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CONSERVATION STRATEGIES FOR PTERIDOPHYTES THROUGH DEVELOPMENT OF FERNERY

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ABSTRACT
The suitable conservation strategies for pteridophytes are depended on their habitat requirements and population dynamics in Western Ghats. Ferns and Lycophytes are ecologically important and contribute 4% of the vascular plant diversity on Earth but currently face an unprecedented threat caused mainly by human disturbances such as fire or land use change. However, for any conservation measure to be successful it is inevitable to have a well-developed co-ordination between the scientific institutes and governmental agencies. The ex-situ approaches are considered to be important tools for pteridophyte conservation as they aid in increasing their survival chances. In the present study we have been assessed ferns species from the Northern Western Ghats of Maharashtra based on abundance, occurrence and their geographic distribution. The ecological characteristics such as habitat, fundamental biological factors, population dynamics and environmental disturbances are considered for the conservation strategies. Therefore we are trying to conserve them at our institute through development of a fernery. Most of them are conserved in fernery and efforts are going to conserve other species by consulting through scientist, experts and commercial growers.
Keywords - Conservation strategies, Pteridophytes, Northern Western Ghats of Maharashtra.

I. INTRODUCTION

The pteridophytes themselves do not constitute any major vegetation type in India. They are, however, associated with a variety of habitats and micro-habitats found in this country. For their healthy life and continuation, it is very important to protect these special environmental conditions that have preserved them through various geological ages. Each fern species has its own preferences for temperature, humidity, soil type, moisture, etc. although much work needs to be carried out to ascertain these special micro-climatic conditions [1].

The different range of habitats of pteridophytes include moist or dry rocks and borders, tree trunks, fresh water bodies, including marshes and swamps, even mangrove swamps, forest floors and edges, alongside perennial streams, deep ravines and gorges, grasslands and cultivation areas of various crops, specially of tea, coffee and cardamom. Biodiversity conservation is the need of time and hence, it has become very important to develop *in situ* and *ex situ* conservation strategies for conservation of the losing ground biodiversity. The *in situ* conservation is very beneficial as it allows the evolution of the species to continue within the area of natural occurrence.

Hence, the steps for conserving the ferns *in situ* should be taken. The *ex situ* conservation includes development of botanical gardens or conservatories, germplasm banks, DNA banks, seed banks and involve the use of techniques such as tissue culture, cryopreservation; incorporation of disease, pest and stress tolerance traits through genetic transformation and ecological restoration of rare plant species and their populations. Developing a fern conservatory or fernery is not preferred much and hence, such steps should be considered and

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Use of Biological Agents to Control *Xanthomonas Axonopodis PV. Punicae* (Hingorani & Singh)

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ABSTRACT

Pomegranate production in India is severely hampered by the high incidence of bacterial blight disease caused by Xanthomonas axonopodispv. punicae. (Hingorani& Singh). The present study aims to control the disease with newer biocontrol methods. Five biocontrol agents viz., Trichoderma viride (Fungi), Trichoderma harzianum (Fungi), Pseudomonas fluorescence (Bacteria) ,Pseudomonas putida (Bacteria) and Bacillus subtilis(Bacteria) were tested for their antagonistic potential against the growth of Xanthomonasaxonopodispv. punicae causing bacterial blight of pomegranate by inhibition zone assay method. Pseudomonas fluorescence M,Bacillus subtilis and Trichoderma harzianumP were found significantly superior in inhibiting the growth of the pathogen (percentage of inhibition is 42.5 and 37.05 , 41.25 and 36.25 , 28.75 and 26.25 for sensitive and resistant resp.) while Trichoderma virideP.and Pseudomonas putida M. were ineffective as they failed to inhibit the growth of X.axonopodispv. punicae(percentage of inhibition is zero).

Key words : Bacterial blight, Biocontrol agents,Xanthomonas axonopodis.

Introduction :

Pomegranate (Punica granatum L.) is a fruit-bearing plant. It is native of Asia Minor. It is widely cultivated in many countries of Asia such as Turkey, Iran, Armenia, Pakistan,

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Effect of Microclimatic Factors with Special Reference to light Intensity on Leaf Area of Athyrum Hohenackerianum (Kunze) T. Moore

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ABSTRACT

Microhabitat is a small or restricted area, which differs from surrounding habitat and plays a very important role in the development of plant Pteridophytes are one of the important groups of plant kingdom, prefers to grow moist and shady places. The lady fern species, Athyrium hohenackerianum(Kunze) T. Moore is most common species family Athyriaceae andto flourish prefer shady place. In the present investigation A. hohenackerianum was observed from different localities Maharashtra state in different seasons having different light intensity. It was observed that the highest leaf-area was recorded in late rainy season and minimum was recorded during winter and spring season.

Keywords: Microclimate, Athyrium, leaf area etc.

Introduction :

Leaf is important part of plant which have unique mechanism of food production. Leaves are important plant part in plant ecology because they are associated with many critical aspects of plant growth and survival (Garnier et al., 2001; Shipley and Vu, 2002). Leaf area is used to understand primary production of plants and used as a reference tool for crop growth. It has been shown by many workers (Poorter& Van der Werf, 1998; Van der Werf et al., 1998; Wilson et al., 1999). The variations in leaf-size and texture amongst the ferns has been used as a general guide in certain cases to qualify species as more primitive or

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