INTRODUCTION

Industrialisation is possible only when agriculture has reached a high level of prosperity so as to provide self-sufficiency in food, to create a surplus for capital formation and to increase the demand for secondary products (Datta, 1966). Therefore to promote the development, India has to possess a highly efficient and commercialised agriculture, with higher productivity.

Sugarcane, a cash crop is one such crop which not only has a strong bearing on agro-based economy of the country and industrial uses but has ample scope of improvement by way of production and productivity. Sugar, Khandsari and Jaggery (Gur) the major sources of energy, are capable of tilting the whole economy of the nation. The importance of these products in terms of calories of energy provided to human beings needs no further emphasis. Only 100 gms of sugar can contribute 398 calories of energy to human diet (Datey).

India ranks II in area (29.0 lakh hectare), III in production (173.5 million tonne) and X in per unit productivity (59.8 tonne/hectare) of sugarcane in the world. In the production of sugar, the key product of the crop, India ranked III with the production of 66.5 lakh tonne in 1985-86. However, now India ranks at first with the production of 85 lakh tonne of sugar. Sugarcane contributes 2.3% to the
national economy and 5.6% to the total agricultural output. Sugarcane is one such crop of which every part of the plant is utilized for industrial production and human/animal food. Whereas the juice is used for extracting the Sugar, Gur and Khandsari, the left-out molasses are used in distilleries as one of the raw materials for production of liquor (rum), ethyl alcohol, butyl alcohol and citric acid, bagasse is used for fibre board, paper plastics and furfural and the left-out plant leaves provide delicious fodder for the animals. The cane filtrate is utilised in preparing lime and manure. The roots of cane are used as fuel by the poor ruralists. Now newsprint paper can also be manufactured from sugarcane. This has now been made possible by means of new processing methods developed at the Federal German Institute for Forestry and Wood Industry in Hamburg-Reinbek (Germany). There is hardly any to emphasise the importance of sugarcane in our day to day life.

Focus of the Problem

Inspite of the sugarcane being such an important crop both from the point of view of area and production and its agro-based industrial usages, the productivity level of the crop is very low. It ranks only X in world in productivity with field levels of 59.84 t/h after Peru (137.49 t/h), Maldives (121.42 t/h), Zimbabwe (121.21 t/h),
Zambia (117.89 t/h), Ethiopia (113.33 t/h), Indonesia (85.41 t/h), Brazil (63.44 t/h) etc. That yield levels of the crop are low on farmers' fields not because the scientific know how generated by the scientists has that much potential only but because only 50.38 percent of the potential has been exploited by the tillers/soil. If the present level of technology on sugarcane cultivation could be exploited, the farmers can safely get 80 t/a yields and with the existing area under sugarcane, the production of cane, can reach a higher peak of 232.0 million tonne.

Knowledge and technological gap between what has been generated by the scientists and what is known and practised by the farmers. It was under this assumption that the present study was taken up. The study was undertaken in the Meerut region of the state of Uttar Pradesh because the state and Meerut region are the leading sugarcane growing belts in the country. The state produced 41.17 percent of the total sugarcane in the country and Meerut region alone produces 38.5 percent of the cane produced in the state and 15.66 percent of the cane produced in the country. Of the total 358 sugar factories in the country 6.14 percent are in only Meerut division comprising of only 5 districts out of 59 districts in the state. The region produced 15.68 percent of the total sugarcane crop and 6.72 percent of the sugar in the country.
Thus taking up a study on knowledge and adoption gap and the constraints associated with its production in one of the leading sugarcane growing belt was just and timely. It was in view of this that the present study was undertaken with the following objectives.

The Objectives

The present study is an attempt to answer some of the important questions, for which the following objectives were set forth.

1. To study the knowledge level of cane growers about recommended practices of sugarcane cultivation.

2. To determine the technological gap as the difference between the recommended level of technology and the existing level of use of recommended technology.

3. To analyse the technological gap in terms of socio-economic and communication variables.

4. To identify the constraints pertaining to the adoption of modern technology of sugarcane cultivation.

5. Based on the findings of the study and suggestions of respondents to develop a communication strategy for accelerating the adoption of modern technology in sugarcane cultivation.
Scope of the Study

The present study was conducted in Western Zone of state of Uttar Pradesh. The findings of this study, which is first of its kind in this part of the state would help in reducing the technological gap in cultivation of sugarcane and constraints associated with this gap. Therefore, the findings for the study can be generalized in the sugarcane growing areas of the state.

Based on the results of the study and suggestions of respondents a suitable strategy may be developed for accelerating the adoption of modern technology in sugarcane cultivation. This information may help the policy makers and planners for promotion of cane production. This will enable the owners of sugar factories and Khandsari, Jaggery producers to draw their attention to improve their present functioning.

Above all, this study will also provide a feedback to the scientists for further research and to build an adequate theory of technological gap.

Limitations of the Study

Students project suffers from usual limitations of technical man-power, time and finances at the disposal of researcher. However, the researcher being borne brought-out and lived in the area since birth had the advantage of
perfect rapport building with the respondents and was very well abrest with the physical location of the geographical area of the study and socio-cultural system of the target group. This enabled him to get family accurate responses, unlikely in most evaluative studies of this type.

Organization of the Thesis

The present study has been assembled in five chapters. The first chapter deals with introduction including objectives, scope, limitations and organisation of the thesis.

The second chapter is devoted to review of literature. The whole review on the theme is divided into four supports namely, review of literature on sugarcane technology, technological gap, association of independent variables with gap and constraints.

The research methodology has been presented in chapter third. This consists of locale of study, sampling of technique selection of blocks- villages- respondents, tools and techniques of data collection analysis.

The main theme and findings have been discussed in chapter four. The knowledge level of cane growers, technological gap in sugarcane cultivation and the relation and
contribution of gap are determined in terms of socio-economic, technological and communication parameters in this chapter. The important constraints associated with the technological gap in sugarcane cultivation were also identified in this chapter.

In the end, the last and fifth chapter is devoted with summary of the findings, implications and effective suggestions.