EAST AFRICAN COMMUNITY

EDICT OF GOVERNMENT

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EAS 331 (2011) (English): Green grams – Specification

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EAS 331:2011
ICS 67.060

EAST AFRICAN STANDARD

Green grams — Specification

EAST AFRICAN COMMUNITY

HS 0713.31.00

Second Edition 2011

Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in East Africa. It is envisaged that through harmonized standardization, trade barriers which are encountered when goods and services are exchanged within the Community will be removed.

In order to meet the above objectives, the EAC Partner States have enacted an East African Standardization, Quality Assurance, Metrology and Test Act, 2006 (EAC SQMT Act, 2006) to make provisions for ensuring standardization, quality assurance, metrology and testing of products produced or originating in a third country and traded in the Community in order to facilitate industrial development and trade as well as helping to protect the health and safety of society and the environment in the Community.

East African Standards are formulated in accordance with the procedures established by the East African Standards Committee. The East African Standards Committee is established under the provisions of Article 4 of the EAC SQMT Act, 2006. The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the procedures of the Community.

Article 15(1) of the EAC SQMT Act, 2006 provides that “Within six months of the declaration of an East African Standard, the Partner States shall adopt, without deviation from the approved text of the standard, the East African Standard as a national standard and withdraw any existing national standard with similar scope and purpose”.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

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Introduction

This standard has been developed to take into account:

— the needs of the market for the product;

— the need to facilitate fair domestic, regional and international trade and prevent technical barriers to trade by establishing a common trading language for buyers and sellers.

— the structure of the CODEX, UNECE, USA, ISO and other internationally significant standards;

— the needs of the producers in gaining knowledge of market standards, conformity assessment, commercial cultivars and crop production process;

— the need to transport the product in a manner that ensures keeping of quality until it reaches the consumer;

— the need for the plant protection authority to certify, through a simplified form, that the product is fit for cross-border and international trade without carrying plant disease vectors;

— the need to promote good agricultural practices that will enhance wider market access, involvement of small-scale traders and hence making farming a viable means of wealth creation; and

— the need to ensure a reliable production base of consistent and safe crops that meet customer requirements.

Contents

Green grams — Specification

1 Scope

This East African Standard specifies requirements and methods of sampling and test for the dry whole grains of the green gram of the cultivar *Vigna radiata* intended for direct human consumption.

2 Normative references

The following normative documents contain provisions which, through reference in this text constitute provisions of this East African Standard

EAS 39, *Hygiene in the food and drink manufacturing industry — Code of practice*

EAS 38, *Labelling of pre-packaged foods — Specification*

EAS 79, *Cereals and pulses as grain — Methods of sampling*

EAS 217, *Methods for the microbiological examination of foods*

ISO 520, *Cereals and pulses — Determination of the mass of 1000 grains*

ISO 605*, Pulses — Determination of impurities, size, foreign odours, insects, and species and variety — Test methods*

ISO 2164, *Pulses — Determination of glycosidic hydrocyanic acid*

ISO 2171, *Cereals, pulses and by-products — Determination of ash yield by incineration*

ISO 4112, *Cereals and pulses — Guidance on measurement of the temperature of grain stored in bulk*

ISO 4174, *Cereals, oilseeds and pulses — Measurement of unit pressure loss in one-dimensional air flow through bulk grain*

ISO 5223, *Test sieves for cereals*

ISO 5526, *Cereals, pulses and other food grains — Nomenclature*

ISO 5527, *Cereals — Vocabulary*

ISO 6322-1, *Storage of cereals and pulses — Part 1: General recommendations for the keeping of cereals*

ISO 6322-2, *Storage of cereals and pulses — Part 2: Practical recommendations*

ISO 6322-3, *Storage of cereals and pulses — Part 3: Control of attack by pests*

ISO 6639-1, *Cereals and pulses — Determination of hidden insect infestation — Part 1: General principles*

ISO 6639-2, *Cereals and pulses — Determination of hidden insect infestation — Part 2: Sampling*

ISO 6639-3, *Cereals and pulses — Determination of hidden insect infestation — Part 3: Reference method*

ISO 6639-4, *Cereals and pulses — Determination of hidden insect infestation — Part 4: Rapid methods*

ISO 13690, *Cereals, pulses and milled products — Sampling of static batches*

ISO 16002:2004, *Stored cereal grains and pulses — Guidance on the detection of infestation by live invertebrates by trapping*

ISO 16050, *Foodstuffs — Determination of aflatoxin B_1, and the total content of aflatoxin B_1, B_2, G_1 and G_2 in cereals, nuts and derived products — High performance liquid chromatographic method*

ISO/TS 16634-2, *Food products — Determination of the total nitrogen content by combustion according to the Dumas principle and calculation of the crude protein content — Part 2: Cereals, pulses and milled cereal products*

ISO 20483, *Cereals and pulses — Determination of the nitrogen content and calculation of the crude protein content — Kjeldahl method*

ISO 24557, *Pulses — Determination of moisture content — Air-oven method*

CODEX Stan 193, Codex general Standards for contaminants and toxins in Food and Feed

3 Terms and definitions

For the purposes of this standard, the following definitions shall apply:

3.1
green grams
dry whole grains of *vigna radiata*

3.2
damaged grains
grains which are distinctly identified as having been visibly affected by insects, fungi, heat, water, disease or any other causative agent. These include grains that are damaged or split in the process of handling or those that are off colour.

3.3
immature grains
Grains which are not fully developed, normally smaller in size than the mature grins, shrivelled and off colour.

3.4
objectionable odours
Odours which are entirely foreign to green grams and which, because of their presence, render green grams unfit for human consumption.

3.5
pest infestation
Presence of live insects or other organisms, either in adult or other development stages.

3.6
foreign matter
any extraneous matter than green grams or other food grains comprising of

(a) "inorganic matter" includes metallic pieces, shale, glass, dust, sand, gravel, stones, dirt, pebbles, lumps or earth, clay, mud and animal filth etc;

(b) "organic matter" consisting of detached seed coats, straws, weeds and other inedible grains etc.

3.7
type admixture
Other grams that are not green grams.

4 Quality Requirements

4. 1 General requirements

Green grams shall meet the following general requirements/limits as determined using the relevant standards listed in Clause 2. Green grams;

a) shall be the dried mature seeds of pulse green gram (*Phaseolus aurues Roxb. or phaseolus radiatus Roxb);*

b) shall be well-filled, clean, wholesome, uniform in size, and shape;

c) shall be free from substances which render them unfit for human or animal consumption or processing into or utilization thereof as food or feed;

d) shall be free from abnormal flavors, musty, sour or other undesirable odour, obnoxious smell and discoloration;

e) shall be free from micro-organisms and substances originating from micro-organisms, fungi or other poisonous or deleterious substances in amounts that may constitute a hazard to human health.

4.2 Specific requirements

4.2.1 Grading

Green grams shall be graded into three grades on the basis of the tolerable limits established in Table 1 which shall be additional to the general requirements set out in this standard

4.2.2 Ungraded green grams

Shall be green grams which do not fall within the requirements of Grades 1, 2, and 3 of this standard but are not rejected green grams.

Note: For Tanzania and Burundi this requirement shall not apply.

4.2.3 Reject grade green grams

Reject green grams shall be peas which are musty, sour, heating, materially weathered, or weevily; which have any commercially objectionable odour; which contain insect webbing or filth, animal filth, any unknown foreign substance, broken glass, or metal fragments; or which are otherwise of distinctly low quality. The characteristics are not within the parameters specified in Table 1. They cannot satisfy the conditions of under grade green grams and shall be graded as reject green grams and shall be regarded as unfit for human or animal consumption.

Table 1 — Specific requirements

Characteristics		Limits			Method of test
		Grade 1	Grade 2	Grade 3	
Moisture, % max m/m		12.0	12.0	12.0	ISO 24557
Size grading		98 %	98 %	n/a	ISO 605
Purity, % min m/m		99.0	99.0	99.0	
Defective, % max m/m		2.0	4.0	6.0	
Immature grain % max m/m		2.0%	3.0	4.0	
Contrasting classes		0.5%	1.0	2.0	
Classes that blend max % m/m		5.0	10.0	15.0	
Germination Excluding hard seeds		90 %	n/a	n/a	
Sprout test		Suitable	n/a	n/a	
Foreign material % max m/m	Organic	0.65	0.65	0.65	
	inorganic	0.25	0.25	0.25	
	Filth	0.1	0.1	0.1	
Other edible grains %max m/m Any edible grains (including oilseeds) other than green grams		0.1	0.5	3.0	
Inset /pest damaged % max m/m Grains per cent by count clean-cut weevil bored		1	2	3	
Total Aflatoxin (AFB1+AFB2+AFG1 +AFG2)), ppb		10			ISO 16050
Aflatoxin B1 only, ppb		5			
Fumonisin ppm		2			

5 Contaminants

5.1 Heavy metals

Dry green grams shall comply with those maximum limits for heavy metals established by the Codex Alimentarius Commission for this commodity.

5.2 Pesticide residues

Dry green grams shall comply with those maximum pesticide residue limits established by the Codex Alimentarius Commission for this commodity

Note: where the use of certain pesticides is prohibited by some Partner States, then it shall be notified to all Partner States accordingly.

5.3 Mycotoxin limits

Dry green grams shall comply with those maximum mycotoxin limits established by the Codex Alimentarius Commission for this commodity. In particular, total aflatoxin levels in Dry green grams for human consumption shall not exceed 10 µg/kg (ppb) with B_1 not exceeding 5 µg/kg (ppb) when tested according to ISO 16050.

6 Hygiene

6.1 Dry green grams shall be produced, prepared and handled in accordance with the provisions of appropriate sections of EAS 39

6.2 When tested by appropriate standards of sampling and examination listed in Clause 2, the products:

— shall be free from microorganisms in amounts which may represent a hazard to health and shall not exceed the limits stipulated in Table 2;

— shall be free from parasites which may represent a hazard to health; and

— shall not contain any substance originating from microorganisms in amounts which may represent a hazard to health.

Table 2 — Microbiological limits

	Type of micro-organism	**Limits**	**Test method**
i)	Yeasts and moulds, max. per g	10^4	EAS 217
ii)	*S.aureus* per 25 g	Not detectable	
iii)	*E. Coli*, max. per g	Not detectable	
iv)	*Salmonella,* max. per 25 g	Not detectable	

7 Packaging

7.1 Dry green grams shall be packed in suitable packages which shall be clean, sound, free from insect, fungal infestation and the packing material shall be of food grade quality.

7.2 Dry green grams shall be packed in containers which will safeguard the hygienic, nutritional, technological and organoleptic qualities of the products.

7.3 The containers, including packaging material, shall be made of substances which are safe and suitable for their intended use. They shall not impart any toxic substance or undesirable odour or flavour to the product.

7.4 Each package shall contain Dry green grams of the same type and of the same grade designation.

7.5 If Dry green grams are presented in bags, the bags shall also be free of pests and contaminants.

7.6 Each package shall be securely closed and sealed.

8 Labelling

In addition to the requirements in EAS 38, each package shall be legibly and indelibly marked with the following:

i) product name as “Dry green grams”;

ii) variety;

iii) grade;

iv) name, address and physical location of the producer/ packer/importer;

v) lot/batch/code number;

vi) net weight, in kg;

Note: EAC partner states are signatory to the International Labour Organizations (ILO) for maximum package weight of 50kg where human loading and offloading is involved

vii) the declaration “Food for Human Consumption’’

viii) storage instruction as “Store in a cool dry place away from any contaminants’’;

ix) crop year;

x) packing date;

xi) instructions on disposal of used package;

xii) country of origin;

xiii) a declaration on whether the green grams were genetically modified or not.

9 Sampling methods

Sampling shall be done in accordance with the EAS 79/ISO 13690.

