

DRAFT UGANDA STANDARD

First Edition
2018

Green coffee beans — Specification



Reference number
DUS 1957 2018

© UNBS2018

Compliance with this standard does not, of itself confer immunity from legal obligations

A Uganda Standard does not purport to include all necessary provisions of a contract. Users are responsible for its correct application

© UNBS 2018

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilised in any form or by any means, electronic or mechanical, including photocopying and microfilm, without prior written permission from UNBS.

Requests for permission to reproduce this document should be addressed to

The Executive Director
Uganda National Bureau of Standards
P.O. Box 6329
Kampala
Uganda
Tel: +256 414 333 250/1/2/3
Fax: +256 414 286 123
E-mail: info@unbs.go.ug
Web: www.unbs.go.ug

Foreword

Uganda National Bureau of Standards (UNBS) is a parastatal under the Ministry of Trade, Industry and Cooperatives established under Cap 327, of the Laws of Uganda, as amended. UNBS is mandated to coordinate the elaboration of standards and is

- (a) a member of International Organisation for Standardisation (ISO) and
- (b) a contact point for the WHO/FAO Codex Alimentarius Commission on Food Standards, and
- (c) the National Enquiry Point on TBT Agreement of the World Trade Organisation (WTO).

The work of preparing Uganda Standards is carried out through Technical Committees. A Technical Committee is established to deliberate on standards in a given field or area and consists of key stakeholders including government, academia, consumer groups, private sector and other interested parties.

Draft Uganda Standards adopted by the Technical Committee are widely circulated to stakeholders and the general public for comments. The committee reviews the comments before recommending the draft standards for approval and declaration as Uganda Standards by the National Standards Council.

The committee responsible for this document is Technical Committee UNBS/TC 2, *food and agriculture*, Subcommittee SC 17, *coffee, tea, cocoa and related products*

PUBLIC REVIEW DRAFT 2018

Green coffee beans — Specification

1 Scope

This Working Draft Uganda standard specifies the requirements and methods of sampling and test for wet and dry processed green coffee beans intended for human consumption. This standard applies to both Arabica(*Coffea Arabia* Linn), Robusta(*Coffea canephora*) coffee beans and Liberia(*Coffea liberica*).

2 Normative references

The following referenced documents referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

CAC/RCP 69, Code of practice for the Prevention and reduction of Ochratoxin A contamination in Coffee

EAS 106, Coffee and its products — Vocabulary

ISO 4150, Green coffee — Size analysis — Manual and machine sieving

ISO 1446, Green coffee — Determination of water content — Basic reference method

ISO 3509, Coffee and coffee products – Vocabulary

ISO 4072, Green coffee in bags -- Sampling

US EAS 38

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply. :

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at <http://www.iso.org/obp>

, In addition the definitions referred to in ISO 3509 and the coffee regulation 1994 of Uganda, the definitions stated below shall apply.

3.1

arabica coffee

coffee of the botanical species *Coffea arabica* L.

Note 1 to entry: Varieties of arabica coffees are for example:

— Bourbon: coffee of the botanical species *Coffea arabica* L., traditional varieties in East Africa and Brazil;

— Typica: coffee of the botanical species *Coffea arabica* L., selected varieties in Indonesia and mainly cultivated varieties in Central and South America [also called Arabica (Brazil), Blue Mountain (Jamaica)];

— Mundo Novo: coffee of the botanical species *Coffea arabica* L., derived from a cross between Bourbon and Typica;

— Mokka: coffee of the botanical species *Coffea arabica* L., not much cultivated;

— Caturra: coffee of the botanical species *Coffea arabica* L., mutant variety (dwarf) from Bourbon;

— Timor Hybrid: coffee of the botanical species *Coffea arabica* L., derived from natural inter-specific hybridization between *C. canephora* and *C. arabica*, found in East Timor;

— Catimor: coffee of the botanical species *Coffea arabica* L., derived from cross between Caturra and Timor Hybrid;

— Catuai: coffee of the botanical species *Coffea arabica* L., resulting from cross between Mundo Novo and Caturra, selected in Brazil;

— Icatu: coffee of the botanical species *Coffea arabica* L., derived from hybridization with *C. canephora* and backcross to *C. arabica*;

— Colombia: coffee of the botanical species *Coffea arabica* L., Catimor type selected in Colombia;

— CR95: coffee of the botanical species *Coffea arabica* L., Catimor type selected in Costa Rica;

— Ruiru II: coffee of the botanical species *Coffea arabica* L., resulting from cross between *C. arabica* and Catimor (CBD resistant coffee).

3.2

robusta coffee

coffee of the botanical species *Coffea canephora* Pierre ex A. Froehner, with some varieties and cultivars of these species

Note 1 to entry: Conillon is coffee of the botanical species *Coffea canephora* Pierre ex A. Froehner, Kouillou or Kouilou variety, cultivated in Brazil and Madagascar.

3.3

Primary Defects

Are defects that affect the cup quality and these include Full blacks, Full sour/ Discoloured/ Tany oily, severe insect damaged, pods, parchment & foreign matter.

3.4

Secondary Defects

Are those defects that don't affect the cup quality which includes partial Black, Partial sour, Floats, withered, immature, slight insect damaged, broken/chips, shells, & husks.

4 Requirements

4.1 General requirements

4.1.1 Green coffee beans shall be

- a) whole;
- b) characteristic of the variety;
- c) dry ;
- d) clean, practically free of any visible foreign matter;

- e) sound, free of defect and deterioration in quality that may make it unfit for brewing
- f) practically free of physical damage;
- g) practically free of abnormal external moisture;
- h) free from producing mould;
- i) practically free of pests and damage caused by them affecting the general appearance
- j) free of any foreign smell and/or taste

4.1.2 The dried green coffee beans shall be harvested at an appropriate degree of maturity, in accordance with the variety, season and the area in which they are grown.

4.2 Specific requirements

Green coffee beans shall comply with the specific requirements stated in table 1 below.

Specific requirements for green coffee beans

s/n	Parameter	Requirement	Method of test
1	Moisture , by mass, max %	12.5	US EAS 105:1999 Annex E
2	Acid insoluble ash, on dry matter basis, % mass, max	1.0	US EAS 105:1999 Annex G

4.3 Tolerances

4.3.1 Green coffee grades of beans shall be free from damage and infestation due to insects, fungi and rodents.

4.3.2 The following grades shall have the following tolerances for infestation and damage

Tolerances for Arabica coffee beans

s/n	Grade	Total defect tolerance
i.	AA ¹	5%
ii.	A ²	7%
iii.	A+ ³	5%
iv.	B ⁴	10%
v.	PB ⁵	10%
vi.	AB ⁶	7%
vii.	CPB ⁷	12 %
viii.	Bugisu UG	Sound bean tolerance up to 10%, Extraneous matter up to 2%, Stones & metals should be absent
ix.	TRIAGE	Sound bean tolerance up to 10%, Extraneous matter up to

		2%, Stones & metals should be absent
x.	MIXED ARABICA	Sound bean tolerance up to 10%, Extraneous matter up to 2%, Stones & metals should be absent
<p>NB: All the above coffee grades^(1,2,3,4,5,6,7) except under grades should comply with the following:</p> <ul style="list-style-type: none"> • Primary defects tolerance limit up to – 1% per defect • Secondary defects tolerance limits up to- 1% per defect. • Should be of a good physical appearance, free from all traces of fermentation, mustiness and other undesirable smells and taints. 		

4.3.2.2 Robusta coffee shall have the following tolerance levels stated in table 3

s/n	Grade	Total defect tolerance (%m/m, max)
i.	Screen 18	7%
ii.	Screen 17	7%
iii.	Screen 15	12%
iv.	Screen 14	10%
v.	Screen 13	12%
vi.	Screen 12	15%
vii.	BHP 1899	Sound bean tolerance up to 15%, extraneous matter up to 2%, Stones & metals should be absent% and dust free
viii.	BHP 1599	
ix.	BHP 1299	
x.	BHP 1199	Sound bean tolerance up to 10%, extraneous matter up to 2%, absence of Stones & metals and dust free
xi.	BHP 10.13	
xii.	Black Beans	Sound bean tolerance up to 3%, extraneous matter up to 2% and should be Stones & metals free.
xiii. xiii	Washed Robusta Ungraded	Maximum Defects 10%
<p>Note: All defect percentages are calculated as per strict count.</p> <p>All the above coffee grades should comply with the following:</p> <ul style="list-style-type: none"> • Primary defects tolerance limit up to 1% per defect (Discoloured limit up to 2%) • Secondary defects tolerance limits up to-3% per defect. • Should be of good physical appearance, free from all traces of fermentation, mustiness and other undesirable smells and taints. 		

5 Grading

5.1 Grading by size and shape green coffee beans shall be manual and mechanically screened and tested according that in table 2.

Table 4: Grading by size of Arabica green coffee beans

S/N	Arabica Requirement	Screen Retention	Test method
i	AA	17- $\geq 90\%$	ISO 4150
ii	A	17- $\geq 60\%$	
iii	A+	16- $\geq 90\%$	
iv	B	15 $\geq 90\%$	
v	PB	15- $\geq 80\%$	
vi	AB	16- $\geq 60\%$	
vii	CPB	15- $\geq 60\%$	
viii	UG	Consists of defects sorted out of the export grades by hand or colour sorters.	

NOTE: under grades (triage, mixed Arabica) shall not be graded according to screen size.

Table 5: Grading by size of Robusta green coffee beans

s/n	Robusta Requirement	Screen Retention	Test Method
i	Screen 18	18 $\geq 92\%$	ISO 4150
ii	Screen 17	17 $\geq 90\%$	
iii	Screen 15	15 $\geq 90\%$	
iv	Screen 14	14 $\geq 85\%$	
v	Screen 13	13 $\geq 85\%$	
vi	Screen 12	12 $\geq 85\%$	
vii	Sustainable coffee	Cleaned and screened above screen 1400 ($>14=90\%$)	

Note: All under grades (BHP 1899, 1599, 1299, 1199, 10.13, Black beans will not be graded by screen size

5.3 Grading by cup quality, Grading by size and shape is only a fair estimate of coffee quality. Experienced coffee liquorers shall assess the actual quality of coffee after roasting and brewing a sample of the coffee already graded by size.

The final score is calculated by first summing up the individual scores given for each of the primary attribute in the table below marked as "total score ". Defects are then subtracted from total scores to arrive at the final score. The following scoring key shall be used to describe the range of coffee quality for the final score. For the scores above 80% equating to specialty Arabica and Fine robusta coffees.

Liquoring shall be done according to established UCDA protocol and in compliance with the fine and specialty cupping protocols. Seven cup qualities are defined as follows:

Total Score	Quality Description		Classification	
	Arabica	Robusta	Arabica	Robusta
90-100	Outstanding	Outstanding	Specialty Rare	Very Fine
80-90	Excellent/Fine	Fine	Specialty Origin	Fine
70-80	Very Good	Very Good	Specialty	Premium
60-70	Below Specialty	Below Average	Commercial	Usual good quality
50-60	Below specialty	Fair	Commercial	Usual Good Quality
40-50	Below Specilty	fair	commercial	commercial
≤40	Poor	Poor	Exchange grade	Exchange grade

5.4 Final quality grades (standards)

Final assessment of the grades shall be based on raw bean quality (colour and size as to the grade specified), roast quality (colour and size as to the grade specified), roast quality (general appearance and centre cuts), and liquor (a combination of acidity and body to give a flavour and aroma).

5 Contamination

5.1 Pesticide

Green coffee shall comply with those maximum pesticide residue limits specified in table 3 Green coffee beans shall comply with those maximum heavy metal limits established by CODEX Alimentarius commission for similar commodities

6.2 Heavy metals

Green coffee beans shall comply with those maximum heavy metal limits established by CODEX Alimentarius commission for similar commodities

7 Hygiene

7.1 Green coffee beans shall be produced, prepared and handled in accordance with the provisions of appropriate sections of CAC/RCP 69

7.2 Green coffee beans shall conform to the microbial limit for yeasts and moulds shall not exceed 10^3 cfu/g when tested in accordance to US ISO 661

8 Packaging

Green coffee beans shall be packed in food grade containers which will safeguard the hygienic, nutritional, and organoleptic qualities of the product

9 Labelling

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

- a) Identification Name and address of Exporter, Packer and/or Dispatcher.
- b) Identification code (optional).
- c) Nature of Produce Name of produce, variety and/or commercial type.
- d) Origin of Produce Country of origin and, optionally, district where grown or national, regional or local place name.
- e) Commercial Identification –grade; – Size
- f) Net weight

10 Sampling

Methods of sampling of green coffee beans shall be accordance with ISO

Annex A (informative)

Descriptions of coffee classes

A.1 Grades used in Robusta include

A.1.1 SCREEN 1800

To consist of dry processed Robusta coffee beans of good appearance for the grade, free from all traces of fermentation mustiness and other undesirable smells and taints of which ninety two per cent by weight shall be retained by screen 18 with tolerance of up to eight per cent by weight passing through screen 18 but be retained by screen 15 with tolerance of up to one per cent of coffee by weight passing through screen 15 but retained by screen 12.

A.1.2 STANDARD 1500

Dry processed Robusta coffee beans of good appearance for the grade, free from all traces of fermentation, mustiness and other undesirable smells and taints of which not less than ninety per cent by weight shall be retained by screen 15, seven per cent per screen 18 and not more than three per cent by weight passing through screen 15 but be retained by screen 12. In addition, the coffee shall contain not more than twelve per cent by weight of defective beans and not more than one-tenth of one per cent by weight of extraneous matter, shall have maximum moisture content of 12.5%

A.1.3 SCREEN 1200

To consist of dry processed Robusta coffee beans, of which not less than eight–five per cent by weight shall be retained by screen 12, 13% retained by screen 15 and 2% passing through screen 12 but retained by screen 10 the coffee shall contain not more twenty per cent by weight of defective beans and not more than one-tenth of one per cent by weight of extraneous matter, shall have maximum moisture content of 12.5%.

A.1.4 BHP 1199

To consist of unwashed Robusta coffee beans mainly broken pieces, small whole beans passing through screen 12 and light beans rejected from standard grade and shall have a maximum moisture content of 12.5%.

A.1.5 BHP 18.99

To consist of unwashed Robusta coffee beans mainly light and broken separated from screen 18 by weight and approved by the Authority from time to time.

A.1.6 BHP 10.13

To consist of unwashed Robusta coffee beans mainly light, broken beans and chips equal to sample as approved by the Authority from time to time.

A.1.7 BLACK BEANS

To consist of black and discoloured coffee beans separated from clean coffee electronically or by hand as approved by the Authority from time to time.

A.2 Description of the Arabica grades includes

A.2.1 TYPE AA

To consist of washed Arabica coffee beans produced in the District of Bugishu or Sebei heavy, solid and of good appearance for the grade free from all traces of fermentation, mustiness sand other undesirable smells and taints of which ninety per cent by weight shall be retained by screen 17, and up to ten per cent by weight shall pass through screen 17 but be retained by screen16, with tolerance of up to two per cent by weight passing through screen 16 but retained by screen12. In addition, the coffee shall be free from extraneous matter and shall have a maximum moisture content of 12.0%.

A.2.2 TYPE A

To consist of washed Arabica coffee beans produced in the District of Bugishu or Sebei heavy, solid and of good appearance for the grade free from all traces of fermentation, mustiness sand other undesirable smells and taints of which ninety per cent by weight shall be retained by screen 16, and up to ten per cent by weight shall pass through screen 16 but be retained by screen15, with tolerance of up to two per cent by weight passing through screen 15 but retained by screen12. In addition, the coffee shall contain not more than one-tenth of one per cent by weight of extraneous matter and shall have a maximum moisture content of 12.0%.

A.2.3 TYPE PB

To consist of washed pea-berry Arabica coffee beans, produced in the District of Bugishu or Sebei, fully formed, sound, heavy, solid and of good appearance for the grade, free from all traces of fermentation, mustiness and other undesirable smells and taints of which eighty five per cent by weight shall be retained by screen15, and up to fifteen per cent by weight shall pass through screen 15 but be retained by screen 14,with tolerance of up to five per cent by weight passing through screen 14 but retained by screen12. In addition, the coffee shall contain not more than one-tenth of one per cent by weight of extraneous matter and shall have a maximum moisture content of 12.0%.

A.2.4 TYPE B

To consist of washed Arabica coffee beans produced in the District of of Bugishu or Sebei heavy, solid and of good appearance for the grade free from all traces of fermentation, mustiness sand other undesirable smells and taints of which ninety per cent by weight shall be retained by screen 15, and up to ten per cent by weight shall pass through screen 15 but be retained by screen 14, with tolerance of up to two per cent by weight passing through screen 14 but retained by screen 12. In addition, the coffee shall contain not more than one-tenth of one per cent by weight of extraneous matter and shall have a maximum moisture content of 12.0%.

A.2.5 TYPE C

To consist of washed Arabica coffee beans, produced in the district of Bugishu or Sebei, of good appearance for the grade, free from all traces of fermentation, mustiness and other undesirable smells and taints of which eighty per cent by weight shall be retained by screen 14, and up to twenty percent by weight shall pass through screen 14 but be retained by screen 13 with tolerance of up to five per cent by weight passing through screen 13 but retained by screen 12. In addition, such coffee shall contain not more than one-tenth of one per cent by weight of extraneous matter and shall have amaximum moisture content of 12.0%.

A.2.6 TYPE E

To consist of washed Arabica coffee beans produced in the District of Bugishu or Sebei, bold and of good appearance for the grade, in size larger and in weight heavier than type AA, the formation of which during growth has bean composed of two beans fitting into each other, free from all traces fermentation, mustiness and other smell and traits of which eighty five per cent by weight shall be retained by screen 18, and up to fifteen per cent by weight shall pass through screen 18 but be retained by screen 16, with tolerance of up to five per cent by weight passing through screen 16 but retained by screen 14. In addition, the coffee shall contain not more than one-tenth of one per cent by weight of extraneous matter and shall have a maximum moisture content of 12.0%.

A.2.7 TYPE UG

To consist of washed Arabica coffee beans produced in the District of Bugishu or Sebei equal to sample as approved from time to time by authority.

PUBLIC REVIEW DRAFT 2018

Annex B
informative
Coffee bean defects

DEFECTIVES	POINTS
Blacks	1=1
Unhulled Coffee	1=1
Extraneous Matter	1=1
Partly Blacks	1=1
Insect Damage	1=1
Pin Holes	1=1
Chalky white	1=1
Discoloured	1=1
Withered/shriveled Pods/immature	1=1
Malformed	1=1
Badly Broken	1=1

Bibliography

- [1] ASEAN Stan 31: 2013, Standard for coffee bean
- [2] US EAS 130 , Green coffee beans specification
- [3] Robusta coffee grading handbook
- [4] Arabica cupping protocols, 2008
- [5] Robusta cupping protocols, 2010

PUBLIC REVIEW DRAFT 2018

Certification marking

Products that conform to Uganda standards may be marked with Uganda National Bureau of Standards (UNBS) Certification Mark shown in the figure below.

The use of the UNBS Certification Mark is governed by the Standards Act, and the Regulations made thereunder. This mark can be used only by those licensed under the certification mark scheme operated by the Uganda National Bureau of Standards and in conjunction with the relevant Uganda Standard. The presence of this mark on a product or in relation to a product is an assurance that the goods comply with the requirements of that standard under a system of supervision, control and testing in accordance with the certification mark scheme of the Uganda National Bureau of Standards. UNBS marked products are continually checked by UNBS for conformity to that standard.

Further particulars of the terms and conditions of licensing may be obtained from the Director, Uganda National Bureau of Standards.



PUBLIC REVIEW DRAFT 2018

ICS nn.nnn.nn

Price based on nn pages