

MULTI-PURPOSE GRATING MACHINE

VIANCA MAE C. MUNCAL

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TABLE OF CONTENTS

	PAGE
LIST OF TABLES	ix
LIST OF FIGURES	xi
LIST OF APPENDIX TABLES	xii
LIST OF APPENDIX FIGURES	xiii
ABSTRACT	xiv
INTRODUCTION	1
Background of the Study	1
Statement of the Problem	2
Objectives of the Study	3
Significance of the Study	3
Scope and Limitation of the Study	4
Time and Place of the Study	4
REVIEW OF RELATED LITERATURE	5
Mechanization in the Philippines	5
Processing Machines and Mechanisms	7
Grating Mechanisms	7
Quality Attributes of Turmeric and Bamboo Shoot	8
Physical Qualities of Turmeric	8
Physical Qualities of Bamboo Shoot	9
Turmeric and Bamboo Shoot as Food Source	9
Physical Properties	11
Turmeric (<i>Cucurma longa</i>)	11
Bamboo shoot (<i>Phyllostachys edulis</i>)	12
Turmeric and Bamboo Shoot-based Powder	12
Turmeric	12

	PAGE
Bamboo Shoot	13
Size Reduction and Distribution	13
Size Reduction	13
Dimension Range	15
Sieve Range	15
Microscopic Range	15
Size Distribution	15
Mechanical sieving	16
METHODOLOGY	17
Conceptualization of the Study	17
Proposed Multi-Purpose Grating Machine	18
Design	18
Description of Machine Parts	19
Design Calculation	20
Design Consideration	22
Principle of Operation	23
Materials and Instrumentation	24
Collection and Preparation of the Raw Materials	24
Grating of Turmeric and Bamboo Shoot	26
Laboratory Analysis	26
Preliminary Testing	27
Performance Evaluation	27
Data Gathering and Analysis	28
Grating Capacity	28
Grating Efficiency	29
Grating Loss	30
Energy Consumption	30
Cost Analysis	31
Fixed Cost	31
Depreciation	31
Interest on Investment	32
Tax Insurance and Shelter	32
Variable Cost	32

	PAGE
Repair and Maintenance	33
Labor Cost	33
Power Cost	33
Total Cost	33
Custom Rate	34
Payback Period	34
Break-even Point	35
Statistical Analysis	35
RESULTS AND DISCUSSION	37
Multi-Purpose Machine	37
Specification of the Machine	38
Preliminary Test Result	39
Grating Time	40
Grating Capacity	42
Grating Efficiency	44
Energy Consumption	46
Cost Analysis	48
SUMMARY, CONCLUSION, AND RECOMMENDATION	51
Summary	51
Conclusion	53
Recommendation	54
LITERATURE CITED	55
APPENDICES	59

LIST OF TABLES

TABLE		PAGE
1	Mechanization levels of various operations of selected crops in 2012	6
2	Commonly known turmeric species	10
3	Locally grown bamboo species in the Philippines that are commonly used for food production	11
4	Types of forces used in size reduction equipments	14
5	Factors considered in the design of the multi-purpose grating machine	22
6	Materials and instruments used in production	24
7	Specification of the multi-purpose grating machine	38
8	Issues and solution made during preliminary testing	40
9	Grating time of the machine for the turmeric at different speed treatments, sec	41
10	Grating time of the machine for the bamboo shoot at different speed treatments	42
11	Grating capacity of the machine using turmeric at different speed treatments, kg/hr	43
12	Grating capacity of the machine using bamboo shoots at different speed treatments, kg/hr	44
13	Grating efficiency of the machine for turmeric at different speed treatments, %	45
14	Grating efficiency of the machine for bamboo shoots at different speed treatments, %	46
15	Energy consumption of the machine for turmeric at different speed treatments, kWh·kg ⁻¹	47

		PAGE
16	Energy consumption of the machine for bamboo shoots at different speed treatments, kWh·kg ⁻¹	47
17	Assumed values for the calculation of the cost analysis for multi-purpose grating machine	48
18	Cost of analysis for the multi-purpose grating machine	49

LIST OF FIGURES

FIGURE		PAGE
1	Different grating machines	7
2	Conceptual framework of the study	18
3	Perspective of the multi-purpose grating machine and its components	19
4	Turmeric and bamboo shoots	25
5	Experimental layout	36
6	Multi-purpose grating machine	37

LIST OF APPENDIX TABLES

APPENDIX TABLE		PAGE
1	ANOVA of the grating time for turmeric	60
2	ANOVA of the grating time for bamboo shoots	60
3	ANOVA of the grating capacity for turmeric	60
4	ANOVA of the grating capacity for bamboo shoots	60
5	ANOVA of the grating efficiency for turmeric	60
6	ANOVA of the grating efficiency for bamboo shoots	61
7	ANOVA of the energy consumption for turmeric	61
8	ANOVA of the energy consumption for bamboo shoot	61
9	Determination of speed	61
10	Bill of materials for the multi-purpose grating machine	62
11	Use and maintenance of the multi-purpose grating machine	62

LIST OF APPENDIX FIGURES

APPENDIX FIGURE		PAGE
1	Materials for the grating unit of the multi-purpose machine	64
2	Fabrication of the multi-purpose grating machine	64
3	Collection of turmeric and bamboo shoots	65
4	Preparation of the raw material	65
5	Preliminary testing	66
6	Grated turmeric and bamboo shoots	66
7	Tachometer and clamp-on AC/DC power meter	67
8	Partially grated sample	67
9	Hopper	68
10	Grating unit	69
11	Discharge unit	70
12	Frame	71
13	Multi-purpose grating machine	72

ABSTRACT

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Adviser: RUEL G. PENEYRA, M.Sc.

In this study, a multi-purpose grating machine has been developed, and its performance has been evaluated and analyzed. The machine was designed for multi-commodity grating, high throughput capacity, easy assembly, and disassembly, and reduction of grating time. The performance evaluation of the grating machine was conducted to establish its capacity, efficiency, power consumption, size reduction, and distribution based on the Philippine Agricultural Engineering Standard for the multi-crop grater. A belt and pulley combination design was adopted as primary power transmission mechanism.

Using a 5 mm abrasive hole size, the grating capacities for turmeric and bamboo shoots were found to be 30.13 kg/hr and 22.24 kg/hr, respectively. Grating efficiencies for turmeric and bamboo shoots were found to be 92.62% and 84.72%, in average respectively. The energy consumption were measured to be 0.1167 kW-hr and 0.2478 kW-hr per kilogram of turmeric and bamboo shoots, respectively.

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