Rough (paddy) rice — Specification
National foreword

Uganda National Bureau of Standards (UNBS) is a parastatal under the Ministry of Tourism, Trade and Industry established under Cap 327, of the Laws of Uganda. UNBS is mandated to co-ordinate 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/SPS Agreements 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 representatives of consumers, traders, academicians, manufacturers, government and other stakeholders.

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.

This Final Draft Uganda Standard, FDUS EAS 764: 2013, Rough (paddy) rice — Specification, is identical with and has been reproduced from an East African Standard, EAS 764: 2013, Rough (paddy) rice — Specification, and is being proposed for adoption as a Uganda Standard.

This second edition cancels and replaces the first edition (US EAS 764:2011) which has been technically revised.

Wherever the words, “East African Standard” appear, they should be replaced by "Uganda Standard."
FINAL DRAFT EAST AFRICAN STANDARD

Rough (paddy) rice — Specification
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Foreword

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

In order to achieve this objective, the Community established an East African Standards Committee mandated to develop and issue East African Standards.

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.

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.

FDEAS 764:2013 was prepared by Technical Committee EAS/TC 014, Cereals, Pulses and related products
Introduction

This standard has been developed to take into account:

a) the needs of the market for the product;

b) 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;

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

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

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

f) 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;

g) 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

h) the need to ensure a reliable production base of consistent and safe crops that meet customer requirements.
Rough (paddy) rice — Specification

1 Scope

This Final Draft East African Standard specifies the requirements and methods of sampling and test for rough rice of the varieties grown from Oryza spp. used for further processing.

2 Normative references

The following referenced documents are indispensable for the application 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.

EAS 38, Labelling of pre-packaged foods — Specification
EAS 39, Hygiene in the food and drink manufacturing industry — Code of practice
EAS 79, Cereals and pulses as grain — Methods of sampling
EAS 217, Methods for the microbiological examination of foods
ISO 605, Pulses — Determination of impurities, size, foreign odours, insects, and species and variety — Test methods
ISO 711, Cereals and cereal products — Determination of moisture content (Basic reference method)
ISO 712, Cereals and cereal products — Determination of moisture content — Routine reference method
ISO 16050, Foodstuffs — Determination of aflatoxin B₁, and the total content of aflatoxin B₁, B₂, G₁ and G₂ in cereals, nuts and derived products — High performance liquid chromatographic method
CODEX Stan 193, Codex general Standards for contaminants and toxins in food and feed

3 Terms and definitions

For the purpose of this standard, the following terms and definitions shall apply.

3.1 rough rice
whole or broken kernels of paddy rice (Oryza glaberrima, Digitaria exilis, Oryza sativa, Oryza longistaminata)

3.2 cereals
includes wheat, barley, oats, cereal rye, triticale, sorghum, maize and rice

3.3 foreign matter/extraneous matter
organic and inorganic material other than pearl millet, broken kernels, other grains and filth
3.4 **insect/pest damaged**
grains eaten in part by stored grain insects and any field pests of grains including *Heliothis spp*. Grains may have a hole (commonly referred to as bored) or have a chewed appearance on any part of the grain.

3.5 **milling yield**
an estimate of the quantity of whole kernels and total milled rice (whole and broken kernels combined) that are produced in the milling of rough rice to a well-milled degree

3.6 **over-dried damaged**
defective grains caused by overheating during artificial drying. It can be detected where grain is hot, exhibits an unusual odour, exhibits significant sprouting (greater than 10 %) or other evidence of weather damage.

3.7 **paddy kernels**
whole or broken unhulled kernels of rice; whole or broken kernels of brown rice, and whole or broken kernels of milled rice having a portion or portions of the hull remaining which cover 12.5 % or more of the whole or broken kernel

3.8 **parboiled**
rough rice in which the starch has been gelatinized by soaking, steaming, and drying

3.9 **poisonous, toxic and/or harmful seeds**
seed which if present in quantities above permissible limit may have damaging or dangerous effect on health, organoleptic properties or technological performance such as Jimson weed — datura (*D. fastuosa* Linn and *D. stramonium* Linn.) corn cokle (*Agrostemma githago* L., *Machai Lallium remulenum* Linn.) Akra (Vicia species), *Argemone mexicana*, Khesari and other seeds that are commonly recognized as harmful to health

3.10 **smutty**
rough rice which contains more than 3.0 % of smutty kernels

3.11 **variety**
class of rough rice

3.12 **food grade material**
packaging material, made of substances which are safe and suitable for their intended use and which will not impart any toxic substance or undesirable odour or flavour to the product

4 **Quality requirements**

4.1 **General requirements**

4.1.1 Rough rice shall be:

   a) the dried mature grains of edible *Oryza spp*;

   b) clean, wholesome, uniform in size, colour and shape;

   c) safe and suitable for human consumption;
d) free from abnormal flavours, musty, sour or other undesirable odour, obnoxious smell and discolouration; and

e) 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.

4.1.2 Rough rice shall be in form of well-filled seeds of uniform colour representative of the declared variety. The four classes in 4.1.2.1 – 4.1.2.4 shall be based on the percentage of whole kernels, and types of rice:

4.1.2.1 Long Grain Rough Rice shall consist of rough rice which contains more than 25.0 % of whole kernels of rough rice and in Grades 1 through 4 not more than 10.0 % of whole or broken kernels of medium or short grain rice.

4.1.2.2 Medium Grain Rough Rice shall consist of rough rice which contains more than 25.0 % of whole kernels of rough rice and in Grades 1 through 4 not more than 10.0 % of whole or broken kernels of long grain rice or whole kernels of short grain rice.

4.1.2.3 Short Grain Rough Rice shall consist of rough rice which contains more than 25.0 % of whole kernels of rough rice and in Grades 1 through 4 not more than 10.0 % of whole or broken kernels of long grain rice or whole kernels of medium grain rice.

4.1.2.4 Mixed Rough Rice shall consist of rough rice which contains more than 25.0 % of whole kernels of rough rice and more than 10.0 % of "other types".

4.1.3 Grades 1 to 3 of parboiled rice shall contain not more than 10.0 % of ungelatinized kernels. Grades 1 and 2 shall contain not more than 0.1 % and Grade 3 not more than 0.2 % of nonparboiled rice. If the rice is:

a) not distinctly coloured by the parboiling process, it shall be considered "Parboiled Light";

b) distinctly but not materially coloured by the parboiling process, it shall be considered "Parboiled"; and

c) materially coloured by the parboiling process, it shall be considered "Parboiled Dark."

The colour levels for "Parboiled Light," "Parboiled," and "Parboiled Dark" rice shall be in accordance with the interpretive line samples for parboiled rice.

4.2 Specific requirements

Rough rice for human consumption shall be categorized into three grades on the basis of the tolerable limits established in Table 1.
### Table 1 — Specific requirements

<table>
<thead>
<tr>
<th>S/N</th>
<th>Characteristics</th>
<th>Maximum limits</th>
<th>Method of test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Grade 1</td>
<td>Grade 2</td>
</tr>
<tr>
<td>i)</td>
<td>Foreign matter, % m/m</td>
<td>Organic</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inorganic</td>
<td>0.25</td>
</tr>
<tr>
<td>ii)</td>
<td>Pest damaged grains, % m/m</td>
<td>0.5</td>
<td>0.75</td>
</tr>
<tr>
<td>iii)</td>
<td>Discoloured grains, % m/m</td>
<td>0.1</td>
<td>0.5</td>
</tr>
<tr>
<td>iv)</td>
<td>Moisture, % m/m</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>v)</td>
<td>Immature/shrivelled grains, % m/m</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>vi)</td>
<td>Total aflatoxin (AFB₁+AFB₂+AFG₁ +AFG₂), ppb</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>vii)</td>
<td>Aflatoxin B₁, ppb</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>viii)</td>
<td>Fumonisin ppm</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

**NOTE 1** The parameter, Total defective grains is not the sum total of the individual defects. It is limited to 70% of the sum total of individual defects.

**NOTE 2** Broken percentage in brown and milled rice is used to evaluate the paddy grades.

## 5 Contaminants

### 5.1 Pesticide residues

Faba beans 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, it should be notified to all Partner States accordingly.

### 5.2 Other contaminants

Faba beans shall comply with those maximum limits for other contaminants established in CODEX STAN 193.

## 6 Hygiene

### 6.1 Rough rice

Rough rice 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:

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

- b) be free from parasites which may represent a hazard to health; and
c) not contain any substance originating from microorganisms in amounts which may represent a hazard to health.

### Table 2 — Microbiological limits

<table>
<thead>
<tr>
<th>S/N</th>
<th>Type of micro-organism</th>
<th>Limits</th>
<th>Method of test</th>
</tr>
</thead>
<tbody>
<tr>
<td>i)</td>
<td>Yeasts and moulds, cfu per g, max.</td>
<td>$10^4$</td>
<td></td>
</tr>
<tr>
<td>ii)</td>
<td><em>Staphylococcus aureus</em>, cfu per g, max.</td>
<td>$10^3$</td>
<td>EAS 217</td>
</tr>
<tr>
<td>iii)</td>
<td><em>Escherichia coli</em>, per g</td>
<td>Absent</td>
<td></td>
</tr>
<tr>
<td>iv)</td>
<td><em>Salmonella per 25 g</em></td>
<td>Absent</td>
<td></td>
</tr>
</tbody>
</table>

7 Packaging

7.1 Rough rice shall be packed in suitable packages which shall be clean, sound, free from insect, fungal infestation and the packaging material shall be of food grade quality.

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

7.3 Each package shall contain rice of the same type and of the same grade designation.

7.4 If rough rice is presented in bags, the bags shall also be free of pests and contaminants.

7.5 Each package shall be securely closed and sealed.

8 Labelling

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

a) product name as “Rough/Paddy Rice”;

b) variety;
   i) long grain rough rice
   ii) medium grain rough rice
   iii) short grain rough rice
   iv) mixed rough rice

c) grade;

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

e) lot/batch/code number;

f) net weight, in kilograms;

NOTE EAC partner states are signatory to the International Labour Organizations (ILO) for maximum package weight of 50 kg where human loading and offloading is involved
g) the declaration “Food for Human Consumption”

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

i) crop year;

j) packing date;

k) instructions on disposal of used package;

l) country of origin; and

m) a declaration on whether the rough rice was genetically modified or not.

9 Sampling methods

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