

**STUDY ON DRYING QUALITY OF OVEN DRIED
BUTTON MUSHROOMS.**



BY

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ABSTRACT

This research study was conducted at Biosystem Technology Laboratory at Faculty of Technology in Eastern University, Sri Lanka from November 2021 to December 2021 to investigate the drying quality of button mushroom. Different temperatures with different time duration were used for drying button mushroom in hot air oven as follows vz- 30⁰ C/ 10 hrs , 40⁰ C/ 8 hrs, 50⁰ C/ 7hrs and 60⁰ C/ 5hrs . Mushrooms were kept in the oven at these different temperatures for different durations until the samples reached desired moisture content. The moisture loss was measured at every 1 hour interval. The effect of drying air temperature on drying characteristics of button mushrooms were investigated. The experimental results showed that the drying temperature and duration of drying had considerable effects on the moisture removal. Rehydration characteristics of oven dried samples were studied using hot water . The moisture content quickly reduced at 60⁰C and took 5 hours (8.3%). Mushrooms dried at t 30⁰C took 10 hours(8.1%). Rehydration ratio values of mushrooms at 30⁰C, 40⁰C, 50⁰C and 60⁰C were 2.9, 2.6, 2.33, 2.17 respectively.

Oven dried mushrooms were kept in storage at room temperature for 02 weeks. Moisture content, pH value and sensory qualities of the stored mushrooms were measured . Sensory evaluation was conducted using 25 panelists after one week, there were change in the moisture content . The increase moisture level in lower rate was in 50⁰C sample. Faster increase was in 40⁰C sample. 50⁰C was good

sample, because moisture level was not changed in wide range. The pH values changed in one week and two weeks respectively. Minimum change at 50⁰C.

In sensory evaluation there were significant differences between some treatments with respect to color, aroma and crispiness. After one week and two weeks the changes in color of oven dried mushrooms at 30⁰C, 40⁰C, 50⁰C, 60⁰C temperature were darker than to fresh mushrooms. The mushrooms dried at 60⁰C was found to be more darker than the samples dried at 30,40, and 50⁰C.

On the basis of sensory study, most of the panelists rejected the 30⁰C sample and most of accepted the 50⁰C sample. Therefore, it can be concluded that in hot air oven drying, at 50⁰ C for 6 hrs can be considered as the effective optimum temperature for drying process of full button mushrooms.

TABLE OF CONTENTS

ABSTRACT	i
ACKNOWLEDGEMENT	iii
TABLE OF CONTENT	vi
LIST OF TABLE.....	vii
LIST OF PLATES	viii
CHAPTER 01	
1. INTRODUCTION	1
1.1 Objectives	3
CHAPTER 02	
2. LITERATURE REVIEW.....	4
2.1 General Introduction to mushrooms	4
2.2 World Scenario of Edible Mushroom Production	5
2.3 Button Mushrooms Cultivation	6
2.4 Nutritional of Mushrooms.....	7
2.5 Importance of Mushrooms.....	9
2.6 Importance of Preservation Mushroom	10
2.7 Preservation Methods of Mushrooms	11
2.7.1 Freezing	11
2.7.2 Other Methods	12
2.7.3 Drying	13
2.8 Drying Methods of mushrooms	14

2.8.1 Solar drying	14
2.8.2 Oven drying.....	16
2.9 Quality parameters of Dried Mushrooms	17
2.9.1 Rehydration	17
2.9.2 Rehydration Capacity	17
2.9.3 Moisture Content	18
2.9.4 pH	19
2.10 Sensory Evaluation of Dried Mushrooms	19
2.10.1 Preference Test	20
2.10.2 Discrimination Test	20
2.10.3 Qualities Assessed by Sensory Test	21
2.10.3.1 Aroma	21
2.10.3.2 Color	21
2.10.3.4 Consistency	21
2.10.4 Benefits of Using Sensory Evaluation	22

CHAPTER 03

3. MATERIALS AND METHODS.....	24
3.1 Laboratory Study and Location.....	24
3.2 Sample Collection and Experiment.....	24
3.3 Materials.....	24
3.3.1 Materials Used for the Study.....	24
3.4 Hot Air oven.....	25
3.5 Selection of Drying Parameters.....	25
3.6 Preparation of Raw Materials.....	25

3.7 Drying Properties	26
3.8 Drying Quality Experiment.....	26
3.8.1 Moisture Content.....	26
3.8.2 Rehydration Ratio.....	27
3.8.3 pH	28
3.9 Sensory experiment.....	28

CHAPTER 04

4. RESULT AND DISCUSSION.....	30
4.2 Moisture content of dried mushrooms.....	30
4.3 Rehydration ratio of dried mushrooms.....	34
4.4 Storage study of oven dried mushrooms.....	35
4.4.3 sensory qualities of stored, dried mushrooms.....	36

CHAPTER 05

5. CONCLUSION.....	39
6. REFERENCES.....	41

LIST OF TABLE

Table 4.1 Rehydration ratio of oven dried method.....	34
Table 4.2 Moisture content of oven dried method.....	35
Table 4.3 pH value of oven dried method.....	36

LIST OF PLATES

Figure 4.1 moisture losses of full mushrooms at 30 ⁰ C.....	30
Figure 4.2 moisture losses of full mushrooms at 40 ⁰ C.....	31
Figure 4.3 moisture losses of full mushrooms at 50 ⁰ C.....	32
Figure 4.4 moisture losses of full mushrooms at 60 ⁰ C.....	33
Figure 4.5 sensory pattern of dried mushrooms.....	37
Figure 4.6 fresh mushrooms	37
Figure 4.7 Oven dried mushrooms 30C	37
Figure 4.8 Oven dried mushrooms 40 ⁰ C.....	38
Figure 4.9 Oven dried mushrooms 50 ⁰ C.....	38
Figure 4.10 Oven dried mushrooms 60 ⁰ C.....	38