C H A P T E R - I

INTRODUCTION

C H A P T E R - I

I N T R O D U C T I O N

Industrial microbiology is one of the most essential components of the human civilization. The putrifying activities of the microorganisms, though apparently wasteful, have been purposefully exploited by man for obtaining many useful products. Starting with the baker's yeast more and more of such microorganisms were found and the search for such microorganisms will last till the survival of the human species on this globe. Fermentation process has now occupied a pivotal place in modern scientific age and the answers to many problems, of the mankind, in teeming millions, could be had from it.

Rightly the industrial microbiology has not just remained a new field of entrepreneurial activity; it is a well established factor in the world economy,

responsible for a current annual production valued at hundreds of billions of dollars throughout the world. Moreover, it is the outgrowth of a pervasive human activity with a rich history that goes back thousands of years.

The art of fermentation is technically defined as the chemical transformation of organic compounds with the aid of enzymes in vivo or in vitro. Pasteur and Buchner are the founders of this discipline on scientific lines, as the microorganisms provided man with food and drink for more than 6000 years before their existence and role was recognized. Advancing civilization required more of food, drink, industrial chemicals, antibiotics, hormones, vitamins and scores of other fermentation products. Chemical production of many of these items has also been made possible because of larger demands inspite of the higher costs of production involved. Advancements of chemical technology is not suitable for the economically poorer nations and their dependence more on the biochemical technology is imperative. For the fermentation biotechnologist search of the microbe with an abnormal regulation is as great as the need to define conditions and requirements of the fermentation process at the industrial level.

With this aim in mind the present studies were undertaken to find suitable organism(s) with the inherent potential to over produce carboxylic acid(s) by way of their fermentative ability, from the virgin Chhattisgarh region. These investigations were enlarged to define the conditions and related aspects of the selected organisms for optimum yield of citric acid (CA), fumaric acid (FA) and tartaric acid (TA).