TABLE OF CONTENTS

Chapter		Title	Page no.
Chapter-I		Introduction	1
Chapter-II		Review of Literature	4 [·]
2.1		Storage changes in rice	4
2.2		Quality Evaluation of Rice through Image Analysis	5
2.3		Evaluation of Cooking Characteristics of Rice	8
2.4		Effect of Storage on Pasting Properties of Rice	11
Chapter-III		Materials and Methods	14
3.1		Raw material	14
3.2		Equipments	14
3.3		Chemical	15
3.4		Methods	15
	3.4.1	Sample storage	16
	3.4.2	Moisture content	16
	3.4.3.	Cooking characteristics	17
	3.4.4	Rapid Visco Analyser	17
	3.4.5	Volume expansion study	17
Chapter-I	.V	Results and Discussions	21
4.1		Effects of Storage on Moisture Content	21
4.2		Effect of storage on cooking time	22
4.3		Effect of Storage on Pasting Properties	23
	4.3.1	Pasting temperature	23
	4.3.2	Peak Viscosity	24
	4.3.3	Breakdown	26
	4.3.4	Setback	27
	4.3.5	Final Viscosity	27
	4.3.6	Hold Viscosity	· 28
4.4		Effect of storage on soaking characteristics of rice grains	28
	4 <i>.</i> 4.1	Zeroth order kinetic model of expansion ratio	29
	4.4.2	First order kinetic model of expansion ratio	36
Chapter-V		Summary and Conclusions	43
1		References	45
		Appendix	48
		(Pictures of experimental setups)	

LIST OF TABLES

.

•

Table no	Title	Page no
3.1	Code name of Samples and harvesting month	14
3.2	Samples names with storage conditions and codes	16
3.3	Dates of Sampling	16
4.1	Moisture content of rice samples under different storage conditions and time	21
4.2	Cooking time of rice samples under different storage conditions and time	22
4.3	Different pasting properties of rice samples under different storage conditions	25
4.4	$k_{\rm o}$ Values of Plots of Expansion ratio and time of different samples	29
4.5	k_1 Values of Plots of Expansion ratio and time of different samples	36

.

LIST OF FIGURES

LIST OF FIGURES				
Figure	Title	Page no		
no 3.1	Image chamber inside and outside	18		
4.1	Plot of moisture content of different samples with storage conditions	22		
4.2	Plot of cooking time of different samples under different storage conditions	23		
4.3	Pasting Temperature of rice samples as determined by RVA	24		
4.4	Peak viscosity of rice samples as determined by RVA	26		
4.5	Breakdown of rice samples as determined by RVA	26		
4.6	Setback of rice samples as determined by RVA	27		
4.7	Final Viscosity of rice samples as determined by RVA	28		
4.9	Hold Viscosity of the rice samples as determined by RVA	28		
4.10	Variation of expansion ratio with soaking time for all the samples on D1	29		
4.11	Plot of expansion ratio and time for zeroth order reactions on D2	30		
4.12	Plot of expansion ratio and time for zeroth order reactions on D3	31		
4.13	Plot of expansion ratio and time for zeroth order reactions on D4	32		
4.14	Plot of expansion ratio and time for zeroth order reactions on $D5$	33		
4.15	Plot of expansion ratio and time for zeroth order reactions on D6	34		
4.16	Plot of expansion ratio and time for first order reactions on D1	37		
4.17	Plot of expansion ratio and time for first order reactions on D2	38		
4.18	Plot of expansion ratio and time for first order reactions on D3	39		
4.19	Plot of expansion ratio and time for first order reactions on D4	40		
4.20	Plot of expansion ratio and time for first order reactions on D5	41		
4.21	Plot of expansion ratio and time for first order reactions on D6	42		