Chapter- 6 : SUMMARY AND CONCLUSION

The climate and humidity of N.E region of India are favourable for growth of macrofungi. But due to human disturbance in forest, macrofungal habitats are reduced day by day. Still some macro fungal habitats survive in disturbed areas. Wood inhabiting macrofungi are great recycler of wood and woody materials in the forest ecosystem. Macrofungi are extremely important beneficial organisms for several reasons. But they may cause deterioration and losses to the trees and ultimately affect the timber industry. In the present investigation an attempt had been made to survey the macrofungi. For this purpose nine Reserve Forests in Dhemaji district of Assam were surveyed. The outcome of the present investigation is summarized as under.

The sample areas which include nine Reserve Forests were surveyed and samples were collected during the month of June to November during 2010-2012 for the study. The sample areas were as follows- Poba, Gali, Chengajan, Zamzing, Simen, Dulungmukh, Sissi, Subansiri and Jiadhal. Macrofungi were collected from these forests and preserved. Total 55 species could be identified and these were belonging to both Ascomycotina and Basidiomycotina. In Ascomycotina two species recorded which include two classes and two families. These two species were $\textit{Lachnea hemisperica}$ (Wigg.) Gill and $\textit{Xylaria polymorpha}$ (Pers. ex Fr.) Grev. In Basidiomycotina 53 species were recorded and among these 45 species include $\textit{Hymenomycetes}$ and six species include $\textit{Gasteromycetes}$. Among these 35 genera belonged to 23 families. The species were $\textit{Agaricus bisporus}$ Quell, $\textit{A. campestris}$ L., $\textit{A. porphyrocephalus}$ F.H. Moller, $\textit{A. smithii}$ Kerrigan, $\textit{Amanita citrina}$ (Schaeff.) Pers., $\textit{Armillaria mellea}$ (Vahl. ex. Fr.) Karsten, $\textit{Auricularia auricula}$ (Hook.) Underwood, $\textit{Cantharellus cibarius}$ Fr., $\textit{Calvatia cyathiformis}$ (Bose) Morgan, $\textit{Clavaria cristata}$ (Holmsk.) Pers., $\textit{Coprinus micaceus}$ (Bull ex. Fr.) Fr., $\textit{C. atramentarius}$ (Bull. ex. Fr.), $\textit{Collybia esculenta}$ (Wulfen) Fr., $\textit{Cortinarius alboviolaceus}$ (Pers.ex Fr.) Fr., $\textit{Cyathus olla}$ (Batsch) Pers., $\textit{Daedaleopsis confragosa}$ (Bolton.) J. Schrot., $\textit{Fomes fomentarius}$ (L.) Fr., $\textit{Ganoderma lucidum}$ (Leys ex Fr.), $\textit{G. applantum}$ Pers. Pat, $\textit{Geastrum triplex}$

Percentage of family of macrofungi was recorded in the sample areas where polyporaceae recorded highest percentage.

Out of 55 species, *Auricularia auricula* (Hook.) Underwood, *Marasmius siccus* (Schw) Fr. and *Schizophyllum commune* Fries were recorded from all nine Reserve Forest of the district, this could be due to similar microclimate and vegetation influencing the composition of the macrofungi species. Highest numbers of macrofungi species were recorded from Jiadhal Reserve Forest of the district.

Frequency of occurrence of macrofungi was recorded from the surveyed areas. *Auricularia auricula* (Hook.) Underwood, *Schizophyllum commune* Fries and *Marasmius siccus* (Schw) Fr. were recorded highest frequency of occurrence.

Density of macrofungi was recorded in June to November during 2010-2012 in these sample area of the district. Lowest density of species recorded in the year 2011. It is pertinent to note that the rainfall in the year 2011 was lower than those of 2010 and 2012.

Macrofungi collected from different substrata where highest number of macrofungi recorded from dead wood followed by soil.
Spore print of macrofungi was recorded where brown and white colour spore prints found in these species.

Odour of macrofungi was recorded and found mild and sweet; otherwise most of the species were odourless.

Chemical reaction of macrofungi with KOH was examined where maximum species were recorded as no reaction with KOH.

Basidial size and shape of macrofungi were recorded where club, clavate, spindle and cylindric shaped found.

Shapes and size of basidiospores were examined and elliptical shaped basidiospore were found in maximum cases.

Distant, crowded, decurrent and forked gills structure were observed in case of gilled macrofungi but amongst them the crowded gills were found in many cases.

Presence of annulus and volva, the two prominent characters were observed in the gilled fungi and out of them ten species posses annulus where as six species had volva.

The studied macrofungi with circular, ovate, elongated, angular shaped pores and with tiny leathery and fibrous structures were observed.

Most of the macrofungi studied so far have got immense importance from Ethnomedicinal or Ethnomycological point of view. Five species amongst them were used for medicinal purpose, 14 species as edible, 20 species non edible and two species poisonous.

The uses of macrofungi by ethnic groups were studied and recorded that eleven species had been used by them.

It is a matter of fact that the study of macrofungal diversity is definitely unveiling the knowledge of this group of important organisms. Very scanty of informations about the macrofungi was available in this part of our country. However, some of
them are edible and delicious too. It is hoped that this work would enrich and pave the way for further study of macrofungi and exploration of bioactive principles and toxin complexes for their medicinal uses.