

# VARIATION OF ANTIOXIDANT CAPACITY AND TOTAL BETALAINS CONTENT FROM LEAF-DERIVED AQUEOUS EXTRACTS OF PURPLE KNIGHT (*Alternanthera dentata*: AMARANTHACEAE)

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**Abstract:** Betalains are compounds that are part of the plants secondary metabolism, which are mainly found in fruits and flowers from which they are extracted to be used as natural dyes in different foods because of their antioxidant properties [1]. However, other parts of the plant such as leaves, stems and roots accumulate these pigments in their structures [2]. As part of our research on natural pigments, it was set out to study the variation of the content of these pigments in leaves of an ornamental plant according to three different development places, evaluating furthermore its antioxidant capacity. Thus, seven extraction methods were evaluated to determine the most effective extracting system in fresh and dry materials 0.05% TFA in distilled water was selected as the optimum extraction system. This extraction system allowed obtaining a higher content of these compounds particularly in the dry material [3]. The changes of the content of such compounds depending on the origin environment were observed through PCA and PLS-DA, being plants from shadow exhibited highest total contents of betalains in dry materials. The extracts were also analyzed by HPLC-DAD-ESI-MS and there was several betalains detected in each sample. Betalains were tentatively identified by UV and MS data in comparison with literature information. Some betalains resulted to be common in all samples but the relative abundance was found to be variable. This study identifies some of the conditions for the use of ornamental plants for producing those compounds without restricting the flowers and fruits as only source, and opening the way for the understanding and the exploitation of these compounds in this kind of plants.

## **References:**

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