UNIVERSITI TEKNOLOGI MARA

LC PROFILING AND DETERMINATION OF STEVIODISE AND REBAUDIOSIDE A IN TEN *Stevia rebaudiana* BERTONI ACCESSIONS

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ABSTRACT

Stevia rebaudiana Bertoni leaves contain non-caloric natural sweet compounds which are steviol glycosides. Stevioside and rebaudioside A are types of steviol glycosides that are the most abundant in the leaves. The aims of this study are (1) to characterize and evaluate morphological characteristics of ten stevia accessions. (2) to obtain an LC-MS profiling of stevia leaves extract and quantify major constituents of steviol glycosides and identify other major compounds that presented in the stevia leaves extract (3) to determine the effect of different harvesting stages towards stevioside and rebaudioside A. The leaves were extracted using Soxhlet extractor and analysed using LC-MS for profiled. Due to environmental factors, ten accessions showed different morphological characteristics. Before flowering stage, accession Bangi had showed high dried yield leaves, 0.72±0.01g. Accession Bertam produced number of leaf 25±2.0 per plant. Accession MS012 (4X) had a good characteristic on the plant height, 22.6±1.0cm before flowering stage. Most of accession showed the length of leaf varied from 6.5cm to 7.3cm. The profiles of stevia extracts showed that presence of major constituents steviol glycosides in stevia extracts which were $[M-H]^-$ *m/z* 803 (stevioside) and 965 (rebaudioside A). The content of stevioside was found abundant in the extract accession MS023 before until late flowering stage, respectively with 2.14% and 2.40%, respectively. Meanwhile rebaudioside A content was found abundant in the extract of accession Bertam that harvested from before until late flowering stage, respectively with 0.60% and 0.69% respectively. Based on the LC-MS profiling, accession Bertam and MS023 are considered to have high stevioside and rebaudioside A contents and can be applied for future breeding programme to enhance the economical value of stevia for farmers.

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