative, is not available or not functional for the near term survival of species. The main objective of ex situ conservation is to safeguard population or individual that are in danger of physical distribution when protection in situ is not possible.

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