

Comparative analyses of flavonoid content in *Moringa oleifera* and *Moringa ovalifolia* with the aid of UHPLC-qTOF-MS fingerprinting

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ABSTRACT:

Moringa species are multipurpose plants with nutritional, medicinal and industrial benefits. The flavonoids content of *Moringa oleifera* and *Moringa ovalifolia* was studied using an Ultra high-performance liquid chromatography coupled with electrospray ionization quadrupole time-of-flight mass spectrometry (UHPLC-ESI-qTOF-MS). The results revealed that the two species contain at least 17 flavonoids compounds between them. However, *M. oleifera* was found to contain the most flavonoids than *M. ovalifolia* which contained only three of the total flavonoids. Furthermore, all flavonoids in *M. ovalifolia* were shown to be glycosylated with only rutinoside. Based on the current findings, the two species seem to have a different composition of flavonoids, therefore suggesting an underlying variation at the genetic level for flavonoid biosynthesis. The difference in the flavonoids composition of the two species as seen from the results is mainly due to glycosylation capabilities, with *M. oleifera* being more superior in this case. Prior to this study, there has been no comprehensive investigation into the flavonoid content (or any phytochemical studies) of *M. ovalifolia* and its comparison to other *Moringa* species. Furthermore, vicenin-2 a molecule that has recently been linked to various medicinal properties has been identified in *M. oleifera*. Overall, *M. oleifera* (as compared to *M. ovalifolia*) is expected to exhibit wider pharmacological activities owing to its glycosylation complexity.