

CHARACTERIZATION OF DIFFERENT CHILLI (*Capsicum
annuum* L.) LINES AND VARIETIES AGAINST
TEMPERATURE STRESS

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ABSTRACT

Chilli is an important cash crop in Sri Lanka. Currently chilli production is lower than the requirement. As one of the most prominent consequences, global mean air temperature is projected to increase by 2.4 to 6.4 °C at the end of this century. Therefore, introduction of temperature tolerant chilli varieties is important for future cultivation.

A field study was conducted at the Field Crops Research and Development Institute, Maha Illuppallama during October 2015 to January 2016 to examine the yield response and screening of chilli varieties against temperature stress. Different chilli varieties and lines (Michhy 1, Waraniya, Galkiriyagama, KA 2, MI Green, line Michpl 1 and Mich3) were used as treatments. All management practices were given similar for all treatments.

High temperature significantly affected the treatments and their growth such as plant height, number of branches, number of leaves, canopy width as well as physiological characters such as chlorophyll content, leaf area, photosynthetic rate, pollen viability and yield, number of pods per plant, pod length, pod diameter and dry matter content of different chilli varieties.

Growth, physiological and yield parameters were affected and reduced the annual production. Yield reduction was 44% for the variety Michhy 1, around 63% in the variety "Waraniya", around 87% in variety "Galkiriyagama" was noticed. However, the yield reduction between other treatments was not significant by different.

TABLE OF CONTENTS

Page number

ABSTRACT	I
ACKNOWLEDGMENTS.....	III
TABLE OF CONTENTS.....	V
LIST OF TABLES	XI
LIST OF FIGURES	XIII
LIST OF PLATES.....	XIV
ABBREVIATIONS	XV
CHAPTER 1 INTRODUCTION	1
1.1 JUSTIFICATION	5
1.2 OBJECTIVES	6
CHAPTER 2 LITERATURE REVIEW.....	7
2.1 CHILLI (<i>CAPSICUM ANNUUM</i> L.)	7
2.2 CLASSIFICATION OF CHILLI	9
2.3 MORPHOLOGICAL CHARACTERS OF CHILLI	11
2.3.1 Stem	11
2.3.2 Roots	11
2.3.3 Leaves	11
2.3.4 Branching.....	11

2.3.5. Flowers.....	12
2.3.6 Pods/Fruits	12
2.3.7 Seed.....	13
2.4 NUTRITIONAL VALUE OF CHILLI.....	14
2.4.1 Uses.....	16
2.5 GROWTH STAGES OF CHILLI PLANT	16
2.5.1 Vegetative phase	17
2.5.2 Reproductive phase.....	17
2.6 ENVIRONMENTAL, SOIL AND CROP FACTORS ON CROP GROWTH.....	18
2.6.1 Climate factor for plants growth.....	18
2.6.1.1 Rainfall	18
2.6.1.2 Temperature	19
2.6.1.3 Light.....	20
2.6.2 Soil factor for plant growth.....	21
2.6.2.1 Soil fertility	21
2.6.2.2 Soil productivity.....	22
2.6.3 Crop factor for plant growth	23
2.7 RECOMMENDED USAGE OF ORGANIC MATERIALS.....	24
2.7.1 Mulching.....	24
2.7.2 Compost.....	25
2.8 MANAGEMENT PRACTICES IN CHILLI CULTIVATION	25
2.8.1 Nursery bed preparation.....	25
2.8.2 Raising of seedlings	25
2.8.3 Land preparation	26
2.8.4 Spacing.....	27

2.8.5 Transplanting	27
2.8.6 Recommended varieties	28
2.8.6.1 Variety MI Green	29
2.8.6.2 Variety MI-1	31
2.8.6.3 Variety MI-2	32
2.8.6.4 Variety KA -2	32
2.8.6.5 Variety Arunalu	32
2.8.6.6. Variety MI HOT	33
2.8.6.7 Variety Galkiriyagama selection	33
2.8.6.8 Variety Waraniya	34
2.8.7 Time of planting	34
2.8.8 Fertilizer application	34
2.8.9 Irrigation	37
2.8.10 Pest and disease control	38
2.8.10.1 Insect pest control	38
2.8.10.2. Disease control	39
2.8.10.3 Weed control	40
2.8.11 Harvesting	40
2.9 YIELD AND YIELD COMPONENTS	41
2.9.1 Number of fruits and fruit weight	41
2.9.2 Fruit length, diameter and pericarp thickness	42
2.9.3 Fruit color	43
2.9.4 Dry matter content	43
2.9.5 Plant height, width and number of branches	43
2.9.6 Leaf area	44

CHAPTER 3 MATERIALS AND METHODS.....	45
3.1 EXPERIMENTAL LOCATION	45
3.2 EXPERIMENTAL DESIGN	45
3.3 TUNNEL PREPARATION AND MAINTENANCE.....	47
3.2 CROP MANAGEMENT.....	48
3.2.1 Nursery bed preparation.....	48
3.2.2 Sowing	48
3.2.3 Nursery management	49
3.2.4 Land preparation	49
3.2.5 Transplanting	49
3.2.6 Fertilizer application	50
3.2.7 Compost application	50
3.2.9 Irrigation	51
3.2.10 Pest and disease management.....	52
3.2.11 Weeding.....	52
3.3 PARAMETERS MEASURED.....	52
3.3.1 Growth parameters.....	52
3.3.2 Physiological parameters	53
3.3.2.1 Pollen viability test.....	53
3.3.2.2 Chlorophyll content.....	53
3.3.2.3 Leaf temperature	54
3.3.2.4 Photosynthetic rate	54
3.3.3 Yield.....	54
3.3.4 Meteorological data	54
3.3.5 Temperature inside the tunnel.....	54

3.4 DATA ANALYSIS	55
CHAPTER 4 RESULTS AND DISCUSSION.....	56
4.1 CLIMATIC FACTORS INSIDE AND OUTSIDE THE TEMPERATURE GRADIENT CHAMBER	56
4.1.1: Temperature outside the temperature gradient chamber	56
4.1.2: The Relative Humidity outside the temperature gradient chamber	57
4.1.3 Rainfall distribution outside the temperature gradient chamber.....	58
4.1.4 Temperature inside the temperature gradient chamber.....	59
4.2 SEEDLING STAGE	62
4.3 GROWTH PARAMETER (VEGETATIVE STAGE AND FLOWERING STAGE).....	64
4.3.1 Plant height	64
4.3. 2 Number of leaves	66
4.3.4. Canopy width	69
4.4. PHYSIOLOGICAL PARAMETERS.....	70
4.4. 1. Leaf area	70
4.4.2. Leaf temperature	71
4.4.3. Chlorophyll content	72
4.4. 4. Photosynthetic rate.....	74
4.4. 5. Pollen viability.....	75
4.5 DESTRUCTIVE PLANT SAMPLING	76
4.5.1 Growth parameters.....	76
4.5.2 Dry matter content	79
4.6 YIELD AND YIELD COMPONENTS	80
4.6.1 Number of flower.....	80
4.6.2 Pod Yield	82