CHAPTER 6

SUMMARY AND CONCLUSION

It is observed from this studies both qualitative and quantitative data on survey of different Som cultivation sites of Goalpara district of Assam and these were collected from the diseased samples. Five major muga silkworm rearing villages of Goalpara district, Assam were selected depending upon the direction namely Dorapara agia on the Centre, Budlung pahar on the North, Lengopara on the South, Buraburi on the East and Kalyanpur bhalukdubi on the West respectively for collecting the leave, soil and air samples during six muga crop seasons. The study was conducted from February, 2014 to January, 2016. During the study period it was recorded that the major foliar diseases in som were Grey blight, Leaf blight, Leaf spot and Leaf rust. Among which occurrence of grey blight were maximum in all the study sites throughout the muga growing season of the year. The symptoms and the disease intensity of the four major foliar diseases Grey blight, Leaf blight, Leaf spot and Leaf rust of *Som* and quantum of loss caused to the foliage were recorded. The epidemiological studies of the most common diseases of the district showed that the disease occurrence were maximum during the Aheruwa generation of the muga silkworm. During high temperature, humidity and rainfall the disease incidence were the highest. Among all leave types taken tender, semimature and mature, it was observed that the disease incidence were encountered only on the mature leaves while there were absence of disease on the tender and semimature leaves. Among the five study areas , it was seen that the Lengopara site is highly effected with grey blight disease during the *Aheruwa* crop of muga silkworm while maximum temperature were 34°C and minimum temperature 20.75° C, humidity 92% and minimum 63% and rainfall were 4286.25 ml. It was seen that the high temperature, humidity, rainfall and topography of the area effects the growth of the pathogens and disease as well. It was also observed that during low temperature, low humidity and low rainfall conditions the disease intensity were less. The *Som* plant leaves were highly affected by Grey blight, Leaf blight, Leaf spot and Leaf rust during the *Aheruwa* and *Bhodia* generation of muga silkworm. This study also gives the qualitative and quantitative data on non-rhizosphere & rhizosphere soil, air and phylloplane mycoflora of *Som* from the selected villages of Goalpara district of Assam

during all the six generations of muga silkworm in a year i.e. the *Jaruwa*, *Chatuwa*, *Jethuwa*, *Aheruwa*, *Bhodia* and *Kotia*. It was seen that the climatic factors such as temperature, humidity and rainfall effects the occurrence of soil, air and phylloplane mycoflora of som. This study also revealed the physicochemical properties and texture of soil samples of *Som* plantation area as well as biochemical constituents of *Som* leaves. Seasonal effect on physicochemical properties of soil as well as biochemical constituents of som leaves were also observed. As the disease incidence of grey blight is maximum in occurrence hence detailed studies were conducted for grey blight disease and an attempt has been made to control the dominant fungal pathogen *Pestalopsis disseminata* which causes grey blight disease in *Som* with the help of both systemic and non-systemic fungicides i.e. extracts made from the commonly available plants. Among all the four systemic fungicides taken viz. Bavistin, Topsin M, Mancozeb and Copper oxychloride all the three fungicides showed 100% inhibition at different concentration level except the chemical fungicide Copper oxychloride against the grey blight of som causing pathogen *Pestalotiopsis disseminata*. Similarly five commonly available plant species viz. *Azadirachta indica, Bougainvillea spectabilis*, *Eupatorium odoratum*, *Lantana camara* and *Lucas aspera* aqueous extracts were used for the control of grey blight causing *Pestalotiopsis disseminata.* Among all the plant extract used *Azadirachta indica* showed the maximum inhibition of the fungal mycelium against control which was followed by *Bougainvillea spectabilis* and *Eupatorium odoratum*. On the other hand *Lantana camara* and *Lucas aspera* showed comparatively less inhibitory effect against *Pestalotiopsis disseminata.* The various plant extracts used in the study show that the grey blight disease of Som (*Persea bombycina* Kost.) can be effectively controlled with higher concentrations. Statistical analysis using SPSS software showed that there was a significant difference found among the chemical fungicides and plant extracts used and inhibition at different concentrations.

As most of the muga seed crops from Goalpara district is supplied to the other parts of Assam, hence control of various diseases of the food plant som is very important. Due to easy availability of the plants viz. *Azadirachta indica*, *Bougainvillea spectabilis*, *Eupatorium odoratum*, *Lantana camara* and *Lucas aspera* mentioned in the experiment, farmers can use this to control the disease. The residual effects of plant extracts do not cause any adverse effects on the silkworms and can be used in place of systemic fungicides as they may cause

adverse effects and mortality of the silkworm. Use of plant extracts to control the Grey blight disease is cost effective.