

**Effect of Fertilizeron Growth and Protein Content of Azolla (*Azolla pinnata)***

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**A thesis submitted in the partial fulfillment of the requirements for the degree of Master of Science in Fisheries Resource Management**

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**Chattogram Veterinary and Animal Sciences University Chattogram 4225, Bangladesh**

**June 2020**

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**This is to certify that we have examined the above Master’s thesis and have found that is complete and satisfactory in all respects, and that all revisions required by the thesis examination committee have been made**



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|  |
| --- |
| **Table of Contents** |
| **Chapter**  | **Title** | **Page no** |
|  | Authorization | Ii |
|  | Acknowledgments | iv-v |
|  | List of Tables | Ix |
|  | List of Figures | x-xi |
|  | List of Appendices | Xii |
|  | List of Plates | Xiii |
|  | Abbreviations | Xiv |
|  | Abstract | xv-xvi |
| 1 | **Introduction** | 1-4 |
|  | 1.1 Objectives | 5 |
|  | 1.2 Scope of the study | 5 |
| 2 | **Review of literature** | 6-15 |
|  | 2.1 Azolla | 6-7 |
|  | 2.2 Morphology ofAzolla | 7-8 |
|  | 2.3 The plant and it’s habitat | 8-9 |
|  | 2.4 Ecological impacts ofAzolla | 9-10 |
|  | 2.5 Azolla’s nutritive value | 10-11 |
|  | 2.6 Azolla as fish feed | 12 |
|  | 2.7 Effects of nitrogen on azolla Growth | 12-13 |
|  | 2.8 Effects of phosphorus on azolla Growth | 13-14 |
|  | 2.9 Effect of pH on growth of azolla | 14-15 |
|  | 2.10 Effects of different Oxygen level (DO) on azolla growth | 15 |
| 3 | **Materials and Methods** | 16-21 |
|  | 3.1 Materials | 16 |
|  | 3.2 Collection ofAzolla | 16 |
|  | 3.3 Azolla stock culture | 16 |
|  | 3.4 Sources of nitrogen and phosphorus | 16-17 |
|  | 3.5 Set up the containers | 17 |
|  | 3.6 Water quality management | 17 |
|  | 3.7 Experimental design | 17-20 |
|  | 3.8 Growth performance | 20-21 |
|  | 3.9 Determination of protein by micro kjeldahl apparatus | 21 |
|  | Photo Gallery | 22-25 |
| 4 | **RESULT** | 26-36 |
|  | 4.1 Effect of Different treatments on growth performance of Azolla | 26-35 |
|  | 4.1.1 Experiment 1 (the combination of nitrogen and phosphorus) | 26-27 |
|  | 4.1.2 Experiment 2 (phosphorus) | 28-29 |
|  | 4.1.3 Experiment 3 (Different Oxygen Level) | 30-31 |
|  | 4.1.4 Experiment 4(different pH Level) | 32-33 |
|  | 4.1.5 Experiment 5 (Based on the best result of Experiment 1-4) | 34-35 |
|  | 4.2 The protein content of experimental Azolla | 36 |
| 5 | **Discussion** | 37-42 |
|  | 5.1 Experiment 1(Effect of combination of nitrogen and phosphorus on Azolla growth) | 37-38 |
|  | 5.2 Experiment 2 (Effect of phosphorus on Azolla growth) | 38-39 |
|  | 5.3 Experiment 3(Effect of DO on Azolla growth) | 39-40 |
|  | 5.4 Experiment 4 (Effect of pH on Azolla growth) | 40 |
|  | 5.5 Experiment 5 (Effect of the combination 0f best result of experiment 1-4 on Azolla growth) | 40-41 |
|  | 5.6 Effect of fertilizer and water quality parameter on the protein content of Azolla | 41-42 |
| 6 | **Conclusions** | 43 |
| 7 | **Recommendation and Future perspectives** | 44 |
|  | **References** | 45-51 |
|  | **Appendix** | 52-59 |
|  | **A brief biography of the author** | 60 |

**List of Tables**

|  |  |  |
| --- | --- | --- |
| **Table no** | **Table name** | **Page no** |
| 1 | Classification of Azolla | **7** |
| 2 | Azolla’s nutrient value (wet weight basis) (Feed pedia) | 11 |
| 3 | Nutrient ingredients used in experiment and energy provided by Urea and TSP | 17 |
| 4 | The nutrient ingredients with inclusion level (1st experiment) | 18 |
| 5 | The nutrient ingredients with inclusion level (2ndexperiment) | 19 |
| 6 | Different oxygen level (3rd experiment) | 19 |
| 7 | Different pH level (4thexperiment) | 20 |
| 8 | A combination of treatments (N, P, DO and pH) gave the best result in | 20 |
| 9 | Growth performance of Azolla (Experiment 1) | 26 |
| 10 | Growth performance of Azolla (Experiment 2) | 28 |
| 11 | Growth performance of Azolla (Experiment 3) | 30 |
| 12 | Growth performance of Azolla (Experiment 4) | 32 |
| 13 | Growth performance of Azolla (Experiment 5) | 34 |
| 14 | Protein content of Azolla | 36 |

**List of Figures**

|  |  |  |
| --- | --- | --- |
| **Figure no** | **Figure name** | **Page no** |
| 1 | Effects of **Combination of Nitrogen and Phosphorus** on the cell number of Azolla (Mean ± SD). The cell number of Azolla of T1, T2, and T3 were compared to the control group. Values accompanied by different letters are statistically significantly different (p < 0.05, n=4). | 27 |
| 2 | Effect of the **combination ofNitrogen and Phosphorus** on the weight of Azolla (Mean ± SD). The weight of Azolla of T1, T2, and T3 was compared to the control group. Values accompanied by different letters are statistically significantly different (p < 0.05, n=4). | 27 |
| 3 | Effects of **Phosphorus** on cell number of Azolla (Mean ± SD). The cell number of Azolla of T1, T2, and T3 were compared to the control group. Values accompanied by different letters are statistically significantly different (p < 0.05, n=4) | 29 |
| 4 | Effect of **Phosphorus** on the weight of Azolla (Mean ± SD). The weight of Azolla of T1, T2, and T3 was compared to the control group. Values accompanied by different letters are statistically significantly different (p < 0.05, n=4.) | 29 |
| 5 | Effects of **Different Oxygen level (DO)** on cell number of Azolla (Mean ± SD). The cell number of Azolla of T1, T2, and T3 were compared to the control group. Values accompanied by different letters are statistically significantly different (p < 0.05, n=4). | 31 |
| 6 | Effect of **Different Oxygen Level (DO)** on the weight of Azolla (Mean ± SD). The weight of Azolla of T1, T2, and T3 was compared to the control group. Values accompanied by different letters are statistically significantly different (p < 0.05, n=4). | 31 |
| 7 | Effects of **Different level of pH** on cell number of Azolla (Mean ± SD). The cell number of Azolla of T1 and T2 were compared to the control group. Values accompanied by different letters are statistically significantly different (p < 0.05, n=4). | 33 |
| 8 | Effect of **Different level of pH** on the weight of Azolla (Mean ± SD). The weight of Azolla of T1 and T2 were compared to the control group. Values accompanied by different letters are statistically significantly different (p < 0.05, n=3). | 33 |
| 9 | Effects of **the combination of the best result of experiments 1-4** on cell number of Azolla (Mean ± SD). The cell number of Azolla of T1and T2 were compared to the control group. Values accompanied by different letters are statistically significantly different (p < 0.05, n=3). | 35 |
| 10 | Effect of **(The combination of best result of experiment 1-4)** on the weight of Azolla (Mean ± SD). The weight of Azolla of T1 and T2 were compared to the control group. Values accompanied by different letters are statistically significantly different (p < 0.05, n=3). | 35 |

**List of Appendices**

|  |  |  |
| --- | --- | --- |
| **Appendix no** | **Appendix name** | **Page no** |
| 1 | Cell number of Azolla in 1st experiment | 52 |
| 2 | Average cell number of Azolla in 1st week | 52 |
| 3 | Cell number of Azolla in 2nd Experiments | 53 |
| 4 | Average cell number of Azolla in 2nd Experiments | 54 |
| 5 | Cell number of Azolla in 3rd experiment | 54 |
| 6 | Average cell number of Azolla in 3rd experiments | 55 |
| 7 | Cell number of Azolla in 4th experiments | 55 |
| 8 | Average cell number of Azolla in 4th experiments | 56 |
| 9 | Cell number of Azolla in 5th experiments | 56 |
| 10 | Average cell number of Azolla in 5th experiment | 57 |
| 11 | Total cell number of Azolla on the 7th day of each experiment(1-5) | 57 |
| 12 | Average of Total cell number of Azolla on 7th day of each experiment(1-5) | 58 |
| 13 | The final weight of Azolla on the 7th day of each experiment(1-5) | 58 |
| 14 | Average of the final weight of Azolla on the 7th day of each experiment(1-5) | 59 |

**List of Plates**

|  |  |  |
| --- | --- | --- |
| **Plate no** | **Plate Name** | **Page no** |
| 1 | Azolla collection | 22 |
| 2 | The plastic container set up for Azolla Culture | 22 |
| 3 | Fertilizer treatment | 22 |
| 4 | Aerator treatment | 23 |
| 5 | pH treatment | 23 |
| 6 | Cell counting | 23 |
| 7 | Sampling | 24 |
| 8 | Weighting of sample | 24 |
| 9 | Laboratory analysis | 25 |

**LIST OF ABBREVIATIONS**

|  |  |
| --- | --- |
| DoF | Department of Fisheries |
| G | Gram |
| Mg | Milligram |
| pH | Power of Hydrogen |
| Sd | Standard deviation |
| TSP | Triple Super Phosphate |
| N | Nitrogen |
| P | Phosphorus |
| DO | Dissolved Oxygen |

**Abstract**

This study was conducted to evaluate the effects of fertilizer (Nitrogen and phosphorus) and water quality parameters (DO and pH) on the growth performance and protein concentration of *Azolla pinnata*. Azolla is exclusive because it is one of the fastest growing plants on the earth without soil and honest alternative source of protein from expensive fish meal. Azolla were cultured in 12 plastic containers with different treatments (Nitrogen, phosphorus, DO and pH) in different concentrations to observe the effect. This study was consists of 5 experiment (each experiment conducted for 7 days).In 1st experiments, the combination of nitrogen and phosphorus were used as treatment. In 2nd experiment; phosphorus was used as a treatment. In 3rd experiment, Different DO level maintain as treatment by using different aerator. In the 4th experiments, Azolla treated with different pH level by using lemon and lime. In the 5th experiments, Azolla treated with the combination of all the treatments used in experiment (1-4).After complication of each experiment, different treatment showed different effects. Highest growth performance and protein content were found in treatment T1 (10 mg atom/L N + 30 mg atom/L P) in experiment 1 compared with other treatments **(*P*˂0.05)**. In 2nd experiment, highest growth performance and protein content were found in treatment T3 (6.5mg/l) than the Azolla without phosphorus. After completion of 3rd experiment, highest Growth performance and protein content were found in treatment T1 (D0=7.01). In the last sampling of 4th experiment, the data showed that the Azolla provided with Treatment-0(T0) means experiments with the level of (pH=6.5) plays role in higher growth in terms of cell number and weight while comparing with other treatments. In the terminal sampling of 5th experiment, the data presented that the Azolla provided with Treatment T2 means a combination of the doses which gave best result of experiment 1-4 (phosphorus=6.5mg/l, DO=7.01, pH= 6.5) plays role in highest growth and protein content . The results of this research showing that at pH = 6.5, DO = 7.01mg/l and Phosphorus = 6.5mg/L; there was highest growth with the cell no 116.67± 20.207 & weight 1.1400 ± 0.06928g and also the protein 35.66%.

Keywords: Azolla (*Azolla pinnata*), Nitrogen, phosphorus, DO, pH, Growth performance and Protein content.