

## C O N T E N T S

<u>CHAPTER</u>		<u>PAGE</u>
I	<u>INTRODUCTION</u>	1
II	<u>MATERIALS AND METHODS</u>	15
	1. Plant Material	
	2. Culture Media	
	3. Aseptic Techniques	
	4. Culture Techniques	
	5. Measurements of Growth	
	6. Chemical Analysis	
	7. Preparation of Cell free extracts	
	8. Enzyme Assays	
	9. Histological Procedure	
	10. Photomicrographs	
III	<u>IN VITRO STUDIES ON GROWTH AND NUTRITION</u> <u>OF DATURA ANTHER CALLUS</u>	32
	Experiment 1: Initiation of Callus in excised Anthers of <u>Datura</u> .	
	Experiment 2: Effect of different Auxins on Callus Growth.	
	Experiment 3: Effect of Macroelements of different culture Media on Growth of <u>Datura</u> Anther Callus.	
	Experiment 4: Growth curve of <u>Datura</u> .	

CHAPTER

PAGE

Experiment 5: Effect of various  
Sugars and Different levels of  
Sucrose on Growth of Datura Callus  
culture.

Experiment 6: Effect of Kinetin alone  
and in combination with Auxin on  
Growth of Datura Callus culture.

Experiment 7: Relationship between  
Inoculum size and Volume of the  
medium as measured in terms of Growth  
of Datura Callus cultures.

Experiment 8: Effect of Inorganic  
Nutrition on Growth of Datura  
Callus cultures.

Experiment 9A: Effect of Nitrates on  
Growth of Datura Callus cultures.

Experiment 9B: Effect of Casein  
hydrolysate on Growth of Datura  
Callus cultures.

Experiment 10: Effect of Molybdenum on  
Growth of Datura Callus cultures.

Discussion

<u>CHAPTER</u>	<u>PAGE</u>
IV <u>PHYSIOLOGICAL AND BIOCHEMICAL STUDIES</u> <u>IN <u>DATURA</u> CALLUS CULTURES</u>	75
Experiment 11: Effect of different Carbohydrates on Total, Free sugars and on Invertase activity of <u>Datura</u> Callus cultures.	
Experiment 12: Effect of Sucrose on Total, Free sugars and Invertase activity of <u>Datura</u> Callus cultures.	
Experiment 13: Changes in Nitrogen content associated with Growth of <u>Datura</u> Callus cultures.	
Experiment 14: Changes in the Nitrogen content of the Callus tissues of <u>Datura</u> grown on Sucrose or Glucose media.	
Experiment 15: Effect of Sucrose and Glucose on Glutamic Oxaloacetic Transaminase in <u>Datura</u> Callus tissue during the course of Culture.	
Experiment 16: Changes in the Nitrate Reductase and Glutamic Oxaloacetic Transaminase (GOT) activity in <u>Datura</u> Callus tissues during the course of culture.	

CHAPTER

PAGE

Experiment 17: Effect of Nitrate level in the Medium on Nitrate Reductase and Glutamic Oxaloacetic Transaminase activities in <u>Datura</u> Callus tissues.	
Experiment 18: Effect of different Nitrates in the Medium on Nitrate Reductase and Glutamic Oxaloacetic Transaminase in <u>Datura</u> Callus cultures.	
Experiment 19: Effect of Casein hydro- lysate on Nitrate Reductase and Glutamic Oxaloacetic Transaminase activity in <u>Datura</u> Callus cultures.	
Experiment 20: Effect of Molybdenum on Nitrate Reductase activity in <u>Datura</u> Callus cultures	
Experiment 21: Studies on Acid ( -Glycero) Phosphatase in <u>Datura</u> Callus cultures.	

Discussion

V	GENERAL DISCUSSION	125
	SUMMARY	147
	BIBLIOGRAPHY	153

\*\*\*\*\*  
\*\*\*\*\*