

## **IMPACT OF SALINE ENVIRONMENT ON THE GROWTH AND PERFORMANCE OF WATER HYACINTH (EICHHORNIA CRASSIPES) (PONTEDERIALES; PONTEDERICACEAE)**

*Faton Manhognon Oscar Euloge<sup>1</sup>, Montcho Hambada Koffi David<sup>2</sup>, Bonou-Gbo Zaki<sup>3</sup>, Hamit Mangare Agoure<sup>4</sup>,  
Djedatin Gustave<sup>5</sup>, Fanou Lucie<sup>6</sup>, Ayi Théophane<sup>7</sup>, Gnancadja-Andre Léopold Simplicé<sup>8</sup>*

*<sup>1,3,4,8</sup>Laboratory of Plant Physiology and Study of Environmental Stresses: Research Unit in Phytopathology and Plant  
Protection/ UAC/ FAST/ BENIN*

*<sup>2</sup>Laboratory of Plant, Horticultural and Forest Sciences UNA/BENIN*

*<sup>3</sup>Laboratory of Biotechnology, Genetic Resources and Animal and Plant breeding UAC/FAST/BENIN*

*<sup>3,5</sup>Laboratory of Molecular Biology and Bioinformatic Applied to Genomic/UNSTIM/ ENSBBA/BENIN*

*<sup>6,7</sup>Laboratory of Food Technology and Quality Control /UATM GASA-Formation*

### **ABSTRACT**

*Water hyacinth is a floating macrophyte aquatic plant from the family Pontederiaceae, growing on the surface or in land waterways. Its proliferation impacts significantly on ecosystems, but also on populations and their economic activities, giving rise to disastrous effects on agriculture, fishing, electricity production, transport, public health, means subsistence, and living conditions. The objective of this research is to study the effect of a saline environment on the growth parameters of water hyacinth to limit its proliferation. To achieve this, water hyacinth seedlings were collected from Sô-Ava, Benin for evaluation in a controlled environment by using different concentrations of the medium in salt. Growth parameters of water hyacinth were measured on the leaves, the stem, and the roots. Statistical analyses were therefore carried out with R software and Excel 2016 for descriptive statistics, analysis of variance, and construction of graphs. Through this evaluation doses of saline concentration evaluated allow us to conclude that water hyacinth could tolerate a maximum salt concentration of 0.062 mol.L<sup>-1</sup>. At a saline concentration of 0.248 mol.L<sup>-1</sup> of the culture medium, the plant can no longer perform its metabolic functions and dies two weeks after treatment. However, an average concentration of 0.124 mol.L<sup>-1</sup> of the medium in salt considerably limited the growth of the plants. Given these results, it is necessary to research the impact of this salt concentration on other living beings in the lagoon ecosystem to propose an effective fight against water hyacinth.*

**KEYWORDS:** *Ecosystem, Eichhornia Crassipes, Environment, Salt Tolerance, Proliferation.*