PREFACE

Agriculture sector is the backbone for the economic development of the country. Water is the main input for the increased agriculture production. As water sources have become very scarce, it is necessary to make proper utilization of water to produce more agriculture production. This leads us to demand management i.e. water the crop at right time & with right quantity. In last two decade micro irrigation has been playing an important role for water management. There is still good scope for improvement in the micro irrigation to make it very cost competitive so that it is affordable to even poor farmer.

Micro irrigation is one of the latest technologies for applying water efficiently and effectively. It has got dominating advantages over other systems, like judicial use of water, uniformity in distribution of water, less fertilizer wastage, adequate and calculated supply of water as per the crop water requirements.

The major disadvantage of this system is its high initial investment and uncertainty of power. Appropriate low-cost micro irrigation systems are to be developed to have positive effects on yield, incomes, and food security. With the right design, operation and maintenance of these systems farmers can improve water productivity and incomes.

Innovations in irrigation systems hold the key to overcome the disadvantages of conventional micro irrigation system. There is a need to study the impact of new technology on yield of crops, its hydraulics and economics.

Various research works were conducted in past years on micro irrigation systems for various crops at WREMI. To study the hydraulics of the system indoor micro irrigation laboratory is also developed.

Availability of field and indoor irrigation laboratory encouraged me to work on project which would generate a low cost micro irrigation technology. Major cost component of micro irrigation system were analysed in details to find out their alternatives. Then, the irrigation system, combination of polytubes, microtubes and micro manifold is developed in laboratory and decided to install on field also.

Subsequently I received research project from Gujarat Council on Science and Technology, Govt. of Gujarat worth Rs. 5,00,000/- to carry out the research work on low cost technology on field.

My contribution in developing such low cost technology will put at least one step ahead on path of innovative approach. This research work is an attempt to justify the use low cost technology and can give benefits to the famer.

I wish my research work will help to popularize the low cost technology amongst the farmers and get benefited.