CENTRAL LUZON STATE UNIVERSITY

GROWTH RESPONSE AND MYCOACCUMULATION ABILITY OF *Lentinus tigrinus* MYCELIA ON MERCURY IN LIQUID CULTURE

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An Undergraduate Thesis Submitted to the Faculty of the Department of Biological Sciences, College of Arts and Sciences, Central Luzon State University, Science City of Munoz, Nueva Ecija Philippines, In Partial Fulfilment Of the Requirements for the Degree

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IRISH IVY C. SORIANO
BS Biology 2017

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TABLE OF CONTENTS

	PAGE
TITLE PAGE	i
APPROVAL SHEET	ii
BIOGRAPHICAL SKETCH	iii
ACKNOWLEDGEMENT	v
TABLE OF CONTENTS	viii
LIST OF TABLES	x
LIST OF FIGURE	xi
LIST OF APPENDICES	xii
LIST OF APPENDIX TABLES	xiii
LIST OF APPENDIX FIGURES	xiv
ABSTRACT	xv
INTRODUCTION	1
Background of the Study	1
Objectives of the Study	4
Significance of the Study	5
Scope and Limitation of the Study	5
Time and Place of the Study	6
REVIEW OF RELATED LITERATURES	7
Lentinus tigrinus	7
Mushrooms	9
Mycoaccumulation Properties of Mushrooms	10
Mercury	12
Chemical Properties of Mercury	13
Toxicity of Mercury	14

MATERIALS AND METHODS 17

Source of Pure Culture 17
Revival of Culture and Preparation of Mycelial Discs 17
Preparation of Potato Dextrose Broth (PDB) Media with Mercury 17
Evaluation of Mycelial Growth Response 18
Data Gathered 19
Statistical Analysis 19

RESULTS AND DISCUSSION 20

Volume loss of culture media of *L. tigrinus* mycelia 20
Mycelial weight of *L. tigrinus* 21
Accumulation of Mercury in *L. tigrinus* 24

SUMMARY, CONCLUSION AND RECCOMMENDATION 27

Summary 27
Conclusion 28
Recommendation 28

LITERATURE CITED 29

APPENDICES 35

LIST OF TABLES

TABLE		PAGE
1	The different treatments used in the study	18
2	Volume loss of culture spent of *L. tigrinus* mycelia on different concentrations of mercury	20
3	Mycelial weight of *L. tigrinus* mycelia grown in culture media on different concentrations of mercury	22
4	Amount of mercury in the mycelia of *L. tigrinus* grown on the different mercury treated media	24

LIST OF FIGURE

FIGURE		PAGE
1	Fruiting bodies of *Lentinus tigrinus*	8

LIST OF APPENDICES

APPENDIX		PAGE
A	Potato Dextrose Agar Preparation	36
B	Mercury Stock Solution Preparation	37
C	Statistical Analysis	38
D	Photo Documentation	42
E	Certificate of Analysis	44

LIST OF APPENDIX TABLES

APPENDIX TABLE		PAGE
1	Analysis of variance of volume loss of *L. tigrinus* mycelia	37
2	Analysis of variance of mycelial weight of *L. tigrinus*	37
3	Analysis of variance of mercury content of *L. tigrinus* mycelia	37

LIST OF APPENDIX FIGURES

APPENDIX FIGURE		PAGE
1	Potato dextrose agar (A), petri dishes before sterilization (B), revived culture of *L. tigrinus* (C), sterilized ketchup bottles with potato dextrose broth (D), PDB with 0 ppm Hg (E), bottles under incubation in room temperature (F)	38
2	Mycelia of *L tigrinus* at 0 ppm (A), 1 ppm (B), 10 ppm (C), 100 ppm (D), 1000 ppm (E) of mercury	39
3	Certificate of analysis of mercury content of *L. tigrinus* mycelia	41

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BS Biology 2017

ABSTRACT

SORIANO, IRISH IVY C. Bachelor of Science in Biology, Department of Biological Sciences, College of Arts and Sciences, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines, June 2017. **GROWTH RESPONSE AND MYCOACCUMULATION ABILITY OF MERCURY IN *Lentinus tigrinus* IN LIQUID CULTURE MEDIA.**

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In this study, the mycoaccumulation potential of *Lentinus tigrinus* on salt mercury treated liquid culture media was assessed. The growth response of the mycelia of *L. tigrinus* on different concentrations of mercury was evaluated and the presence of mercury on the mycelia was detected using acid digestion/cold vapor atomic absorption spectrophotometry. *L. tigrinus* was inoculated into liquid culture media (PDB) with different concentrations of mercury having 0 ppm, 1 ppm, 10 ppm, 100 ppm and 1000 ppm. The culture was incubated for 15 days.

Results revealed that the highest volume loss was observed in treatment 2 having 17.33 ml while the least was obtained in treatment 7 with 3.3 ml. 0 ppm and 1 ppm were found to be statistically the same with 17.33 ml and 18.33 ml respectively. 10 ppm (15.33 ml), 100 ppm (10.67 ml) and 1000 ppm (3.33 ml) on the other hand were different. The heaviest mycelial weight was obtained in 10 ppm with 5.52 g and the least was noted in 1000 ppm which yielded 2.54 g. 1 ppm having 5.18g, on the other hand, is similar with 100 ppm with 4.18 g which in turn was statistically comparable with 0 ppm (3.42 g). 0

ppm and 1000 ppm (2.54 g) were observed to be statistically the same. Presence of Hg concentrations in mycelia were detected in different treatments with the highest concentration was noted in 1000 ppm with 4.5 mg/kg followed by 100 ppm and 10 ppm with 1.1 and .36 mg/kg respectively. The least concentration with .1 mg/kg was observed in 1 ppm.

The results suggest that Hg concentrations affects both the intake of culture media by mycelia and its growth. It is highly probable that *L. tigrinus* is a potential bioaccumulator of Hg.

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