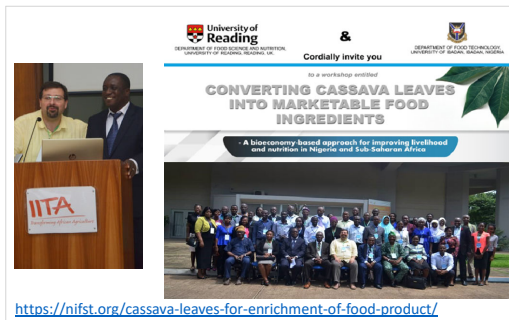


Industrial Cassava leaf detoxification- Converting cassava leaves into marketable food ingredients

Summary

An estimated 300 million tonnes of Cassava leaves are produced globally containing proteins, pro-Vitamin A carotenoids and other valuable nutrients. Yet due to its toxic cyanogenic glycosides less than 1% is used for human consumption.

The UoR-GCRF project has generated the PoC of the first industrially feasible detoxification process, thus paving the way for its utilisation for converting them in much needed marketable food ingredients for improving livelihood and nutrition in sub-Saharan Africa.



<https://nifst.org/cassava-leaves-for-enrichment-of-food-product/>

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Key findings/learning/outcomes

- Sun drying of leaves in the field after cassava root harvesting is a low cost simple process that makes transportation logistics and storage feasible. It leads to a significant drop of cyanogenic load, stops leaves emitting cyanide and allows of transporting twice more solids than cassava roots for the same weight of product.
- Industrial milling of dried leaves coupled to a subsequent extraction of residual cyanide using simple aqueous 5-10% salt or alcohol media where HCL is used to adjust the pH between 3.5-4.0 allows us to avoid emissions of cyanide and reach detoxification of Cassava leaves well below the 10ppm WHO limit within a maximum of 60 min processing.
- Detoxification can run at industrial throughputs. For example mixing 0.75tonnes dried leaf in 5m³ plastic vessels buried in soil similar to the edible olive processing. Separation from toxicant can take place with a simple decanter.
- The detoxified cassava leaf can then be dried and used a Cassava flour that can be directly added to meals in Sub-Saharan Africa. Immediate use of the detoxified leaf flour was one of the outcomes from the syndicate work of our 2-day workshop in the premises of International Institute of Tropical Agriculture in Ibadan, Nigeria in July 2019
- We are now working to investigate if the cassava leaf flour can be converted to a low cost source of highly bioavailable pro-Vitamin A carotenoids in order to support efforts for alleviating the Vitamin A deficiency in Sub-Saharan African.

Where?

Ghana
Nigeria
UK

Project partners/funders

Ghana: Kwame Nkrumah University of Science and Technology, Kumasi, KNUoST.

Nigeria: University of Ibadan, Ibadan, UoI.

UK: University of Reading- UoR

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