

Transforming wet cassava peels in high quality animal feed ingredients

TECHNOLOGY DESCRIPTION

Annually, processing Africa's 150 million tons (Mt) of fresh cassava roots yields up to 38 Mt of peels; more than 98% of which are wasted due to drying constraints.

- The technology produces energy-rich high quality cassava peel (HQCP) feed ingredients by facilitating rapid water loss to reduce drying time to about 8 sunshine hours.
- HQCP products contain two-thirds the energy in maize, are safe, storable and cheaper than existing equivalents.
- HQCP production processes have been in common use among small cassava processing enterprises for decades and are equally applicable in the industrial case.



Cassava peels waste at gari processing center in Oyo, Nigeria.



Process to produce high quality cassava peels mash -- HQCP

END USERS AND BENEFITS

End users are cassava processors and the animal feed industry who will purchase the value added product. More than 80% of some 3 million people in Africa involved in cassava processing are women and they stand to benefit from either selling the wet peels at about US\$15 per tonne or producing HQCP products.

- Production costs vary from \$70-80/t while the feed industry offers half the price of maize (\$100-150/t).
- Converting Africa's 38Mt of cassava peels waste into 12Mt of HQCP opens a new \$1.8billion industry creating 500,000 jobs of which 80% will be women.
- One of Nigeria's top four animal feed producers satisfactorily used the products at 25% maize replacement for broiler and egg production without loss in performance.

SCALING STRATEGY

Scaling of this technology would follow a two approaches.

- A decentralized approach through integrating the technology into small and medium scale enterprises (SMEs) already processing cassava into garri.
 - Training to produce safe and hygienic products
 - Allay the fear of feed industry concerning product quality
 - Link to financial support sources
- A centralized approach through establishing new large scale industries that finish intermediate cassava peel products produced by SMEs
 - Support industrialists with reliable technical details to establish plants
 - Provide maps of cassava processing location for peel availability

LEVEL OF ADOPTION OR USE

About two years after technology became available, adoption has been as follows:

- USAID has offered a grant to a Nigerian entrepreneur to build 3 factories
- An NGO has built 2 factories in 2 states in Nigeria
- Government of Nigeria planned 6 factories for 2016 budget
- One individual currently producing and selling one ton per day
- 20 medium scale processors are in negotiations with a top feed miller in Nigeria to start producing/supplying up to 60 t/week
- 80 individual has sent requests for training on the process.

Fresh entrants into business seem to dominate requests.

CRITICAL GAPS AND NEXT STEPS

- There is a lack of a critical mass of adopters to kick off industry demand – feed millers need a minimum quantity of guaranteed supply to change feed formulae.
- Low awareness among entrepreneurs of the existence of the technology including proofs of technical and economic feasibility
- old myths about cyanide poisoning in cassava peel products still lingers

Research-to-use funding is required to implement the scaling strategies of the technology



KEY PARTNERS FOR SCALING

Private sector: feed millers, cassava processing centers, cassava peelers (mostly women). Public sector: product quality assurance and policies for solid waste management. NGOs for backstopping, Researchers: technology improvement. Financial institutions for credit delivery.



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