

# Estimation of the dioscorin extracted from cultivars of yams (*Dioscorea* genus) growing in the Venezuelan Amazonas

E.E. Pérez, J. Faks, L.E. Cira, M. Schroeder, N. Diez

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## Abstract

In the Venezuelan Amazonas are growing some cultivars yams with differing sizes and colors, that have not been yet completely identified. This yams could have some content of the water-soluble protein called dioscorin; which has been reported in yams (*Dioscorea* spp.), and that it have also been pointed out as an antioxidant. The aim of this study were to quantify the crude protein of yams of the *Dioscorea* genus that were harvested in the Venezuelan Amazon, to estimate the dioscorin protein by mass spectrometry, and to match this data with a significant database. The protein from the edible portion of each yam was extracted with different solvents and the protein concentration was measured by the methods of Kjeldahl, Lowry, and Bradford. The water extracts were separated using electrophoresis in a sodium dodecyl sulfate polyacrylamide gel. The identification of the induced and repressed proteins was carried out by MALDI-TOF MS PMF by using the bands of interest. The results reflected differences in the protein contents of the different fractions. Single bands of 32 kDa of proteins were obtained by electrophoresis when the water-soluble extract of each yam was assayed and the presence of dioscorin was estimated. By analyzing the results from the characteristic fingerprint obtained by MALDI-TOF MS FPP, it was concluded that the white yam is *Dioscorea japonica*. However, the number and intensity or the intensity only of the fragment ions obtained by MS for the other threes yams were insufficient for a significant identification.