

Seeds from the moringa oleifera for chemical characterization of X-Ray fluorescence

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Originally from India, the Moringa oleifera is the best known plant species of the family Moringaceae. In northeastern of Brazil is known as "White Lily" or "Quina Okra." Its cultivation is common in Asia and Africa where its leaves and pods are eaten in food; it is used as an ornamental plant and healing. The oil from seeds has antioxidant properties and maybe can be used in food: manufacturing soaps and cosmetics. The ground seeds have bactericidal properties and flocculantes that are used in bleaching and purification water.

In a literature review shows that no studies have been developed yet, using multielement techniques such as fluorescence spectrometry X-ray (XRF), which allows the determination of elements from uranium to carbon. The use of FRX represents an important contribution to the understanding of the presence of chemical elements from the seeds of Moringa oleifera [1]. The latest papers about Quina Okra are related to metal absorption capacity by seeds, proving the presence of metal in particular. Therefore, in our analyse we used samples of seeds of Moringa oleifera collected from Universidade Federal Rural do Rio de Janeiro (UFRRJ) in Seropédica-RJ. The samples provided by the Foundation Deusmar Queirós-EC have the purpose for the use XRF, which will contribute for a better understanding of the presence of macro and micro constituents, present in seeds of this plant species.

References

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Nd and La quantitative analysis by EDXRF

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Rare earth ores and compounds are of growing importance to worldwide industry. Its applications range from catalyzers to the manufacture of supermagnets. Thus, the demand for fast and accurate quantitative methods is growing [1].

The present quantification methods of Nd and La involve the chemical separation by liquid-liquid extraction or ionic change, both time and resource consuming.

This study quantified directly Nd and La on a concentrated liquor whose mother also has Ca, Y, PO₄ by EDXRF technique

Tests were conducted to quantify the same technique with several other lanthanides, where it was evaluated interference in analytical line X-ray spectrum of the elements in question. The results showed that quantification by EDXRF technique is as accurate as the results in dose titration with EDTA of the same elements, but with the advantage of dispensing with the previous separation between rare earths and other elements such as thorium and uranium.

References

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