

**EFFECT OF PHOTOPERIOD ON THE VEGETATIVE GROWTH
AND YEILD RESPONSE IN SRI LANKAN TRADITIONAL RICE
VARIETY “KURULUTHUDA”**



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ABSTRACT

Photoperiod is a major environmental factor regulating vegetative development in traditional Sri Lankan rice varieties. Yet limited scientific evidence exist on how kuruluthuda rice (Accessions number,3549) response to controlled light duration. the knowledge gap restricts the development accurate guideline for optimizing planting time and improving growth performance. The present study evaluates the influence on different photoperiod level on vegetative growth on kuruluthuda using completely Randomized design (CRD)with six photoperiod treatments (8h,9h,10h,11,11 h,45 min, and natural day length 12h 20min). Each treatment has five replicates. The experiment was conducted from 29 July to 2 September 2025.Plant height, leaf length, leaf width and number of tillers were recorded and analysis one -way ANOVA at the 0.05 significance level. And day length showed minimal variation during the experimental period. The findings indicate that, photoperiod had a significant effect on several vegetative growth traits. The longest photoperiod (T6) produces significantly Higer plant height ($118\pm3.62\text{cm}$, $p=0.011<0.05$) and the greater leaf length ($74.20\pm6.46\text{cm}$, $p=0.05\leq0.05$). indicating that extend light exposure enhance elongation growth and leaf expansion. The number of leaves ($12.60\pm0.92\text{cm}$, $p=0.022<0.05$) and Number of tiller (1.60 ± 0.24 , $p=0.021<0.05$) were also highest under T6. leaf width showed no significant among treatment ($p=0.11>0.05$). suggesting genetic control of this parameter. Overall, the results show that kuruluthuda rice exhibits a positive vegetative response to longer photoperiod. Providing essential baseline information for optimizing planting schedules and light -management strategies aimed at improving growth and maximizing yield potential.

Key Words: Day length, Kuruluthuda Rice, Photoperiod, vegetative growth parameters.

TABLE OF CONTENTS

DECLARATION.....	III
DEDICATION	IV
ACKNOWLEDGEMENT	V
ABSTRACT.....	VI
TABLE OF CONTENTS	VII
LIST OF TABLES	XI
LIST OF FIGURES	XII
ABBREVIATIONS AND SYMBOLS.....	XIII
CHAPTER 1	1
INTRODUCTION	1
1.1 Background and Context.....	1
1.2 Knowledge Gap and Research Problem	2
1.3 Research Objectives.....	3
1.3.1 Overall Objective	3
1.3.2 Specific Objectives	3
CHAPTER 2	4
LITERATURE REVIEW	4
2.1 Rice (<i>Oryza sativa</i> L.).....	4
2.2 Origin of Rice	4
2.3. Morphological Characteristics	5
2.4 Scientific Taxonomy	6
2.5 Rice Cultivation and the Sri Lankan Varieties	7
2.5.1 Rice Production Systems	7
2.5.2 Rice Types of Tradition.....	8
2.6 Rice Photoperiodism.....	8
2.6.1 Molecular and Physiological Mechanisms	8

2.6.2. Photoperiod Sensitivity Division	9
2.6.3. Environmental Factors which Influence Photoperiod Response	10
2.7. Growth and Development of Photoperiod	10
2.7.1. Vegetative Growth Parameters	10
2.7.2. Flowering and Reproductive Development	11
2.8. Components of Yield and Photoperiod	12
2.8.1. Yield Component Analysis.....	12
2.8.2. Photoperiod Control to the Production of High Yield	13
2.9. History of Research on the Topic of Photoperiod Sensitivity.....	14
2.10. Studies Kuruluthuda-Specific	14
2.10.1. Growth Characteristics and Adaptability	15
2.10.2. Photoperiod Sensitivity and Flowering Behavior.....	15
2.10.3. Effect on Yield and Plant Traits	16
2.10.4. Global and Local Importance.....	16
2.10.5 Sustainability and Conservation	17
CHAPTER 3	18
MATERIALS AND METHODOLOGY.....	18
3.1 Location	18
3.2 Climate and Soil.....	18
3.2.1 Climate	18
3.2.1 Soil	18
3.3 Planting Material.....	18
3.4 Experimental Design.....	19
3.5 Seed Germination and Nursery Preparation	19
3.5.1 Seeds Sterilization and Soaking.....	19
3.5.2 Seedlings Establishment in Mud Trays.....	19
3.6 Photoperiod Treatment.....	20

3.6.1 Determination of Day Length	20
3.6.2 Treatment Structure.....	20
3.6.3 Exposures Schedule for Each Treatment	21
3.6.4 Treatment Duration and Maintenance.....	21
3.7 Field Experiment.....	21
3.7.1 Pot Preparation.....	21
3.7.2 Pot Establishment.....	22
3.8 Management Practices	22
3.8.1 Fertilizer Requirement	22
3.8.2 Weed control	23
3.8.3 Irrigation Requirement.....	23
3.9 Data collection	23
3.9.1 plant Height.....	23
3.9.2 Number of Leaves.....	24
3.9.3 Leaf Length.....	24
3.9.4 Leaf Width.....	25
3.10 Data analysis	25
CHAPTER 4	26
RESULTS AND DISCUSSION.....	26
4.1 Determination of Vegetative Characteristic of Kuruluthuda	26
4.1.1 Daily Variation of Sunrise Sunset and Day Length Pattern During the Photoperiod Experiment	26
4.1.2 Effect of Treatments on Plant Height.....	27
4.1.3 Effect of Treatment on Leaf Length.....	29
4.1.4 Effect of Treatment on Leaf Width	31
4.1.5 Effect of Treatment Number on leaves	32
4.1.6 Effect of Treatment Number on Tillers	34

CHAPTER 5 37

COUNCLUSION 37

REFERENCES 38

APPENDICES 42