PREFACE

There has been serious concern in the recent past regarding the deterioration of human and animal male reproductive health. The contributory factors for this deterioration have been traced to be the changes in the life styles and exposure to environmental, industrial and occupational chemicals, therapeutics etc. Among an array of toxic chemicals, metals are unique environmental toxicants and pose a serious threat to eco-biological systems. Since 1970, Several scientists have been suggesting that a number of reproductive disorders in male and females are caused by chemical compounds and environmental factors that have the capacity to interfere with the body endocrine (hormone) system.

Fertility is dependent on a complex set of events, involving both male and female components. In the beginning of the nineteen nineties it was hypothesized that the decreasing trend in reproduction during the last 50 years may share an aetiology with the increasing incidence in man, in wild life populations, developmental and reproductive disorders such as feminization of the external genital organs in amphibians and bears, and decreased fertility in mammals, testicular cancer, urethral abnormalities and the decrease in sperm count and quality in the male and breast cancer and endometriosis in the females are disorders of the reproductive system which have increased in many countries over a short period of time. It has been proposed that endocrine disrupters present in the environment and our food could be responsible for the disorders.

Stress life style and environmental pollution are phenomenon in modern world. So far, studies have dealt with the effects of stress and environmental contaminants on male reproductive system individually. Though stress is an outcome of toxicant exposure, the possibility of stress being a factor in modulating the effects of toxicants on male reproductive system cannot be ruled out. This aspect gains significance in the context that in industrialized societies where reproductive disorders are on rise, stressed life style and exposure to environmental pollutants go hand in hand. The present study was carried out to evaluate the effect of ammonia stress induced reproductive toxicity in Wister rats. Hormones play many critical roles in controlling growth and development in early life such that any interference could have serious and irreversible effects on the child. The increase in
incidence of certain conditions of the reproductive system and other health effects has revealed a parallel rise on the manufacture and use of therapeutics and chemicals.

Ammonia is a normal constituent of all body fluids but can become a toxicant under ammonia stress. Ammonia toxicity results in free-radical generation that leads to oxidative stress and tissue damage. Ammonia has received increasing attention during the past few years as a potentially important molecule in the pollution ecological system mainly due to the indiscriminate use of fertilizers and pesticides. The ammonia and ammonium ion together stimulate growth but at the same time these can decrease tolerance to several stresses. Ammonia is also one of the most widely used chemical in this part of country, the effects of this chemical exposure on many physiological reactions are still unknown, the void created by lack of adequate information on this chemical on reproduction, has aroused the curiosity and interest of the author to pursue her research on this chemical.

The present investigation has been undertaken to evaluate the effect of ammonia stress on biochemical estimations and reproductive abnormalities in male albino rat. The plan of work includes studying the effects on serum hormone levels and histological studies of testis of male rat and future restoration of reproductive ability of adult males by vitamin - C administration was also studied. This work is a modest attempt by the author towards an understanding the toxic potentials of ammonia on different hormonal assays in male reproductive system of albino rats. This study is far from being comprehensive, yet the author remains hopeful that the present study would contribute useful information to the existing knowledge on changes in metabolic activities, reproductive parameters during the ammonia toxicity. The author remains pardonable for any error which might have crept in due to over sight and for any investigative lacunae which are due to limitations on facilities and infrastructure.

The dissertation presents a humble effort by researcher towards a better understanding of the effect of ammonia and combination of vitamin-C for future studies on male reproduction. Researcher assumes the responsibility for any deficiencies presented in the text, which could be due to over sight, and earnest request condonation.