

CODEX ALIMENTARIUS COMMISSION



Food and Agriculture
Organization of the
United Nations



World Health
Organization

Viale delle Terme di Caracalla, 00153 Rome, Italy - Tel: (+39) 06 57051 - E-mail: codex@fao.org - www.codexalimentarius.org

Agenda item 11¹

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JOINT FAO/WHO FOOD STANDARDS PROGRAMME

FAO/WHO COORDINATING COMMITTEE FOR AFRICA

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Submitted by Nigeria

PART I: PROPOSAL FOR NEW WORK ON REGIONAL CODEX STANDARD FOR FERMENTED LOCUST BEANS (*PARKIA BIGLOBOSA*)

INTRODUCTION

Parkia biglobosa, the **African locust bean**, is a perennial deciduous tree in the family Fabaceae. It is found in a wide range of environments in Africa and is primarily grown for its pods that contain both a sweet pulp and valuable seeds. Where the tree is grown, the crushing and fermenting of these seeds constitutes an important economic activity. Various parts of the locust bean tree are used for medicinal and food purposes. Fermented seeds are an important and widely used condiment in cooking. Fermented locust beans are a popular condiment in West African cooking. They are made by boiling, fermenting, and sun-drying locust beans. They have a strong smell and a complex flavor that some describe as being similar to chocolate, miso, and cheese. Fermented Locust beans go by several names in various languages such as Daddawa (Hausa), Iru (Yoruba), Ogiri (Igbo), Sumbala, Narghi, Kpalugu, Kinda, Netetou amongst other names.

1. PURPOSE AND SCOPE OF THE STANDARD

The scope of the work is to establish a worldwide quality standard for fermented locust bean (*Parkia biglobosa*) fit for human consumption, in fresh, chilled, frozen or dried or ground form to facilitate international trade and consumer protection.

The objective of the standard is to consider the essential quality characteristics of fermented locust beans for industrial food production and for direct human consumption, including for catering purposes and other essential uses as required, to aid international trade in this product.

2. RELEVANCE AND TIMELINESS

As a result of the increasing use of fermented locust bean as a food condiment in most African countries and with increasing exports to urban markets and online global markets worldwide, it is necessary to establish a commodity standard covering the safety, quality, hygiene and labeling in order to have a reference that has been internationally agreed by consensus between the producing, consuming and trading countries across the world. In addition, the drafting of a Codex standard for fermented locust bean will help to protect consumers' health and promote fair trade in accordance with the international agreements in particular the WTO SPS and TBT Agreements.

Fermented locust bean is used predominantly as spice for soups and stews as a means of improving taste and flavor. Currently with increasing cost and reduced access to animal protein sources and the increased directional shift towards plant based protein, the use of fermented locust bean as protein source is increasing as the locust bean contains as much as 35% protein.

3. MAIN ASPECTS TO BE COVERED

The standard entails main aspects related to the definition of the produce, essential quality factors e.g. moisture and labeling requirements in order to provide certainty to the consumer on the nature and characteristics. The standard will ensure the supply of high quality and safe products to protect consumer's

¹ Subject to the agreement of the Committee and time availability.

health and against misleading practices by including all the necessary parameters such as moisture, proper labeling, and other permissible limits among others.

The most relevant items which may be considered are related to:

- Establish the minimum requirements of fermented locust bean which shall be complied with, independently from the quality parameters and other requirements regardless of class.
- Define the categories to classify fermented locust bean in accordance with its characteristics.
- Establish the tolerance as regards quality and size that may be permitted for fermented locust bean contained in a package.
- Include the provisions to be considered relating to the uniformity of the packaged product and the packaging used.
- Include provisions for the labeling and marking of the product in accordance with the General Standard for the labeling of Pre-packaged Foods.
- Include provisions for pesticides and contaminants with the reference to the General Standard for Contaminants and toxins in food.
- Include provisions for hygiene with the reference to the general principles of food hygiene and other relevant codes of hygiene practices.
- References to methods of analysis and sampling

4. ASSESSMENT AGAINST THE CRITERIA FOR THE ESTABLISHMENT OF WORK PRIORITIES

General Criteria

Codex standard for fermented locust bean would be beneficial for developing and under developed countries because they are the major producers, exporters and consumers. Establishing a standard for the commodity as a spice is necessary to meet minimum requirements for food quality and safety to ensure consumer protection.

(a) Volume of production and consumption in individual countries and volume and pattern of trade between countries

Parkia biglobosa is found in Tropical South America, South East Asia and in nineteen African countries: Senegal, The Gambia, Guinea Bissau, Guinea, Sierra Leone, Mali, Côte d'Ivoire, Burkina Faso, Ghana, Togo, Benin, Niger, Nigeria, Cameroon, Chad, Central African Republic, Zaire, Sudan, and Uganda. In Nigeria about 200,000 tonnes are produced annually. The processing of fermented locust bean provides income and employment opportunities for the producing nation.

(b) Diversification of national legislations and apparent resultant or potential impediments to international trade

There exists only one national standard for fermented locust bean which is the:

- Nigerian Industrial Standard, NIS1111:2020: "African Fermented Condiments (Locust bean, Soya Bean etc)"

The lack of harmonized and internationally accepted standards is detrimental to the trade of fermented locust beans and it leads to fraudulent practices and rejections of exports. Therefore, development of a Codex standard will allow the different stakeholders to harmonize their different requirements to facilitate international/regional/local trade.

(c) International or regional market potential

Trade volumes for fermented locust bean are not readily available in an official format. However, as at the year 2022, the world trade of locust beans and seeds (including fresh and dried) stood at \$42 million. Online records showed top exporter was the United States, and the top importer was Trinidad and Tobago (<https://oec.world/en/profile/hs/locust-beans-and-seeds>).

Regionally, West Africa, to be more precise, it's primarily consumed within Nigeria, Ghana, and Cameroon. Similarly, most of the trade is informal and local, making it difficult to quantify exact volumes.

However, the increasing popularity of West African cuisine "globally" is driving demand for Iru, leading to increased trade, especially with countries like the United States and Europe.

With the apparent increase in global demand for African flavors and ingredients, the trade of Iru is expected to increase. However, challenges related to standardization, quality control, and sustainable production need to be addressed to fully realize the potential of this valuable ingredient.

(d) Amenability of commodity to standardization

The characteristics of fermented locust bean from its cultivation to retail sale e.g. harvesting, composition, fermentation, quality characteristics, packaging, etc. all lead to adequate parameters for the standardization of the product.

(e) Coverage of the main consumer protection and trade issues by existing or proposed general standards

There is no commodity standard covering fermented locust bean as spices in international/regional trade considering that fermented locust bean is a widely consumed spice in Africa and gaining popularity across the globe. The proposed standard will heighten consumer protection and facilitate fermented locust bean trade by establishing an internationally agreed quality standard.

(f) Work already undertaken by other international organizations in this field and/or suggested by the relevant international intergovernmental body(ies)

There is no work currently being carried out on the product nor has any been suggested by any relevant international organization.

5. RELEVANCE TO THE CODEX STRATEGIC OBJECTIVES

The proposal is in line with the Strategic Vision Statement of the Strategic Plan 2020 - 2025, in particular, Objectives 1.1, 3.1, and 3.2 and aims at setting up internationally accepted minimum quality requirements of fermented locust bean for human consumption with the purpose of protecting the consumer's health and achieving fair practices in food trade. It also contributes to fair practices in trade wherein the farmers will be able to assess their produce with reference to the quality standards thereby empowering them to realize more monetary values.

6. IDENTIFICATION OF ANY NEED FOR ANY REQUIREMENTS FOR AND AVAILABILITY OF EXPERT SCIENTIFIC ADVICE:

Scientific advice from external global bodies like FAO/WHO; JECFA and others are welcomed, but no expert scientific advice is foreseen at this stage. Published research documents by international bodies will be referred in the process of preparing the standard, if found necessary.

7. IDENTIFICATION OF ANY NEED FOR TECHNICAL INPUT TO THE STANDARD FROM EXTERNAL BODIES SO THAT THIS CAN BE PLANNED FOR.

The technical inputs from ISO, ARSO, American Spice Trade Association, European Spice Association and World Spice Organization shall be welcomed. Also, ISO standards can be used as a step process to frame the codex standard for fermented locust bean.

8. PROPOSED TIMELINE FOR COMPLETION OF THE NEW WORK

DATE	ADVANCE AND PROCEDURE
25 th CCAFRICA	Consideration of new work by the 25th session of CCAFRICA
CCEXEC88	Critical review of proposal by CCEXEC; Approval of new work proposals by the Commission
CAC48	Approval of new work proposals by the Commission
26 th CCAFRICA	Consideration at Step 3 by the 26th CCAFRICA Approval at Step 3.
CCEXEC90	Consideration at Step 5 by the CCEXEC
CAC50	Adoption at Step 5 by CAC or Step 5/8

PART II: PROPOSAL FOR ESTABLISHMENT OF A SUBSIDIARY BODY OF THE CODEX ALIMENTARIUS COMMISSION

1) INTRODUCTION

Roots and Tubers are plants yielding starchy roots, tubers, rhizomes, corms, bulbs and stems. They are used mainly for human food (as such or in processed form), for animal feed and for manufacturing starch, alcohol and fermented beverages including beer. In addition to high water content, (ranging from 70 to 80 percent), these crops contain mainly carbohydrates (starches that account for 16-24 percent of their total weight) with very little protein and fat (amounting from 0 to 2 percent each).

Root and tuber crops produce large quantities of energy per day, in comparison with cereals. They have been playing more and more important roles in global food and energy security. The major root and tuber crops – potato, sweet potato, cassava, and yam – occupy approximately 53.93 million hectares worldwide and produce 736.747 million tonnes annually (FAO, 2008).

It is apparent that Root and tuber crops counts as an important source of food and nutrition that households in most developing countries depend on. The most common staple foods in the African region are processed from Root and Tuberous Crops, these crops in question included but not limited to Cassava, Yams, sweet potato, Taro (coco yam) and aroids etc. It equally important to note that the market on these commodities presents a unique set of opportunities and challenges that could influence its trade.

Individually, cassava, potato, sweet potato, and yam rank among the most important food crops worldwide in terms of annual volume of production. Potato, sweet potato, and cassava rank among the top ten food crops produced in developing countries.

Furthermore, most of the roots and tuberous crops are grown mainly in developing countries in Africa, Caribbean Islands, Latin America and Australian regions.

Yam is the common name for some plant species in the genus *Dioscorea* (family Dioscoreaceae) that form edible tubers (some other species in the genus being toxic). They are [perennial herbaceous vines](#) mainly cultivated for the consumption of their [starchy](#) tubers in many [temperate](#) and [tropical](#) regions.

Cassava, manioc, or yuca *Manihot esculenta*, (among numerous regional names) a perennial plant, extensively cultivated in [tropical](#) and [subtropical](#) regions for its edible [starchy](#) root [tuber](#). Cassava is predominantly consumed in boiled form, but substantial quantities are processed to extract cassava starch, called [tapioca](#), and fried/dried flakes called garri which is used for food and animal feed.

FAO classified some of the roots and tubers as follows:

POTATOES (Irish potato): *Solanum tuberosum*

A seasonal crop grown mainly in temperate zones all over the world, but primarily in northern hemisphere.

SWEET POTATOES: *Ipomoea batatas*

A seasonal crop grown in tropical and sub-tropical regions.

CASSAVA (manioc, mandioca, yuca): *Manihot esculenta*, *utilissima* and *dulcis*

A semi-permanent crop grown in tropical and sub-tropical regions.

YAUTIA ("Chou caraibes"): *Xanthosoma*

Grown mainly in the Caribbean and used for food.

TARO (Cocoyam, old cocoyam, colocasse): *Colocasia esculenta*

Taro is grown throughout the tropics for food.

YAM: *Dioscorea*

Grown throughout the tropics for food.

2) NEED OF HAVING A HARMONIZED STANDARD FOR ROOTS AND TUBERS

Regional and to some extent global food security are hinged on Roots and tubers especially in developing countries. The reason has always been as a result of their availability, richness in carbohydrates, vitamins, and minerals, essentially, provision of nutrients to millions. Despite their importance, these food sources have continued to face challenges relating to production, storage, processing, trade, and food safety. Having a Codex Committee, dedicated to Codex activities on Roots and Tubers can address these challenges and promote the safe and fair trade of these commodities in line with Codex rules and procedures.

Furthermore, Harmonization of standards for roots and tubers under Codex will entail the following benefits for the various roots and tubers producing countries with respect to:

Improved Food Safety: by ensuring the safety of roots and tubers which are crucial for public health and consumer protection are improved upon.

Increased Food Security: these commodities are essential for food security, therefore there will be significant increase of the vulnerable populations' access to sufficient, safe and nutritious food that will meet their dietary needs or requirements.

Enhancement of Trade and Economic Development: upon harmonization/elaboration, the standards shall address technical barriers inhibiting its trade thereby facilitating the trade so much that it will benefit producers and consumers alike.

Strengthen its growing Importance: the sudden increase on global demand for roots and tubers as a result of population growth, urbanization, and changing dietary patterns will be sustained and improved upon.

Nutritional Value: harmonized Codex standards for the commodity shall be employed in promoting the nutritional benefits of roots and tubers which as a result can contribute to improved diets.

The continual changes with respect to international trade has led to the requirement by producers to have single, globally acceptable technical standards and conformance tests. Even though there are national and ongoing development of regional standards for roots and tubers, there is no international (food) standards body that deals with product specific harmonized standards for Yam, Potato, cassava etc. Hence the need for the Codex Alimentarius Commission which has inter-governmental participation from considerably large roots and tubers producing and consuming countries to provide an avenue for discussions and formulations of harmonized standards.

3) VOLUME OF PRODUCTION AND CONSUMPTION IN INDIVIDUAL COUNTRIES AND VOLUME AND PATTERN OF TRADE BETWEEN COUNTRIES

Potatoes, cassava, yams, sweet potatoes and taro are the major roots and tubers produced globally (figure 1). Potatoes were the most produced commodity in the group, with 375 million tonnes in 2022, (up 16 percent compared with 2000), followed by cassava with 330 million tonnes (up 88 percent compared with 2000). The production of each of the remaining roots and tubers was below 100 million tonnes in 2022, with divergent trends. The production of sweet potatoes declined by 38 percent between 2000 and 2022, while yams and taro volumes grew by 123 percent and 114 percent, respectively. Roots and tubers were mainly produced in Africa and Asia, with 368 and 360 million tonnes in 2022, thus together accounting for 80 percent of global production.

Figure 8: World production of top roots and tubers

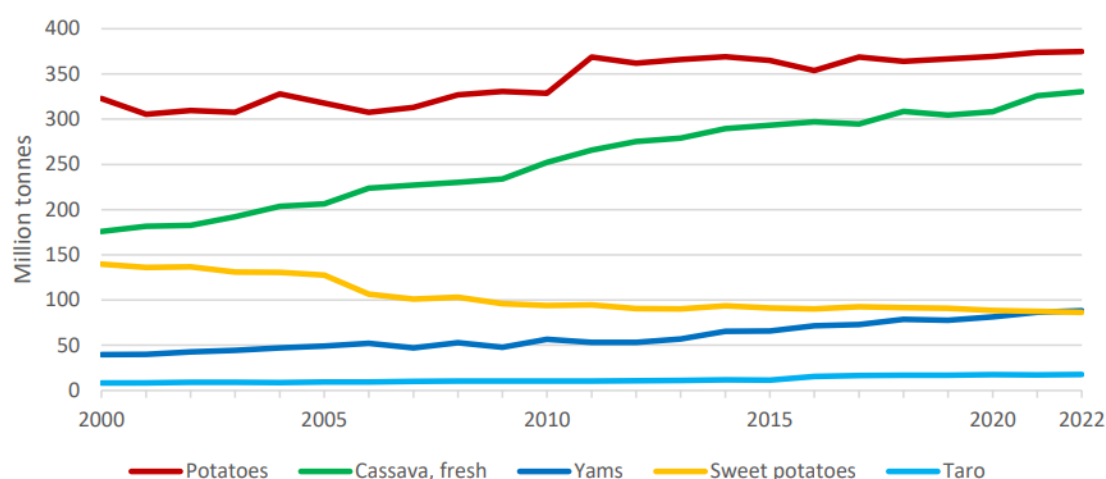


Table C.45. Roots and tubers projections: Production and food consumption

Calendar year

	PRODUCTION (kt)		Growth (%) ⁴		FOOD CONSUMPTION (kg/cap)		Growth (%) ⁴	
	Average 2020-22est	2032	2013-22	2023-32	Average 2020-22est	2032	2013-22	2023-32
WORLD	251 088	295 913	2.23	1.68	15.7	17.2	0.63	1.02
NORTH AMERICA	5 706	5 968	1.23	0.33	12.6	12.5	0.92	-0.22
Canada	971	1 016	0.44	0.40	17.1	16.7	1.89	-0.50
United States	4 735	4 952	1.40	0.31	12.1	12.0	0.76	-0.19
LATIN AMERICA	14 084	15 040	0.02	0.84	11.6	12.1	-0.17	0.49
Argentina	638	709	1.62	0.93	9.2	9.0	0.28	-0.28
Brazil	5 703	5 249	-2.99	-0.51	11.0	10.6	-3.38	-0.18
Chile	298	320	3.00	0.68	12.8	14.2	2.03	0.77
Colombia	1 448	1 737	2.42	2.20	20.9	23.4	1.22	1.25
Mexico	406	447	0.40	0.92	3.4	3.5	-0.12	0.31
Paraguay	1 080	1 347	3.00	1.98	38.6	39.8	0.05	0.03
Peru	1 799	2 013	3.00	1.59	32.9	33.9	2.32	0.50
EUROPE	28 028	29 493	1.54	0.41	14.6	14.8	-1.26	0.12
European Union ¹	11 990	12 298	0.57	-0.01	8.7	8.0	-4.88	-0.86
United Kingdom	1 184	1 297	0.50	0.86	22.0	22.9	1.37	0.34
Russia	7 653	8 261	3.00	0.48	25.4	27.2	1.68	0.50
Ukraine	5 641	6 109	3.00	1.10	27.9	32.7	1.47	2.21
AFRICA	100 232	127 761	2.81	2.65	39.3	41.1	0.44	0.87
Egypt	1 241	1 615	3.00	2.33	6.7	7.5	0.99	0.91
Ethiopia	2 638	3 408	3.00	2.89	17.8	18.2	-0.21	0.81
Nigeria	34 528	45 225	3.00	3.04	67.9	76.7	0.60	2.28
South Africa	513	503	1.59	0.44	4.9	4.7	-0.48	-0.23
ASIA	101 947	116 443	2.28	1.22	9.8	10.1	0.41	0.35
China ²	44 981	47 098	1.69	0.29	15.4	15.4	0.03	0.00
India	14 615	17 318	3.00	2.11	6.4	6.9	0.95	1.38
Indonesia	10 154	11 835	2.84	1.23	16.9	18.3	1.98	0.33
Iran	995	1 102	1.00	0.88	9.0	9.2	-0.47	0.11
Japan	706	683	-1.81	-0.14	6.2	6.2	-0.72	0.06
Kazakhstan	847	1 092	3.00	2.28	20.4	23.0	1.09	0.97
Korea	281	294	2.49	0.20	5.5	6.3	2.79	0.85
Malaysia	42	38	3.00	0.31	3.1	3.5	1.78	1.16
Pakistan	1 121	1 302	3.00	2.15	3.0	3.1	0.75	1.02
Philippines	1 134	1 445	2.91	2.12	8.4	9.6	1.52	1.00
Saudi Arabia	77	90	-0.66	2.26	4.0	4.4	1.11	0.69
Thailand	11 626	14 849	3.00	2.13	4.9	5.7	1.17	1.37
Türkiye	740	748	-0.81	0.80	5.5	5.1	-2.53	-0.38
Viet Nam	4 367	5 465	3.33	1.99	3.2	3.5	0.45	0.62
OCEANIA	1 091	1 208	0.56	1.38	20.0	19.4	-1.28	0.12
Australia	243	264	-1.10	1.00	9.6	8.9	-2.10	-0.60
New Zealand	145	151	2.73	0.50	11.1	10.8	-1.15	0.01
DEVELOPED COUNTRIES	37 891	40 175	1.44	0.49	12.6	12.7	-0.66	0.00
DEVELOPING COUNTRIES	213 197	255 738	2.38	1.88	16.4	18.1	0.85	1.14
LEAST DEVELOPED COUNTRIES (LDC)	51 025	65 896	2.82	2.58	32.9	34.9	0.80	0.53
OECD³	23 411	24 484	0.73	0.33	9.9	9.8	-1.23	-0.10
BRICS	73 465	78 430	1.63	0.63	11.5	11.5	-0.01	0.18

Note: Calendar year. Average 2020-22est: Data for 2022 are estimated. Production and consumption are expressed on dry weight basis.

1. Refers to all current European Union member States.

2. Refers to mainland only. The economies of Chinese Taipei, Hong Kong (China) and Macau (China) are included in the Asia aggregate.

3. Excludes Iceland and Costa Rica but includes all EU member countries.

4. Least-squares growth rate (see glossary).

Source: OECD/FAO (2023), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database). dx.doi.org/10.1787/agr-outl-data-en

4) INFORMATION ON PRESENT MARKET SITUATION

The largest producing regions of roots and tubers in the base period are Asia (102 Mt) and Africa (100 Mt). In Sub Saharan Africa, roots play a significant role as a staple crop. Globally, about 130 Mt are used as food, 57 Mt as feed, and 33 Mt for other uses, mostly biofuel and starch. As the perishable nature of these crops prohibits significant international trade in fresh produce, countries tend to be self-sufficient. About 15 Mt are currently traded internationally, mostly in processed or dried form. Thailand and Vietnam are the leading exporters and the People's Republic of China (hereafter "China") is the main destination. Global production of roots and tubers reached 251 Mt (dry matter) in the base period (2020-22); about 5 Mt has been added annually in the past years and consumed mainly as food. The prices of roots and tubers (measured by the Cassava (flour) wholesale price in Bangkok) increased again significantly in 2022 as demand was high, in particular in China. Global quantities traded increased by 0.5 Mt.

5) MAIN DRIVERS FOR THE PROJECT

Cultivation, propagation, transportation and storage of roots and tubers requires few inputs and affords farmers greater flexibility in terms of timing the harvest as the crop can be left on the ground well after reaching maturation. Their tolerances however are not consistent with weather conditions, for instance "drought", makes it an important part of climate change adaptation strategies. Compared to other staples, roots and tubers competes favorably in terms of price and diversity of uses. For instance, High Quality Cassava Flour (HQCF),

cassava is increasingly targeted by governments in Africa as a strategic food crop which does not exhibit the same levels of price volatility as other imported cereals. Mandatory blending with wheat flour helps reduce the volume of wheat imports, thereby lowering import bills and conserving precious foreign exchange. The drive towards energy security in Asia, combined with mandatory blending requirements with gasoline, has led to the establishment of ethanol distilleries that use cassava as a feedstock. With regard to trade, processed cassava manages to compete successfully in the global arena, e.g. with maize-based starch and cereals for animal feeding applications.

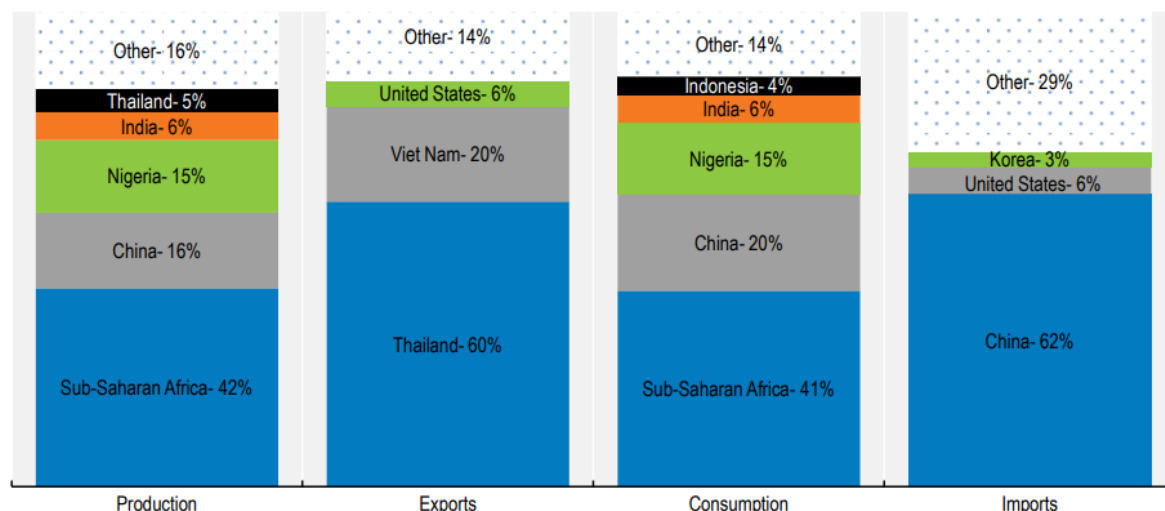
Potatoes are generally confined to food use and are a substantial component of diets in developed regions, particularly in Europe and North America. As overall food intake of potato in these regions is very high and may have reached saturation, the scope for consumption increases to outpace population growth remains limited. Developing regions, however, provide some growth momentum to potato production at the world level.

Global sweet potato cultivation has declined in recent years, mostly due to a sharp decline in acreage (which shows no sign of abating) in China, the world's foremost producer. Food demand largely defines the growth potential of sweet potato and other less prominent roots and tuber crops given the limited commercial viability for diversified usage. Consequently, consumer preferences along with prices play important roles in shaping consumption.

6) PROJECTION HIGHLIGHTS FOR ROOTS AND TUBERS

World production and utilization of roots and tubers is projected to increase by about 18% over the next decade. Production growth in low-income regions could reach 2.6% p.a. while supply in high-income countries should grow at only 0.3% annually. Global land use is projected to increase by 6 Mha to 71 Mha, but there will be some regional shifts. African countries are expected to increase their cultivation area, while reductions are projected for Europe and America. Moreover, many farmers in Thailand shifted from Cassava to rice which had better production incentives. Production growth is mainly attributed to investments in yield improvements in Africa and Asia, as well as an intensification of land use in these regions.

Figure 11.1. Global players in roots and tubers markets in 2032



Note: Presented numbers refer to shares in world totals of the respective variable

Source: OECD/FAO (2023), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database), <http://dx.doi.org/10.1787/agr-outl-data-en>.

StatLink  <https://stat.link/w863k0>

7) BENEFITS OF INITIATING AND SUSTAINING THIS CODEX SUBSIDIARY BODY BY COMMISSION SHALL INCLUDE:

- Elimination of multiplicity of standards, including standards fixed and defined at the farmer, trader, processor, exporter and importer levels.
- Codex deliberations shall provide an avenue that will enable participation of both producing and consuming countries.
- Ensures total transparency and enables validation on account of inter-governmental involvement.
- Promotes healthy trade and outlives trade barriers, and realistic equivalence determination.

- Technical ability to meet standards and capacity building.
- Standardising costs of certification- cost effectiveness
- Stakeholder involvement in the development of locally relevant standards and certification

8) COMMODITIES WHICH WOULD NEED SEPARATE STANDARDS INDICATING WHETHER RAW, SEMI-PROCESSED OR PROCESSED.

For a start an illustrative list of roots and tubers that need standardization shall include: Yam (all edible yam species including *Dioscorea alata* (water yam), *Dioscorea rotundata* (white guinea yam), *Dioscorea esculanta* (Chinese or lesser yam), *Dioscorea cayenensis* (yellow guinea yam), *Dioscorea bulbifera* (aerial or bulbils yam) and *Dioscorea dumetorum* (trifoliolate or bitter yam)), Cassava, Potato, sweet potato (all edible species including Cilembu, Garnet, Hannah, Japanese, Jewel, and Purple Stoke), Taro, carrot, turnip, Beet, Radish, Ginger, Rhizome, Jicama, Arrowroot, Rutabaga, Yacon, Mashua, Eddoe

9) ADVANTAGES OF A HARMONIZED STANDARD UNDER CODEX

World trade on Roots and Tubers (along with its improved varieties from different regions) expanded considerably throughout the last century. This development warrants the need for detailed deliberations to have some unified standards on the commodities. More also the subjects under this subsidiary body shall prescribe microscopic analysis on characters/varieties and specifications and cannot be done by a codex task force all alone. Furthermore, Roots and Tubers though are plant material, acquire their status as per the name through processes by which they appear, cultivated and/or propagated. Therefore, the activities of the new Codex subsidiary cannot be categorized under the purview of other active Codex Committees.

The Codex Subsidiary body when approved will effectively bring to the fore the inter- Governmental participation in harmonization that will:

- Provide bridge between Roots and Tuber producing and importing countries.
- Create an opportunity and avenue to share experiences with standards and conformity requirements.
- Provide platform for the exchange of views on orientations for good practice that encourages open markets.
- Ensure that outcomes of its sessions serves as input into the ongoing work for removal of trade barriers and facilitate trade.
- Catalyze upgrading the standardization of grades and varieties starting from the domain of producing countries to the international markets.
- Create opportunity to integrate developing countries into the international trading system.
- Encourage development of common understanding between the developed and developing world.

10) THE NEED FOR EXPERT AND OR SCIENTIFIC ADVICE:

The commodities to be considered by the subsidiary body are natural Agricultural products, there will be no need of an exclusive scientific advice to take on with the subjects under the subsidiary body.

The subject relating to harmonizing of standards are to be dealt with the stakeholders in food safety and mostly trade and commerce who have the expertise and experience in determining factors.

11) THE NEED FOR TECHNICAL INPUT TO THE STANDARD FROM EXTERNAL BODIES

Technical inputs will be required from International Organization of Standardization (ISO), African Organisation for Standardisation (ARSO) and other international organizations that have done work on standardization of Roots and Tubers about this proposal. The proposed Committee on Roots and Tubers will take on further initiatives in consultations with these Standardisation bodies and are suggested to be notified.

12) TERMS OF REFERENCE

- To elaborate worldwide standards and codes of practices as may be appropriate for Roots and Tubers
- To consult with ISO, ARSO and other organizations working on standards for Roots and Tubers on the elaboration of worldwide standards and codes of practices with particular regard to ensuring that there is no duplication of standards or codes of practice and that they follow the same broad format
- It is proposed that the suggested committee may meet every 18 months. In case the Commission agrees, the first session is proposed to be held in the second half of 2027. The specific dates will be finalized in consultation with the Codex Secretariat.

- Since there are several items covered under the proposed committee, the number of sessions required to complete the work cannot be prescribed

13) HOSTING OF THE COMMITTEE

Should the Codex Alimentarius Commission decide to establish a “Codex Committee On Roots and Tubers”, Nigeria shall host the Committee and its open to co-host with any other Codex member.

A sample of Three project documents proposed for standardization are in Annex I, II and III.

The Contact Point: Standards Organisation of Nigeria,

52 Lome Crescent, Zone 7, Wuse, Abuja.

Email: codexsecretariat@son.gov.ng

Website: www.son.gov.ng

14) PROPOSED SCHEDULE

DATE	ACTIVITY
January 2025	Nigeria – Presentation of the proposal to set up the Codex Committee on Roots and Tubers Consideration and Approval of the proposal by the FAO/WHO Coordinating Committee for Africa (CCAfrICA).
November, 2025	Nigeria – Presentation of the proposal to set up the Codex Committee on Roots and Tubers For Approval of the proposal by the Codex Alimentarius Commission.
December, 2025 to September, 2026	Completion of arrangements with the Codex Secretariat. Prepare draft agenda along with new work proposals. These proposals will be prepared through electronic consultation with members to commence work of the Committee.
October/November, 2026	Critical review of new work proposals by CCEXEC Approval of new work proposals by the Commission.
Between December 2026 and June 2027	Codex Secretariat to circulate the agenda along with items of approved new work
Second half of 2027	Committee to hold its first session and consider new work items at Step 3 Committee also to consider prioritizing its work

ANNEX I

STANDARD FOR CASSAVA FLOUR

1. Scope

This Codex standard specifies the quality and safety requirements, reference test methods, packaging and labelling requirements for Cassava Flour.

2. Optional Ingredients

Cassava flour may be fortified with micronutrient or macronutrients at levels approved by the Codex Alimentarius Commission- General Standard on Food Additives (CAC/STAN 192- Rev 2019).

3. Quality Requirements**3.1 General Requirements**

3.1.1 The color, taste, and odor of cassava flour shall be characteristic of the product

3.1.2 The product shall be free from objectionable matter.

3.2 Specific Requirements

The product shall conform to the quality requirements given in Table 1;

Table 1
Specific Requirements

S/N	Parameters	Requirements		Reference Test Methods
1	Moisture % (m/m) (max)	10.0		ISO 1666
2	Crude fiber % (m/m) (max)	2.0		ISO 5498
3	Sulphated ash m/m (on dry basis) (max)	0.6		ISO 5809
4	Total acidity % (m/m) (max)	1.0		ISO 904
5	Hydrocyanic acid and its glucosides measured as hydrocyanic acid (mg/kg)(max)	10		ISO 2164
6	Starch content (%) (min)	65		ISO 10520
7	Ash % (m/m) (max)	2.0		AOAC 923.09
8	Solubility test	shall not be soluble in cold water and in 96% ethanol		ISO 11214
9	Iodine Test	Blue-black coloration		Titrimetry
10	Particle Size	Coarse	Fine	ISO 3588
11		Not less than 90 percent by weight shall pass through a sieve of 0.4mm aperture size	Not less than 90 percent by weight, shall pass through a sieve of 0.2mm aperture size.	

3.3 Contaminants**3.3.1 Microbiological**

The product shall comply with the requirements for the microbiological contaminants listed in Table 2;

Table 2
Microbiological Contaminants

S/N	Parameters	Requirements	Reference Test Methods
1.	Total Viable Count cfu/g (max)	1 x 10	ISO 4833
2.	Escherichia coli cfu/g	Absent in 25g	ISO 7251
3.	Salmonella cfu/g	Absent in 25g	ISO 6579
4.	Yeast / Mould cfu/g (max)	1x10 ²	ISO 21527-2

3.3.2.1 Mycotoxins

The product shall comply with the requirements for mycotoxins in Table 3;

Table 3
Mycotoxins

S/N	Parameters	Requirements	Reference Test Methods
1.	Total Aflatoxins (ppb) (max)	4	ISO 16050
2.	Ochratoxin A (ppb) (max)	5	AOAC 973.37 (12).

3.3.2.2 Pesticide Residues

Pesticide residue limits shall be in conformity with Codex Maximum Residue Limits for Pesticides and Extraneous Maximum Residue Limits in Food on Line Database, 2019 Processed Products and as indicated in Table 4

Table 4.
Pesticides Residues

S/N	Residues	Requirements
1.	Pirimiphos methyl (mg/kg) (max)	0.10
2.	Malathion (mg/kg) (max)	0.10
3.	Hydrogen cyanide (mg/kg) (max)	0.05
4.	Permethrin (mg/kg) (max)	2.0
5.	Deltamethrin (mg/kg) (max)	2.0
6.	Dichlorvos (mg/kg) (max)	2.0
7.	Fenitrothion (mg/kg) (max)	10.0
8.	Chlorpyrifus (mg/kg) (max)	10.0
9.	Bromoethane (mg/kg) (max)	5.0
10.	Carbofuran (mg/kg) (max)	0.1

3.3.2.3 Metallic

Metallic contaminants shall be in conformity with requirements in Table 5;

Table 5
Metallic Contaminants

S/N	Parameters	Requirements	Reference Test Methods
1.	Arsenic (mg/kg) (max)	0.1	AOAC 2015.01
2.	Lead (mg/kg) (max)	0.1	AOAC 2015.01
3.	Cadmium (mg/kg) (max)	0.1	AOAC 2015.01
4.	Mercury (mg/kg) (max)	0.1	AOAC 2015.01
5.	Tin (mg/kg) (max)	15.0	ISO 2447

4 Hygiene

To the extent possible under good manufacturing practice, the product shall be processed and packaged in accordance with the requirements of the Recommended International Code of Practices- General Principles of Food Hygiene-CAC/RCP 1-1969, Rev. 4, 2003.

5 Packaging and Labelling

5.1 Packaging

5.1.1 The product shall be packed, transported and stored in containers, which will safeguard the hygienic and organoleptic qualities of the product.

5.1.2 The packaging materials shall be such as to protect the product against bacteria and other contaminant; it shall protect the product against any infiltration of moisture, insect infestation and leakage.

5.1.3 The packaging material shall not impart any odor, taste, or colour and any other extraneous property to the product and shall not result in contamination of the product with substances of which the packaging material is made.

5.2 Labelling

Labelling shall be in accordance with the provisions of Codex Alimentarius Commission (CAC) General Standard for the Labelling of prepackaged foods (CODEX STAN -1 1985, -Rev 2018). The package shall be hermetically sealed and marked with the following:

5.2.1 Name of the product: The name of the product shall be clearly and boldly written on the container.

5.2.2 Net weight: Net weight shall be declared in metric system.

5.2.3 Name and Address: The name and address of the manufacturer and/or packer shall be declared.

5.2.4 Country of Origin: The country of origin of the product shall be declared.

5.2.5 Lot Identification: Each container shall be permanently marked in code to identify the producing factory and the lot.

5.2.6 Batch Number: The batch number of the product shall be clearly stated on the label.

5.2.7 Date Marking: The date of manufacture or packing shall be declared. The expiry / best before date shall be boldly written on the label.

5.2.8 Storage: Cassava flour shall be stored in a dry, cool place on pallets.

6. Sampling

Sampling of cassava flour shall be done in accordance with CAC/. GL 50-2004 - Codex General Guidelines on Sampling.

7. Criteria for Conformity

The product shall be declared as conforming to the quality requirement, if each representative sample analysed conforms to all the provision of this Standard.

ANNEX II

SWEET POTATO FLOUR-SPECIFICATION

2. Scope

This Codex Standard specifies the requirements and methods of sampling and test for flour which is obtained from the processing of sweet potato [*Ipomoea batatas* (L.) Lam.] intended for human consumption.

2 Definitions

For the purpose of this standard the following definitions apply.

2.1 sweet potato flour

product prepared from dried sweet potato chips or paste by a pounding, grinding or milling process, followed by sifting to separate the fibre from the flour

2.2 food grade material

material that is free from substances that are hazardous to human health and may be permitted to come in contact with food

2.3 extraneous matter

organic matter of sweet potato origin other than sweet potato flour

2.4 foreign matter

organic and inorganic materials (such as sand, soil, glass) other than extraneous matter in the flour

2.5 practically free

without defects in excess of those that can be expected to result from, and be consistent with good cultural and handling practices employed in the production and marketing of the fresh sweet potato.

3 Essential quality and compositional requirements

3.1 Raw materials

The raw materials shall be fresh sweet potatoes, dried sweet potato chips, paste or crumbs made from fresh sweet potatoes conforming to the Codex Standard for Sweet potatoes.

3.2 General quality requirements for sweet potato flour

Sweet potato flour shall be:

- a) in the form of a fine powder and shall be white in colour;
- b) free from rancidity;
- c) practically free from extraneous matter, adulterants and rodent contamination;
- d) free from fermented, musty or any other objectionable odours;
- e) practically free from any living insect or fungus infestation and foreign matter;
- f) safe and suitable for human consumption; and
- g) of colour characteristic of the variety.

It shall not contain any other added sweetening, flavouring, colouring agent or any other foreign matter.

4.3 Compositional requirements

Sweet potato flour shall conform to the requirements in Table 1 below.

Table 1 — Compositional requirements

S/N	Parameter	Requirement	Method of test
1.	Total ash content, % by mass on dry matter basis, max.	3.0	ISO 2171
2.	Moisture content, % by mass, max	12.0	ISO 712
3.	Crude fibre content, % by mass on a dry matter basis, max.	5.0	ISO 5498

4.	Acid insoluble ash, % by mass on dry matter basis max.	0.15	Annex A
5.	Total sugar content (as sucrose) % by mass, Min	6.0	ISO 2173
6.	Starch (on dry basis), % by mass, Min	60.0	ISO 15914
7.	pH of aqueous extract	4.5 – 7.0	ISO 1842
8.	Cold water solubles (on dry basis), % by mass	12.0	ISO 941

4.4 Specific quality factors

4.4.1 Particle size

Not less than 90 % shall pass through a 600 µm sieve for fine flour and not less than 90 % shall pass through a 1200 µm sieve for coarse flour. Testing for particle size shall be done in accordance with

Sweet potato flour intended for baking purposes shall have particle size of which not less than 90% shall pass through a 250 µm sieve

4 Food additives

Food additives may be used in the preparation of sweet potato flour in accordance with CODEX STAN 192.

5 Contaminants

5.1 Pesticide residues

Sweet potato flour shall conform to maximum residue limits for pesticide residues established by the Codex Alimentarius Commission for this commodity.

5.2 Heavy metals

Sweet potatoes shall comply with those maximum levels for heavy metal contaminants established by the Codex Alimentarius Commission for this commodity.

5.3 Mycotoxin and chemical limits

Sweet potato flour shall comply with those maximum mycotoxin limits established by the Codex Alimentarius Commission for this commodity.

5.4 Other contaminants

Sweet potato flour shall comply with the maximum levels of the Codex General Standard for Contaminants and Toxins in Food and Feed (CODEX STAN 193).

6 Hygiene

Sweet potato flour shall be prepared and handled in a hygienic manner and shall conform to microbiological limits specified in Table 2.

Table 2 — Microbiological limits for sweet potato flour

S/N	Micro-organism(s)	Requirement	Method of test
1.	Escherichia coli, cfu/g, max.	<1	ISO 7251
2.	Salmonella, 25g, max.	absent	ISO 6579
3.	Yeasts and moulds, cfu/g, max.	10 ⁴	ISO 21527-1

7 Packaging

7.1 Sweet potato flour shall be packaged in food grade material which will safeguard the hygienic, nutritional, technological and organoleptic qualities of the product.

7.2 The net weight of the packages for sweet potato flour may be required to meet the relevant regulations of the destination country.

8 Labelling

8.1 The following specific labelling requirements shall apply and shall be legibly and indelibly marked:

- a) common name of the product 'sweet potato flour';
- b) name, and physical address of the manufacturer/ distributor and /or trade name/ brand name;
- c) date of manufacture;
- d) lot identification;
- e) expiry date;
- f) country of origin;
- g) the net weight in metric units;
- h) the statement 'Human Food' shall appear on the package;
- i) storage instructions; and
- j) instructions on disposal of used package.

8.2 When labelling non-retail packages, information for non-retail packages shall either be given on the packages or in accompanying documents, except that the name of the product, lot identification and the name and address of the manufacturer or packer shall appear on the packages.

9 Sampling

Sampling of sweet potato flour shall be done in accordance with ISO 24333.

10 Criteria for conformity

A lot shall be declared as conforming to this standard if samples inspected or analysed for quality requirements conform to the provisions of this standard.

ANNEX III**DRAFT STANDARD FOR High Quality Cassava Flour (HQCF)****1 Scope**

This Codex Standard specifies the requirements for quality, safety, packaging, labelling, sampling and reference test methods for High Quality Cassava Flour, which is obtained from the processing of cassava, sweet and bitter varieties (*Manihot esculenta* crantz) Intended for human consumption, industrial use and other food applications.

2. Terms and Definitions

For the purpose of this Standard, the following shall apply;

2.1 extraneous matter

organic matter of cassava origin other than the product

2.2 foreign matter

organic and inorganic materials other than extraneous matter in the product

2.3 high quality cassava flour

unfermented cassava flour prepared within 24 hours from fresh, mature cassava roots through a process of sorting, peeling, chipping or grating followed by dewatering, drying, milling, sifting and packaging

2.4 inorganic matter

sand, glass, metal, stones, clay and mud

2.5 mature

fresh cassava of age 8 – 12 months old maturity at time of harvest

2.6 organic matter

chaff, straw, weed seeds and insects, insects' fragments, rodent hairs

2.7 specks

tiny marks, spots or piece of extraneous matter in the product

3 Ingredients**3.1 Essential Ingredients**

3.1.1 Fresh, mature cassava roots without rot

3.1.2 High quality intermediate cassava products- cassava chips and cassava grits

3.2 Optional Ingredients

3.2.1 Additives

3.2.2 Preservatives

4. Quality Requirements**4.1 General Requirements**

The product shall be;

4.1.1 safe and suitable for human consumption.

4.1.2 free from unpleasant flavours and odours.

4.1.3 practically free from any living insects, insect parts and foreign matters.

4.1.4 practically free from extraneous matter.

4.1.5 colour characteristic of the variety.

4.2 Specific Requirements

The product shall comply with the specific requirements stated in Table 1:

Table 1:
Specific Requirements

S/N	Parameters	Requirements	Reference Test Methods
1.	Moisture content, % by mass (max)	12	ISO 1666
2.	Total acidity, %, by mass (max)	2.0	ISO 904
3.	Acid insoluble ash, % m/m on dry matter basis (max)	0.7	ISO 776
4.	Starch content, % by mass (min)	70.0	ISO 10520
5.	pH	5.5 – 7.0	ISO 1842
6.	Crude fibre, % by mass on dry weight basis (max)	2	ISO 5498
7.	Pasting Temperature o C (max)	75	ISO 10350
8.	Particle Size through sieve mesh of 180mm, % by mass (min)	90	ISO 3588
9.	Extraneous Matter, specks/100cm ² (max)	10	ISO 927
10.	Iodine test	Blueblack colouration	Titrimetry
11.	Viscosity (BU) (min)	750	ISO 3696
12.	Hydrocyanic acid and its glycosides measured as hydrocyanic acid mg/kg (on dry basis) (max)	10	ISO 2164
13.	Colour (L) (min)	75	Spectrometer

4.3 Contaminants

4.3.1 Microbiological

The Microbial requirements for the product shall be as stated in Table 2;

Table 2-
Microbiological Contaminants

S/N	Parameters	Requirements	Reference Test Methods
1.	Total viable count, (cfu/g) (max)	10 ⁵	ISO 4833 -1
2.	Coliforms, (cfu/g)(max)	10 ²	ISO 4832
3.	Escherichia coli,	Absent in 100g	ISO 7251
4.	Salmonella spp,	Absent in 100g	ISO 6579
5.	Staphylococcus aureus	Absent in 100g	ISO 6888
6.	Yeast / Mould (cfu/g) (max)	10 ³	ISO 21527-1,2

4.3.2 Chemical

The product shall comply with the maximum limits established by the Codex Alimentarius Commission, General Standard for Contaminants and Toxins in Food and Feed (CODEX STAN 193)

4.3.2.1 Mycotoxin

The product shall comply with the requirements as stated in Table 3;

Table 3
Mycotoxin

S/N	Parameters	Requirements	Reference Test Methods
1	Total Aflatoxin, ppb (max)	10	ISO 16050
2	Aflatoxin B1, ppb (max)	5	ISO 16050
3	Ochratoxin, ppb (max)	3	ISO 16141

4.3.2.2 Pesticide Residues

The product shall comply with Codex Maximum Residue Limits for Pesticides and Extraneous Maximum Residue Limits in Food Online Database, 2019 - Processed Products of Plant Origin.

4.3.2.3 Metallic

The product shall comply with the requirements specified in Table 4.

Table 4
Metallic Contaminants

S/N	Parameters	Requirements	Reference Test Methods
1	Arsenic (As), mg/kg (max)	0.1	ISO 11212-1
2	Cadmium (Cd), mg/kg (max)	0.1	ISO 11212-4
3	Lead (Pb), mg/kg (max)	1.0	ISO 11212-3
4	Tin (Sn), mg/kg (max)	15	ISO 2447

5. Hygiene

It is recommended that the product covered by the provisions of this standard shall be prepared in accordance with the Recommended International Code of Hygiene Practice, General Principles of Food Hygiene (CAC/RCP: 1-1969, Rev. 2003).

6. Packaging and Labelling

6.1.1 Packaging

High quality cassava flour shall be packaged in food grade material such as polypropylene laminated woven sacks which will safeguard the hygiene and organoleptic qualities of the product.

6.1.2 The packaging materials shall be such as to protect the product against bacteria

and other contaminants; it shall protect the product as far as possible against any infiltration of moisture, insect infestation and leakage.

6.1.3 The packaging material shall not impart any odour, taste or colour and any other extraneous property to the product and shall not result in contamination of the product with substances of which packaging material is made.

6.2 Labelling

Labelling shall be in accordance with the provisions of Codex Alimentarius Commission (CAC) General Standard for the labelling of prepackaged foods (CODEX STAN -11985, -Rev 2018) The package shall be hermetically sealed and marked with the following:

6.2.1 Name of the product

The name of the product "High Quality Cassava Flour" shall be clearly written on the container.

6.2.2 Name and address of manufacturer

The name and location address of the manufacturer and/or packer shall be declared.

6.2.3 Net Weight

Net weight shall be declared in metric system

6.2.4 Country of Origin

The country origin of the product shall be declared.

6.2.5 Batch number

The batch number of the product shall be clearly stated on the label.

6.2.6 Date Marking

The date of manufacture or packing shall be declared. The best before date shall be boldly written on the label.

6.2.7 Lot identification

Each container shall be permanently marked in code or in clear terms to identify the producing factory and the lot.

6.2.8 Declaration of preservative by common or international number if any**6.2.9 Instruction on disposal of used package.**

6.2.10 When labelling non-retail packages, information for non-retail packages shall be given on the package, except that the name of the product, lot identification and the name and address of the manufacturer or packer shall appear on the packages.

6.2.11 Storage condition

The Storage instruction - “store in cool dry place on pallets away from contaminants” shall be declared on the label.

7. Sampling

Sampling of High-Quality Cassava Flour shall comply with the requirements as stated in CAC/. GL 50 - Codex General Guidelines on Sampling.

8. Criteria for Conformity

A lot shall be declared as conforming to this standard if samples inspected or analysed for quality requirements conform to the provisions of this standard.