Abstract:

Chapter I

a) General Introduction

More than 70% of people of the Assam are engaged in agriculture. Among the various agricultural crops, rice is the most dominant crop occupying 80% of the total agricultural land of the total agricultural land of the region. The farmers from different ethnic diversity of the region have developed their own systems in cultivation of various crops. The local ethnic farmers have immense knowledge about the traditional farming practices as they possess immense knowledge about the local environment. They developed a location specific indigenous of the environment to identified the various micro farming situation which allow themselves to cultivate a large number of traditional paddy landrace along with the some introduced paddy landraces. The festive season and culture of the ethnic communities in the Barak Valley is associated with the agricultural season and practices. Community months and community weeks are closed related with the different agricultural seasons. Traditional farming in the valley not only a agricultural practice for sustain livelihood but also a culture of the ethnic community which they have learned from their forefather and conserving for their ancestors.

Keeping these points in view the present work was undertaken with the following objectives:

i) To explore the Know − how and gather information about the documentation of traditional farming systems in three ethnic communities of Barak Valley, Assam.

ii) To Study the various traditional pest management practices practiced by Dimasa, Bishnupriya Manipuri and Bengali Communities.

iii) To Study the various granary storage practices among these ethnic communities.

iv) To assess the soil physical characteristics and soil classical nomenclature of both traditional and modern agricultural field of these communities.
v) To assess the socio-economic status of the farmers of these ethnic communities on the basis of the agriculture.

b) **Study sites**

The study was carried out in three districts of Barak valley situated in southern parts of Assam. The geographical area of this valley at longitude between 92°15' and 93°15' E and latitude between 24°8' and 25°8' N with an altitude of 36 m above mean sea level. The Zone has an undulating topography characterized by hills, hillocks, wide plains and low lying water logged areas locally called *beels*.

**Chapter II**

Review of literature was consulted chronologically in comprehensive manner in this chapter.

**Chapter III**

Traditional farming system is an ecologically based age-old farming system developed by ancient farmers through generation with nature and natural resource. These practices were commonly known as Indigenous technical knowledge. Indigenous knowledge is the product of centuries of trial and error natural selection and keen observations. Indigenous practices emanate from the cultural context of the people concerned and evolve in close contact with specific environmental conditions are based on traditional societies intimate knowledge of their environment. These age old techniques that have evolved through generations are very precious and should be protected from extinction. They are safe for the environment and the community. The present study investigated and reported the various traditional farming practices practiced by the three ethnic communities and also documented the different paddy landraces cultivating the three ethnic communities.

**Chapter IV**

Traditional knowledge is essentially culturally oriented or culturally based, and it is integral to the cultural identity of the social group in which it operates and is preserved. Traditional agriculture accumulated the experience provided by local farming practices through thousands of years. Adaptation and selection seem to be the major mechanism for
eventually obtaining the best results in the management of natural resources. These practices commonly known as indigenous technical knowledge (ITK) are therefore, quite endemic to this region which may be true for other regions of the country as well. These indigenous techniques can minimize the harmful and expensive synthetic chemical insecticides. Since the chances of development of resistance by pests, towards a cultural control are very low, it is expected to provide a long – term solution for the control of insect pests of agricultural crops. Although the effectiveness of this indigenous technical knowledge (ITK) is quite high in the test crops for insect pest management, these need to be worked out for other crops. It was observed that traditional practices for insect pest control except lime water all ingredients are originated from biological world. The use of traditional practices may help to check increasing pest problems because these practices are eco-friendly. The educated farmer’s believed that initially the use of insecticides increased the productivity of rice but in the long run they preferred to follow the traditional methods. The old age farmer’s followed only the traditional practices for pest management. The ethnic communities were still preferred the traditional practices and beliefs for the control of rice pests and vegetable pests in Barak Valley of Assam which are – insecticidal and eco-friendly method of pest control. The present study is taken to investigate and document the traditional pest management practices among the Bengali, Bishnupriya manipuri and Dimasa community of Barak valley. A total 127 number of traditional pest management knowledge of all three ethnic communities of the valley is documented in the present study.

Chapter V

Post-harvest grain storage is intended to save grains and other commodities, which would otherwise be destroyed mainly by insect pests. Traditional storage method are being found to offer a safe, low cost, and more dependable method of storage protection. The traditional practices, if properly maintained in pest management strategies, can help to great extent to check an increasing pest problems because these practices are eco-friendly as well as sustainable manner of pest management. The traditional pest control practices followed by the ethnic communities are primarily against various crop pests and are capable of covering wide range of crops without any adverse effect on the environment. These practices are cheap, easy to prepare and use. Post harvest facilities or appropriate storage technology has been the major problems of Barak Valley for a long time that has resulted in considerable loss to the economy. The indigenous ethnic communities have their own knowledge for preparation of indigenous
storage structures with the locally available material which is vary one ethnic community to others. The shape of the structure also varies with the economic condition or size of land holding of the farmers. The effectiveness of storage structures in any farming community is related to the availability and affordability of construction raw materials as well as the appropriates of the technology and its efficiency. The present study documented the different ethnic storage structures used by the three ethnic communities selected for the present study.

**Chapter VI**

The investigation was conducted in the purposively selected Bengali, Bishnupriya Manipuri and Dimasa communities of Barak valley comprised of three districts viz., Cachar, Karimganj, Hailakandi in southern Assam. The study was undertaken purposively on selected 45 villages of Barak valley of Assam. A representative group of 5 farmers from each village of various ages and resources have been selected for making focus group discussion towards indigenous classification of soils. The soil texture was determined by Bouyoucos soil hydrometer method (Allen et al., 1974). In the present study, the farmers classified their paddy soils on the basis of soil colour and surface soil characteristics such as texture, drainage and organic matter content. They use indigenous methods of moist ball soils is taken and its rigidity or hardness for their identification. Farmers in the Barak valley identified five major soil types. Clay loam is named as *Atali/Delamati* by Bengali communities which is known as *Ormatihaan* by Bishnupriya Manipuri farmers and Dimasa farmers recognized it as *Hwarniha*. Clay silt commonly known as *Kala mati* by the Bengali community, *Kaliramatihaan* called by Bishnupriya Manipuri and *Gisimhao* used by the Dimasa tribe. Silty soil is called as *Poli mati* by the Bengali community whereas the same named as *Polimatihaan* by the Bishnupriya Manipuri and *Haama* by the Dimasa community. Bishnupriya Manipuri categorized Sandy loam as *Rangamatihaan* and same is recognized as *Gajaoha* in Dimasa and *Lal mati* in Bengali community. Sandy soil often referred as *Bali or Balu mati* by the Bengali community was described as *Leng ou* by Bishnupriya Manipuri farmers whereas Dimasa named as *Haaduri*. This indigenous knowledge of soil classification and knowledge of soil fertility level is declining due to the rapid urbanization in the valley. The present study identified the different nomenclature used by the three ethnic farming communities of the Barak Valley.
Chapter VII

A schedule was prepared for collection of useful information regarding general profile of the farmers in Barak valley comprising three district viz., Cachar, Karimganj, Hailakandi. The schedule was also used to collect information on a variety of demographic and socio-economic indicators such as household composition, education status, production of paddy and vegetable with respect of land area, economic status of farmers in response to agriculture, cost benefit status of farmers on paddy and vegetables and land holding information about farm insurance and main reason for crop damage as well as loan debt investment of the farmers of this valley. A detailed survey was conducted among the 900 farmers of three ethnic communities of the Valley. Selection of the respondents was conducted using random sampling techniques. The ANOVA single factor analysis showed that average household size is 7.47 in Bengali community which is 6.72 in Bishnupriya Manipuri community and 7.22 in Dimasa communities and it is also found to be significantly different among the three communities (P<0.05) at 95 % level. The land area also differs significantly among the three communities as (P<0.05) at 95 % level. The average land area are 0.85 ha, 0.79 ha and 0.54 ha of Bengali, Bishnupriya Manipuri and Dimasa community, respectively. It was also observed that the economic status of the ethnic farmers also significantly differs at 95% level and found maximum average annual income in Bengali communities which is 86,316.61 and minimum 56,389.03 in case of Dimasa community. The present study also confirms that the ethnic farmers of the valley are mostly unaware about crop insurance and not single respondent farmers having crop insurance, even some of the ethnic farmers are not in favour of crop insurance. The socio-economy is dependent on the farm production and agricultural income. The socio-economic condition of the farmer are affected by different reasons, sometimes agricultural production and farm income in India is affected by natural disasters. The importance of insuring the crop to be secured the future of farmer also discussed in the chapter. The present study confirms that most the rural farmers are of marginal type so the economic conditions of the ethnic farming community was found poor but the attitude towards the crop management and pest management are basically traditional and eco-friendly.
Chapter VIII

The main aim of the present study was to document the various traditional pest management techniques practiced by three major ethnic communities of Barak Valley in Assam viz., Bengali, Bishnupriya Manipuri, Dimasa. The present study also aimed to investigate the traditional farming techniques practiced by these three ethnic communities, traditional storage structure pattern and condition and learn their indigenous soil classical nomenclature identification. Another major objective of the present study was to assess the socio-economic condition of these ethnic farmers in the valley in respect to agriculture including their awareness level of various facilities available for the rural farmers. The each ethnic group of the valley holds by its own religion, its own culture and language, its own ideas and ways. From the study it reveals that the three ethnic communities practiced different traditional farming techniques as their own throughout the valley. As regards, the various traditional pest management practices which are also different from community to community may be well documented for the future for sustainable pest management. The ethnic storage structure are also typical and long lasting, some are short lasting for the storage of their granary may also be documented and encouraged community for maintenance. As far as soil classical nomenclature is concern it is helping for the cultivation method to the ethnic community farmers and give idea for the soil fertility which is their own concept. Since, literacy level among the farmers is low still they believe in traditional farming practices and also believe these practices are sustainable in nature. Increasing environmental concerns and emphasis on evergreen revolution calls for sustainable and eco-friendly practices. Indigenous technical knowledge which is a result of experimentation and observation by farmers can meet the present challenges.

Chapter IX

All the latest as well as relevant literatures were consulted and list of references were mentioned in this chapter.