CHAPTER IV

SUMMARY AND CONCLUSION

All the states of our country have sizable tribal population. Its 53 million tribal people is perhaps the second largest country in the world, next to Africa, possessing a good treasure of accumulated tribal knowledge. Tribal people and aborigines all over the world use an enormous range of wild plants for their basic needs. Plants have always been the sources of food, medicine and other necessities of life since ages.

In India, tribal communities are mainly concentrated in four regions namely, Central and Eastern India (59%), North Eastern India (18%), Western India (29%) and Southern India (5.2%).

The Agasthiayamalai Biosphere Reserve has many endemic heritage and inhabited by various ethnic groups such as Kanikaran, Paliyars and Thodars etc. Kani tribals are one of the primitive people and settled in Agasthyamalai. There are totally 102 families and total population is approximately 350. They are settled in Servalar, Agasthiar kanikudiyiruppu, Chinnamayilar, Periyamayilar and Ingikuzhi at Tirunelveli zone in Tamilnadu.

Experts of the Kani Tribal traditional medicinal practices were interviewed in five settlements such as Servalar, Agasthiar kanikudiyiruppu, Chinnamayilar, Periyamayilar and Ingikuzhi in Agasthiamalai, Tirunelveli zone. The ancestral traditional knowledge of Kani tribal people including reliable traditional doctors, the native plants used for the preparation of drugs and methods of their administration along with doses were recorded, collected through
questionnaire as well as informal personal interviews. Field trips were carried out in the study area totaling 107 days during October 2005-October 2008.

Plants in triplicates were collected in its flowering or fruiting stage from their natural habitats. Voucher specimens were deposited in Xavier’s College Herbarium (XCH), Tirunelveli. All plants were identified by using relevant floras.

All the collected information was documented in a Computer program using Visual Basic 6.0 as front end and MS Access as back end. The database contains the botanical name, family, vernacular name, habitat, description, plant parts used, ethnomedicinal use, ethnobotanical use, herbal formulation, dosage and the picture of the plants. The conservation problems, the indigenous technological knowledge and the management of biological resources of the tribals in the study area, were also documented.

From the field experience and interaction with the tribals, the researcher has understood the need for conservation of rare and endangered species. Hence, the researcher started the germplasms collection of rare and endangered species and kept in the greenhouse in St.Xavier’s College (autonomous), Palayamkottai. Among these species Dioscorea alata L., and Tylophora subramanii A.N.Henry were collected. These were propagated through tissue culture using standard protocols with an intention of reintroducing them in the natural habitat.

213 species have been reported for ethnomedicinal uses and 113 species have been reported for technological knowledge. This shows that the richness of knowledge of the
tribals. The observation of conservation problems in the study area helped to judiciously use the technological knowledge of the tribals to conserve the area.

Among these species *Dioscorea alata* L., and *Tylophora subramanii* A.N.Henry were identified and were propagated through tissue culture using standard protocols.

The nodal explants were started its growth after one week of culture on MS medium with BAP+Kn+NAA compositions 0.9+0.2+0.4 mg/l in *Tylophora subramanii* A.N.Henry and BAP+Kn+NAA compositions 1.0+0.5+1.3 mg/l in *Dioscorea alata* L. Maximum number of shoots were obtained in the medium supplemented with Kn 0.3 mg/l after 30 days of culture.

To study the synergistic effect, Kn and BAP were selected as the representative. Kinetin and BAP were favorable since the highest shoot numbers were obtained within 40 days after culture in both the plants. However, shoots and leaves grew vigorously in Kn and BAP containing medium. In the present study best results were obtained with Kn and BAP supplemented to the MS medium. However, in addition of Auxin did not improve the proliferation but increased callus at the lower end of the explants.

After four weeks the regenerated shoots were taken out and transferred to the rooting medium. Root induction could be seen within 15 days and prolific roots were initiated within two weeks on MS medium with NAA in both the plants.

The deterioration of the wild flora of this area is to be blamed on population pressure, forest fires, overgrazing, and browsing. The present population has little knowledge about the
medicinal plants of this area because most of the knowledgeable, older persons have passed away and the younger ones are not as informed of traditional methods. However, as in the past, some empirical knowledge of medicinal plants among the tribes continues to be developed and transmitted orally from generation after generation.

These medicinal plants are used for various diseases by the Kani tribes. This knowledge can be used in the evaluation and creation of awareness of the importance of medicinal plant as it is generally easier for the public to relate to the cultural significance than the results of scientific trials. Exploitation and documentation of traditional medicine is essential for the future.

Thus, the present study helped to understand the Traditional Botanical Knowledge of Kani tribes. The documentation is essential to preserve the Traditional Botanical Knowledge of Kani tribes. Further, they have to be trained and awareness should be given for the conservation of biodiversity in this rich area.

The development of an in vitro regeneration system is an integral part and an essential prerequisite for studies related to propagation, conservation and genetic improvement. In the present study, in vitro regenerable systems were developed in the rare medicinal plants of Dioscorea alata L. and Tylophora subramanii A.N.Henry. Obviously, regenerated shoots can be rooted readily providing a rapid clonal propagation. In addition, roots were obtained from NAA containing medium. Growth regulators also play a significant role in determining the pattern of regeneration. In conclusion, the induction of plantlets by
culturing node and internode of *Dioscorea alata* L. and *Tylophora subramanii* A.N.Henry was done.

The described method can be successfully employed for large scale multiplication and establishment of the rare medicinal plants *Dioscorea alata* L. and *Tylophora subramanii* A.N.Henry. The use of simple medium of shooting and rooting and single step *in vivo* hardening are marked achievement and can be used for low cost, and large scale micropropagation and restoration of these rare medicinal plants within a short period of time.