Adedoyin B. Ademola

Cassava Flour (HGCFL)

How to make High Quality

International Institute of Tropical Agriculture - www.iita.org

Research to Nourish Africa

IIITA
Ibadan, Nigeria. 14 pp.


PMB 5320, Oyo Road
IITA, c/o Lambourn (UK) Ltd, Carolyn House
26 Dingwall Road, Croydon CR9 3EE, UK

© International Institute of Tropical Agriculture (IITA), 2006
How to make High Quality Cassava Flour (HQCF)

Adebayo B. Abass
Contents

1. Introduction
2. HOCF Production Flow Diagram
3. Harvesting Cassava
4. Peeling
5. Washing
6. Grating
7. Dewatering
8. Cake-breaking or Granulating
9. Chipping
10. Drying
11. Milling and Sieving
12. Packaging and Storage
13. Transportation and Marketing
14. Conclusion
to the new, emerging markets.

The necessary skills for processing cassava to HCF and supplying the product to extension agents in helping farmers and small-scale processors to develop HOGF of consistent quality at minimal cost. The manual will also be valuable precautions, small-scale processors and farmers alike will be able to produce following the simple descriptions of the technology and taking the necessary and don'ts of high-quality Cassava Flour (HCF) production technology. By

This manual was prepared to point out in a simple and direct manner the do's and

export markets in terms of price, quality, quantity, and regularity of supply. convert perishable crops to products that meet the requirements of local and

convert perishable crops to products that meet the requirements of local and

farmers and other processors to gain skills in adopting new technologies to

farmers and other processors to gain skills in adopting new technologies to

the crops. It is important to develop innovative methods that can help these

the crops. It is important to develop innovative methods that can help these

reduce post-harvest losses of perishable crops, such as cassava, create demand

reduce post-harvest losses of perishable crops, such as cassava, create demand

integration into new growth market has shown to be an effective way to

integration into new growth market has shown to be an effective way to

Improving the traditional, small-scale farming system into a market-oriented

Improving the traditional, small-scale farming system into a market-oriented

Introduction
High Quality Cassava Flour

Millling

Drying

Granulating/Screening

Dewatering/Pressing

Grating

Washing

Peeling

Freshly Harvested Cassava Roots

HQC Production Flow Diagram
Harvesting Cassava

- Transport quickly to the processing site
- Harvest cassava roots
- Select mature plants

- Do not keep harvested roots under direct sunlight or in the heat.
- Do not keep harvested roots for more than 12 hours before processing. Cassava roots are not for more than processing plant.
- AVOID damage to the roots when harvesting and packing them into vehicles.
- Avoid any plant previously affected by bush burning.
- Avoid over-aged or immature plants.
- Select cassava varieties with high starch and dry matter contents.
-
Peeling

- Remove the peels and all spoil parts
- Remove woody parts stuck on the roots

Washing
Inside water while washing
Peeled roots may be let
Lead to a low yield of H.O.C.
Woodly or spoil parts will
Careless peeling, use of tiny
Involved in peeling
Carefulness of the people
Age of roots, and the
On wholesomeness, size, or
From 10 to 22% depending
Peeling loss can range

Peels:
Avoid removing useful parts
- Wash several times in clean water until the roots are completely clean.
- Remove all dirt, sand, sticky mud, and smelly parts.
- Wash peeled roots thoroughly with clean water.

Reliable source:
Use clean water from a
-colour:
Avoid any change in
-Wash immediately after
Pack the mash into clean polypropylene sacks with a fine mesh for dewatering.

Collect the grated cassava mash in clean containers.

Grate the cassava roots immediately after washing to maintain the white colour.

Grating

The grating area must be

Well drained.

Before and after grating:

Wash the grater thoroughly.

Surfaces (floors, etc.)

Never allow the sacks

containing the cassava

mash to touch dirty
Dewatering

- Turn the screw bar again until the mash is well de-watered to form a cake that
- Allow the liquor to drain out for 3-10 minutes
- Apply pressure by turning the screw bar clockwise on to the sack until tight
- Ensure that the sack containing the cassava mash is thoroughly tied before

---

**Cassava Flour**

Labelled "Fermented batch of flour" must be
- to be done rapidly. This
- de-watering does not have
- home cooking. In this case,
- and sour our (e.g., for
- the end-users prefer aromatic
- to ferment for 1 to 2 days it
- Cassava mash may be allowed

**Fermentation**

Prevent the mash from
- as quickly as possible to
- dewatering should be done
- want fermented HCF. Hence,

Most industrial users do not
Use clean containers to hold the wet granules.

Sift the resulting wet granules on a sifter to remove lumps.

Feed the cake into a dry cassava grater to break the cake into wet granules.

Empty the cassava cake into clean pans, bowls or sacks.

* Use at the same time.  Cake and silt the granules may be used to break the available a manual sifter.
   If the cassava grater is not
   available (e.g. floors),

* Do not place sacks containing cake or granules on dirty surfaces (e.g. floors)
Collect the chips in clean containers for drying.

Chip cassava to small and thin chips immediately after washing.

Manual Chipping

- Content is not known.
- C 50% of bitterness or cyanogens.
- Grate any varieties whose level is high amount of cyanogens.
- Any cassava variety known to be bitter or contain a cyanogen.
- Grate cassava to produce HCCF.
- Never chip high cyanides.
- HCCF cassava is to be processed to granulating or low cyanide.
- To gauging - dewatering.
- This is an alternative method.
• Label each batch of dried granules
• Cooling
• Pack dry granules or chips into clean moisture-proof containers or sacks after
• Stir granules or chips regularly for fast drying
• Mats on raised platforms
• Spread the granules or chips thinly on clean black polythene sheets or drying surfaces and materials.

Maintain clean drying area:

The following day:
Right and continue drying in a ventilated room over:
Any insufficiency dried batch during hot and dry weather:
Dry granules or chips completely:
It takes 6 to 8 hours to dry:
Including honey bees:
Dust, animals, pests:
Prevent contamination by:

During drying surface:
Dry granules or chips per m²:
Do not load more than 5kg:

In the day:
Begin early or begin drying early:
Morning and process quickly:
Begin processing early in the:
During dry weather:
Cassava to HC only:
For sun drying, process
Put the flour in a clean moisture-proof container.

- Sieve if necessary
- Leave to cool

Mill: Dried granules or chips to fine flour (particle size: 250 to 500µm)

Manual Sieving

Mill:ing and Sieving

- Avoid overloading the mill or sifter
- Prevent air pollution (dust)

and noise
Packaging and Storage

- Store bags of flour on pallets in well-ventilated storage rooms free from high humidity and pests.
- Sew the top securely.
- Weigh and pack the flour in bags of appropriate sizes.

Information on the label.
- Necessary product precaution.
- Label all bags "High Quality".
- Prevent moisture absorption.
- Use clean bags that prevent contamination and spoilage.
Store properly labelled packaged flour on shelves for marketing.

Use clean vehicles to transport packaged flour for distribution or storage.

Avoid contamination through split or leaking sacks.
user-industries.

Available quantities improve the livelihoods of cassava farmers and the profitability of HOGCF into industry will widen the market for cassava roots, increase food security in the Fast Food Industry and for the manufacture of other high-grade foods, etc.

home cooking, there are large, unexploited market opportunities for HOGCF industrial products of high quality. In addition to the use of HOGCF for direct consumption and the manufacture of high-quality products, there is a potential for the use of HOGCF for direct consumption and the manufacture of high-quality products.

Although the subject of the manual did not include the profitability of the cooperative, rural environments and small-scale processors and farmers, the technology described in this manual has been found to be suitable in...

We are supported primarily by the Consultative Group for International Agricultural Research (CGIAR, www.cgiar.org). We are supported primarily by the Consultative Group for International Agricultural Research (CGIAR, www.cgiar.org).