PREFACE

Plant regeneration has been achieved in groundnut using different explants in the past. However, groundnut improvement has been limited because of problems with low regeneration frequency and genomic incompatibilities associated with tissue culture techniques and traditional breeding programmes. We wanted to get more insight into the causes of these problems. Therefore, influence of growth hormones and the effect of mutagens were studied to produce genetic variability for high yield, oil content and disease resistance.

Chapter 2 describes the effect of various growth regulators on callus induction, shoot bud differentiation, multiple shoot regeneration and root initiation using different seedling explants in two genotypes. In Chapter 3 somatic embryogenesis from both solid as well as liquid medium using hypocotyl and immature leaflet explants is described.

In Chapter 4 protoplast isolation, culture and the effect of enzyme combinations are described. Plant regeneration was also achieved via somatic embryogenesis. Chapter 5 describes to evolving the disease resistant plants through in vitro culture technology using pathotoxic culture filtrates.

In Chapter 6 in vivo mutagenesis for induction of macromutants is described. Chapter 7 contains the summary and conclusions of the present study.

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