

**PREPARATION OF NURSERY MEDIUM FOR CHILLI (*Capsicum
annum L.*) USING CARDBOARD POWDER**



**By
H.P.G.S.K Guruge**



FTC197

Project Report
Main Library, Eastern University, Sri Lanka

**Department of Bio Systems Technology, Faculty of Technology
Eastern University
Sri Lanka
2024.**

ABSTRACT

This research was conducted to study the feasibility of cardboard powder used as nursery medium material for raising chilli seedling. The experiment was carried out from March to June 2024 at the Faculty of Technology, Eastern University, Sri Lanka. The study was designed in CRD with five treatments and ten replicates. The treatments are T₁ (Control) – normal nursery medium sandy soil: top soil: compost 6:2:4, T₂ sandy soil: top soil: compost: cardboard powder 6:2:3:1, T₃ is sandy soil: top soil: compost: cardboard powder 6:2:2:2, T₄ is sandy soil: top soil: compost: cardboard powder 6:2:1:3, T₅ is sandy soil: top soil: cardboard powder 6:2:4. pH, water holding capacity & porosity of decomposed nursery medium were measured before sowing seeds. Seedlings height, number of leaves per seedlings were measured at 2 and 3 weeks old. Fresh and dry weights of the seedlings were measured at near to transplanting. Analysis of variance was performed to determine significant differences among treatments. Results suggest that combining cardboard powder with compost improves soil physical properties without changing nursery medium pH. Growth parameter analysis indicated that growth of seedling is influenced by nursery medium composition. Highest seedling height, fresh weight and dry weight were observed in chilli seedling grow in medium having sandy soil: topsoil: compost: cardboard powder 6: 2 : 2 : 2. Cardboard powder would be used as a material for nursery medium preparation for chilli seedlings. This combination would be help to increase seedlings growth rate. According to the results of the study, same amount of cardboard powder and compost combination medium would be a suitable application rate for nursery medium.

Key words: Nursery medium, Cardboard powder, Chilli seedling

TABLE OF CONTENT

ABSTRACT	I
ACKNOWLEDGEMENT	I
TABLE OF CONTENT	III
LIST OF TABLES	VI
LIST OF FIGURES	VII
ABBREVIATION.....	VIII
CHAPTER 01	1
1.0 Introduction.....	1
1.1Background of the study.....	1
CHAPTER 02	6
2.0 Literature Review	6
2.1 Chilli (Capsium annum.L).....	6
2.2 History of chilli	7
2.3 Scientific classification of chilli	7
2.4 Growth requirements of chilli	7
2.5 Health benefits of chilli	8
2.6 Nutritional value of chilli	11
2.7. Present status of chilli cultivation in the Sri Lanka.....	11
2.8 Nursery for chilli seedlings	13
2.8.1 Proppertist of nursery medium	16

2.8.2 Functions of nursery medium.....	16
2.8.3 Materials use for nursery medium.....	18
2.8.4 Nusery management practices	19
CHAPTER 03	19
3.0. Materials and method	21
3.1 Experiment location	21
3.2 Climate and Soil	21
3.3 Variety used.....	21
3.4 Experiment	21
3.4.1 Experimental design	22
3.4.2 Treatments used in this experiment	23
3.4.3 Preparation of the nursery medium.....	24
3.4.3.1 collection of raw materials	24
3.4.3.2 preparation of nursery medium	25
3.5 Mesure the Chemical and Physical properties of meduim	26
3.5.1 Chemical Parameters	26
3.5.2 Physical parameters	26
3.5.2.1 Water holding capacity.....	254
3.5.2.2 Porosity of medium.....	264
3.6 Agronomic Practices	26
3.6.1 Preparation of seedling tray	26
3.6.2 Seedling	26

3.6.3 Irrigation	27
3.6.4 Pest management	27
3.7 Growth parameters	27
3.7.1 Height of the plant [cm].....	27
3.7.2 Number of leaves	27
3.7.3 Fresh weight & dry weight of seedling.....	25
CHAPTER 04	28
4.0 Results And Discussion.....	28
4.1 Properties of nursery medium	28
4.1.1 pH, water holding capacity, porosity of different treatments.....	28
4.2 Growth parameters	29
4.2.1 Plant height (cm).....	29
4.2.2 Number of leaves	31
4.2.3 emerge precentage	304
4.2.4 fresh weigh & dry weight of seedlings	31
CHAPTER 05	32
5.1 Conclusion.....	32
REFERENCES.....	33