Final Draft
Jamaican Standard Specification

for

Grading and quality requirements of table eggs

BUREAU OF STANDARDS JAMAICA
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- Where feasible, programmes will be developed to meet special requirements of the submitter. Where applicable, certification may form the basis for acceptance by inspection authorities responsible for enforcement of regulations.

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Final Draft
Jamaican Standard Specification
for
Grading and quality requirements of table eggs

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First published 20XX

Jamaican Standards establish requirements in relation to commodities, processes and practices, but do not purport to include all the necessary provisions of a contract.

The attention of those using this standard specification is called to the necessity of complying with any relevant legislation.

Amendments

<table>
<thead>
<tr>
<th>No.</th>
<th>Date of Issue</th>
<th>Remarks</th>
<th>Entered by and date</th>
</tr>
</thead>
</table>
## Contents

<table>
<thead>
<tr>
<th></th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>National foreword</td>
<td>iv</td>
</tr>
<tr>
<td>Committee representation</td>
<td>iv</td>
</tr>
<tr>
<td>Acknowledgement</td>
<td>iv</td>
</tr>
<tr>
<td>Foreword</td>
<td>1</td>
</tr>
<tr>
<td><strong>1 Scope</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>2 Terms and definitions</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>3 Requirements</strong></td>
<td>4</td>
</tr>
<tr>
<td>3.1 Grading</td>
<td>4</td>
</tr>
<tr>
<td>3.2 Weight designation</td>
<td>6</td>
</tr>
<tr>
<td>3.3 Packaging</td>
<td>6</td>
</tr>
<tr>
<td>3.4 Labelling</td>
<td>7</td>
</tr>
<tr>
<td>3.5 Hygiene</td>
<td>8</td>
</tr>
<tr>
<td>Annex A (informative) Inedible eggs</td>
<td>9</td>
</tr>
<tr>
<td>Annex B (normative) Egg quality parameters</td>
<td>10</td>
</tr>
<tr>
<td>Annex C (normative) Shell egg protecting operations</td>
<td>15</td>
</tr>
<tr>
<td>Annex D (normative) Sampling plan for table eggs</td>
<td>16</td>
</tr>
<tr>
<td>Annex E (informative) Measuring albumen height</td>
<td>17</td>
</tr>
</tbody>
</table>

**NOTE**
Informative Annex – gives additional information intended to assist in the understanding or use of the document. They do not contain requirements.

Normative Annex – gives provisions additional to those in the body of a document. They contain requirements.
National foreword

This standard is an adoption and is identical to CCS 52: 2005 CARICOM Regional Standard Specification for Grading and quality requirements of table eggs. It was developed by the CARICOM Regional Organization for Standards and Quality (CROSQ). Regional territories are mandated to adopt approved CARICOM Standards.

This standard establishes grading criteria, weight classification, labelling, sampling protocols and methods of test for table eggs.

This standard supersedes and replaces JS 246: 1992 Jamaican Standard Specification for Table eggs: quality requirements.

It is intended to be compulsory.

Committee representation

The preparation of this standard was carried out under the supervision of the Regional Technical Committee (RTC #3) for Foods (hosted by CARICOM Member State, Barbados). Representatives of several national associations and Standards Bureaux were involved in the discussions leading to the elaboration of the standard.

Acknowledgment

Acknowledgement is made to the CARICOM Regional Organization for Standards and Quality (CROSQ) for permission to adopt CCS 52: 2005.
Foreword

This standard was developed as an initiative of the Caribbean Poultry Association (CPA) in response to the need to harmonise standards governing egg production and marketing within CARICOM.

In the development of the standard, assistance was obtained from representatives of regulatory agencies of the USA and Canada as well as through reference to the following documents:

a) USDA Egg-Grading Manual;

b) Regulations Governing the Voluntary Grading of Shell Eggs (7 CFR PART 56);

c) United States Standards, Grades, and Weight Classes for Shell Eggs (AMS 56);

d) Canadian Egg Regulations;

e) Trinidad and Tobago Standards for the Production and Safe Handling of Table Eggs;

f) Jamaican Standard Specification for Grading and Labelling of Table Eggs; JS 177:1989;

1 Scope

This standard establishes specifications for:

a) grading criteria and grades;
b) weight classification;
c) labelling requirements; and
d) sampling protocols and methods of test.

This standard is applicable to table eggs which are prepackaged, distributed and offered for sale in the retail trade in CARICOM.

This standard also establishes labelling requirements for processed egg products, which are prepackaged, distributed and offered for sale in CARICOM.

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.

CODEX Alimentarius Commission Recommended International Code of Practice – General Principles of Food Hygiene

CODEX Alimentarius Commission General Standard for the Labeling of Prepackaged Foods

CARICOM Regional Code of Practice for Food Hygiene

CARICOM Regional Standard for the Labelling of Prepackaged Foods

3 Terms and definitions

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

3.1 grading
classification of individual eggs on the basis of quality assessment according to established standards

3.2 grade mark
mark or letter used in describing the grade of eggs

3.3 prepackaged
packaged in advance of sale in the final pack in which the table eggs are intended for retail sale

3.4 table eggs
unfertilised eggs laid by the domestic chicken, Gallus domesticus, which are intended to be used as food

3.5 air cell
air space between shell membranes
3.6 albumen
white of the egg

3.7 candling
process of examining the interior condition of an egg by rotating or causing the egg to rotate in front of or over a light source that illuminates the contents of the egg

3.8 egg case
shipping container for egg cartons or egg flats normally holding 30 dozens shell eggs

3.9 egg carton
container that is capable of being closed and that is made to contain not more than 30 eggs in separate compartments

3.10 egg flat
open commercial container normally holding two and a half dozen eggs

3.11 Haugh unit
relationship between the albumen height and the weight of the egg, after correcting for difference in egg size

3.12 inedible egg
egg which is deemed unfit for human consumption
NOTE Conditions which lead to this designation are described in Annex A.

3.13 leaker
individual egg which has a crack or break in the shell and shell membranes, with the result that the egg contents are exuding or are free to exude through the shell

3.14 loss
egg which is inedible, cooked, frozen, contaminated, or one which contains bloody whites, large blood spots, large unsightly meat spots or other foreign material

3.15 quality
inherent properties of any product, which determines its relative degree of excellence

3.16 shell
hard outer calcareous envelope of the egg

3.17 yolk
yellow, oval internal part of the egg surrounded by the albumen white
4 Requirements

4.1 Grading

4.1.1 An egg may be graded A if, in addition to meeting relevant national regulatory requirements for the production of table eggs:

a) the egg shows, on candling:
   1. a reasonably firm albumen;
   2. an indistinct yolk outline;
   3. a round yolk that is reasonably well-centred; and
   4. an air cell that is not in excess of 5 mm in depth; and

b) the shell:
   1. has not more than three stain spots, the aggregate area of which does not exceed an area equivalent to 25 mm², and the shell is otherwise free of dirt and stains;
   2. is normal or nearly normal in shape but may have rough areas and ridges other than heavy ridges; and
   3. is not cracked.

4.1.2 Eggs in a lot, sampled according to Annex D, shall be graded as A if the sample meets the requirements set out in section 3.1.1 and in addition, the following specifications:

a) the quality factor of albumen firmness of the eggs in the sample averages 67 Haugh units or higher;

b) the sample does not contain more than:
   1. 10 % of eggs with cracked shells;
   2. 5 % of eggs with dirt on the shells where the dirt on the shell is more than 160 mm² in size but covers less than 33 % of the area of the shell;
   3. 2.5 % of eggs with dirt on the shells where the dirt covers 33 % or more of the area of the shell;
   4. 5 % of eggs with stains on the shells where the stains cover more than 50 % of the area of the shell,
   5. 10 % of eggs with rough, ridged or misshaped shells,
   6. 5 % of eggs with an air cell in excess of 5 mm in depth, and
   7. 2.5 % of eggs that are leakers; and

   c) the sample does not contain more than a total of 15 % of eggs described in 3.1.2 b).

4.1.3 In addition to meeting relevant national regulatory requirements for the production of table eggs, an egg may be graded as B if it:

a) does not meet the requirements for the grade A eggs; and
b) is not cracked;
c) shows on candling:
   1. a distinct yolk outline;
   2. a yolk that is moderately oblong in shape and that freely floats within the egg when whirled;
   3. a very slight degree of germ development;
   4. an air cell not in excess of 9 mm in depth;

d) shows spots of dirt on the shell, if the aggregate area of the dirt does not exceed 40 mm²;
e) shows stain spots on the shell, if the aggregate area of the stain does not exceed 320 mm²; or
f) has a shell that is slightly abnormal in shape and has rough areas and definite ridges.

**4.1.4** In addition to meeting relevant national regulatory requirements for the production of table eggs, an egg may be graded as C if it:
a) is free from dirt;
b) shows on candling:
   1. a prominent yolk outline;
   2. a yolk that is definitely oblong in shape but does not adhere to the shell membrane;
   3. meat spots or blood spots not in excess of 3 mm in diameter;
c) shows stain spots on the shell, the aggregate area of which does not exceed 33% of the shell surface;
d) has a shell that is cracked, if the internal contents are not leaking; and

e) is conveyed to a registered processed egg station.

**4.1.5** Subject to 3.1.6, eggs may be graded Nest Run if the eggs:
a) meet the national regulatory requirements for the production of table eggs; and
b) are conveyed to a registered egg station, at a separate location from the place of production, or a registered processed egg station.

**4.1.6** In addition to 3.1.5, eggs in a lot shall be graded as Nest Run if the lot meets the following specifications:
a) the lot does not contain more than:
   1. 10% of eggs with cracked shells,
   2. 5% of eggs with dirt on the shells where the dirt is more than 160 mm² in size, and
   3. 3% of eggs that are leakers or rejects; and
b) the lot does not contain more than a combined total of 15% of eggs described in 3.1.6 a);
c) a minimum of 85 % of the lot are A quality eggs; and

d) no individual case contains less than 75 % A quality eggs.

4.1.7 Egg quality parameters are subjected to grading as specified in Annex B.

4.2 Weight designation

4.2.1 Weight classification

Table 1 specifies the weight classification to be used.

<table>
<thead>
<tr>
<th>Classification</th>
<th>Label representation</th>
<th>Minimum net weight per dozen eggs g (oz)</th>
<th>Minimum net weight per half dozen eggs g (oz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jumbo</td>
<td>J</td>
<td>850 (30)</td>
<td>425 (15)</td>
</tr>
<tr>
<td>Extra large</td>
<td>XL</td>
<td>766 (27)</td>
<td>383 (13.5)</td>
</tr>
<tr>
<td>Large</td>
<td>L</td>
<td>680 (24)</td>
<td>340 (12)</td>
</tr>
<tr>
<td>Medium</td>
<td>M</td>
<td>596 (21)</td>
<td>298 (10.5)</td>
</tr>
<tr>
<td>Small</td>
<td>S</td>
<td>510 (18)</td>
<td>255 (9)</td>
</tr>
<tr>
<td>Extra small</td>
<td>XS</td>
<td>426 (15)</td>
<td>213 (7.5)</td>
</tr>
</tbody>
</table>

NOTE A lot-average tolerance of 3.3 % for individual eggs in the next lower weight class is permitted as long as no individual case within the lot exceeds 5 %.

4.3 Packaging

4.3.1 Table eggs may be packaged in various formats up to a maximum of 30 per container.

4.3.2 Table eggs shall be packed with their small ends facing downwards, either in egg cartons, moulded trays or other appropriate containers approved by the competent authority.

4.3.3 Packing material shall be shock resistant, dry, clean and in good condition. It shall be made of materials which protect the eggs from extraneous odours and undue risk of quality deterioration.

4.3.4 Large packs used for transporting and dispatching eggs, including inner packing materials, shall not be re-used unless they are as new and meet the requirements of 3.3.3.

4.3.5 Re-used large packs shall not bear any visible markings from their previous use, which may confuse or mislead consumers.

4.3.6 Small packs shall not be re-used.
4.4 Labelling

4.4.1 General

4.4.1.1 Each package of table eggs shall meet the requirements of the most recent versions of the CODEX standard for Labelling of Prepackaged Foods and the CARICOM Regional Standard for the Labelling of Prepackaged Foods.

4.4.1.2 In addition, each package of table eggs shall bear the following label declarations:

a) the brand or trade name;
b) the name of the product - Table Eggs, preceded where appropriate, by one of the descriptive terms listed in Annex B.5;
c) an accurate statement of minimum net weight, in metric units;
d) number of eggs;
e) the name and business address of the packer or distributor;
f) the “Best before” date;
g) the required storage instructions; and
h) the following statement in bold type of not less than 3 mm in height: “It is recommended that all table eggs should be kept properly refrigerated until used”.

4.4.1.3 The following additional information is required for all prepackaged eggs:

a) at least one exposed surface of every pack for retail sale shall bear one of the weight classifications listed in Table 1;
b) where two letters are used to designate the weight classification, there shall be no letter space between them; and

c) each package shall bear an appropriate grade designation.

4.4.2 Labelling of containers of shell eggs for importation

Containers of product offered for importation shall bear a label, printed in the official language of the country of importation, showing:

a) the name of the product, Table Eggs, preceded where appropriate by one of the descriptive terms listed in Annex B.5;
b) the name of the country of origin of the product, preceded by the words “Product of”. This statement shall appear immediately under the name of the product;
c) the grade and weight designation;
d) the date of packing;
e) the “Best before” date;
f) the expression “Keep refrigerated” or words of similar meaning;
g) the name of the packer and the place at which the packing is done, in the country of origin and
the local distributor, qualified by a statement which reveals the connection which the persons
have with the product; and

h) an accurate statement of the quantity.

4.4.3 Nutrition labeling for table eggs

Where either nutrition or health claims are made with respect to table eggs, the retail package shall
provide a complete nutrition labelling declaration. Only claims which satisfy the CODEX Alimentarius
Guidelines on Claims shall be permitted.

4.4.4 Labelling of processed eggs and egg products

4.4.4.1 Consumer packages of processed egg products shall comply with the requirements of the
recent versions of the CODEX standard for Labelling of Prepackaged Foods and the CARICOM
Regional Standard for the Labelling of Prepackaged Foods.

4.4.4.2 Where either nutrition or health claims are made with respect to these products, the package
containing the product shall provide a complete nutrition labelling declaration. Only claims which
satisfy the CODEX Alimentarius Guidelines on Claims shall be permitted.

4.4.5 Grade marking

4.4.5.1 The Grade A distinguishing mark shall be a circle of at least 12 mm in diameter, with the letter
“A” in the center in Times New Roman font and having a minimum height of 10 mm.

4.4.5.2 The Grade B distinguishing mark shall be a circle of at least 12 mm in diameter, with the letter
“B” in the center in Times New Roman font and having a minimum height of 10 mm.

4.4.5.3 No grade designations other than those specified in this standard shall be used.

4.4.6 Producer registration number

Each package shall bear a producer registration number, issued by the competent authority,
consisting of 3 digits with a height of at least 5 mm.

4.5 Hygiene

Table eggs should be handled in accordance with the requirements of the latest versions of the
CODEX General Principles of Food Hygiene, the CARICOM Regional Code of Practice for Food
Hygiene, the Caribbean Poultry Association ‘On-Farm Food Safety Program’, and other relevant
codes of practice specified by the competent authority.
Annex A  
(informative)

Inedible eggs

A.1  Eggs are deemed to be inedible if any of the following conditions exist:

a)  black rots;
b)  yellow rots;
c)  white rots;
d)  mixed rots or addled eggs;
e)  sour eggs;
f)  eggs with green whites;
g)  eggs with stuck yolks;
h)  mouldy eggs;
i)  eggs showing blood rings;
j)  eggs containing embryo chicks at or beyond the blood ring stage; or
k)  adulterated eggs.
Annex B
(normative)

Egg quality parameters

B.1 Air cell

B.1.1 *Depth of air cell* is the distance from the top of the air cell to its bottom when the egg is held with the air cell upward.

B.1.2 *Free air cell* is an air cell which moves freely towards the uppermost point in the egg as the egg is rotated slowly.

B.1.3 *Bubbly air cell* is the condition which develops when the air cell becomes ruptured, resulting in one or more small separate air bubbles usually floating beneath the main air cell.

B.2 Albumen

B.2.1 *Clear* means free from discolourations or from any foreign bodies floating in the albumen.

B.2.2 *Reasonably firm to firm (A Quality)* refers to situations where the albumen ranges in thickness from being sufficiently thick or viscous, which prevents the yolk from being more than slightly defined or distinctly indicated when the egg is twirled, to a degree of thickness which allows the yolk to approach the shell more closely, resulting in a fairly well-defined yolk outline.

B.2.3 *Weak and watery (B & C Quality)* refers to a condition where the albumen is weak, thin and generally lacking in viscosity. It allows the yolk to approach the shell closely, thus causing the yolk outline to appear plainly visible and dark.

B.2.4 *Bloody white* is a condition where the egg has blood diffused throughout the white. These are classified as “loss”. Eggs with blood spots which show a slight diffusion into the white around the localized spot are not to be classified as bloody whites.

B.2.5 *Blood spots or meat spots*. Small blood spots or meat spots aggregating not more than 3 mm in diameter may be classified as B or C quality. If larger or showing diffusion of blood into the white surrounding a blood spot, the egg may be classified as “loss”. Blood spots shall not be due to germ development. They may be on the yolk or in the white. Meat spots may be blood spots which have lost their characteristic red colour or tissue from the reproductive organs.

B.3 Yolk

B.3.1 *Outline slightly to fairly well defined* (A Quality) is a yolk outline that ranges from being indistinctly indicated, appearing to blend into the surrounding white, to being discernible but not clearly defined, as the egg is twirled.

B.3.2 *Outline plainly visible* (B & C Quality). This refers to a yolk outline which is clearly visible as a dark shadow when the egg is twirled.

B.3.3 *Enlarged and flattened* is a condition of the yolk in which its membranes and tissues have weakened and or moisture has been absorbed from the white to such an extent that the yolk appears definitely enlarged and flat.
Practically free from defects (A Quality) refers to a yolk which shows no germ development but which may show other very slight defects on its surface.

Serious defects (B & C Quality) refers to a yolk which shows well-developed spots or areas and other serious defects, such as olive yolks, which do not render the egg inedible.

Clearly visible germ development (B & C Quality) refers to the development of the germ spot on the yolk of a fertile egg which has progressed to a point where it is plainly visible as a definite circular area or spot with no blood in evidence.

Blood due to germ development is blood which has been caused by development of the germ in a fertile egg to the point where it is visible as definite lines or as a blood ring. Such an egg is classified as inedible.

B.4. Shells

Clean means free from foreign materials and from stains or discolourations that are readily visible. An egg may be considered clean if it has only very small specks or stains, if such specks or stains are not in sufficient numbers or intensity to detract from the generally clean appearance of the egg.

Moderately-stained means a shell which is free from adhering dirt but which has stains of moderate degree covering not more than ¼ of the shell surface.

Practically normal (A Quality) refers to a shell which approximates the usual shape and is sound and free from thin spots. Ridges and rough areas, that do not materially affect the shape and strength of the shell, are permitted.

Abnormal (B Quality) refers to a shell which may be somewhat unusual or decidedly mis-shaped or faulty in soundness or strength. It may show pronounced ridges and thin spots.

Dirty (C Quality) refers to an egg which has an unbroken shell, with adhering dirt or foreign material, prominent stains or moderate stains covering more than 3 % of the shell, if localized, or 6 % of the shell if scattered.

Check (C Quality) refers to an egg which has a broken shell or a crack in the shell but with its shell membranes and contents intact. An egg classified as “check” is lower in quality than an egg classified as “dirty”.

B.5 Shell eggs

Sound eggs refers to eggs with unbroken shells, whose internal qualities render them fit for human consumption.

Nest Run eggs are eggs which are packed as they come from the production facilities without having been washed, sized or candled for quality, with the exception of some checks, dirties and other obvious under-grades having been removed.

Refrigerated eggs are eggs, which have been held continuously at temperatures lower than 7.2 °C from the time of their initial cooling, which is done in conformance with the national regulations and relevant Codes of Practice.

Shell protected eggs refers to eggs which have had a protective covering such as mineral oil applied to the shell surface. The oil shall comply with the requirements set out in Annex C.

Specialty Eggs are eggs which may be slightly different in nutrient value from regular table eggs, or they may be obtained from hens housed or fed in a special way.
B.5.5.1 *Premium Quality Eggs* are eggs which are specially selected from young hens at the peak of their laying cycle. These eggs exceed the requirements for Grade A eggs and are characterised by stronger shells and thicker whites.

B.5.5.2 *Free Run Eggs* are eggs which are produced by hens that are able to move about the floor of the barn and have access to nesting boxes and perches.

B.5.5.3 *Free Range Eggs* are eggs which are produced in a similar environment as free run eggs but where hens have access to outdoor runs as well.

B.5.5.4 *Organic Eggs* are eggs produced in an organic production system, in which hens are fed certified organic feeds. Organic production systems are required to operate under the regulatory oversight of a competent authority and the eggs are required to bear an appropriate “certified organic” designation and the name of the certifying agency.

B.5.5.5 *Vegetarian Eggs* are eggs produced by hens which are fed a diet containing only ingredients of plant origin.

B.5.5.6 *Omega-3 Enhanced Eggs* are eggs from hens which are fed a diet containing 10 % to 20 % flaxseed. They contain 0.4 g omega-3 fatty acids, compared to 0.04 g in regular table eggs.

B.5.5.7 *Vitamin-Enhanced Eggs* are eggs from hens which are fed a nutritionally-enhanced diet containing higher levels of certain nutrients (such as vitamin E, folate, vitamin B₆ and vitamin B₁₂). As a result, the eggs produced contain higher levels of these nutrients.

### Table B.1 – Summary of quality parameters of individual shell eggs

<table>
<thead>
<tr>
<th>Quality parameter</th>
<th>A quality</th>
<th>B quality</th>
<th>C quality</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shell</strong></td>
<td>Clean Unbroken Practically normal</td>
<td>Clean to slightly stained Unbroken Abnormal</td>
<td>Clean to moderately stained Unbroken Abnormal</td>
</tr>
<tr>
<td><strong>Air Cell</strong></td>
<td>4 mm or less in depth. Unlimited movement and free or bubbly</td>
<td>10 mm or less in depth. Unlimited movement and free or bubbly.</td>
<td>May be more than 10 mm in depth. Unlimited movement and free or bubbly.</td>
</tr>
<tr>
<td><strong>Albumen</strong></td>
<td>Clear Reasonably firm to firm. Haugh unit value of 60 or higher when measured at a temperature between 7.2 °C and 15.5 °C</td>
<td>Clear May be slightly weak and watery. Haugh unit value of 31 to 60 when measured at a temperature between 7.2 °C and 15.5 °C</td>
<td>Outline may be plainly visible. May be weak and watery. Small blood clots or spots may be present. Haugh unit value of less than 31 when measured at a temperature between 7.2°C and 15.5°C</td>
</tr>
<tr>
<td><strong>Yolk</strong></td>
<td>Outline slightly to fairly well-defined. Practically free from defects.</td>
<td>Outline may be well-defined, dark, enlarged and flattened. May show definite but not serious defects. Small blood spots or meat spots (aggregating not more than 3 mm in diameter) may be present.</td>
<td>Outline is plainly visible, enlarged and flattened. May show clearly visible germ development but no blood. May show other defects.</td>
</tr>
</tbody>
</table>
B.6. Tolerances within grades

B.6.1 Consumer Grade A at origin

This shall consist of eggs that are at least 87 % A quality. Within the maximum tolerance of 13 % that may be below A quality, not more than 1 % may be B quality due to air cells over 9.5 mm, blood spots aggregating not more than 3.2 mm in diameter, or serious yolk defects. Not more than 5 % (7 % for Jumbo size) checks are permitted and not more than 0.5 % leakers, dirties, or loss due to meat or blood spots in any combination, except that such loss may not exceed 0.3 %. Other types of loss are not permitted.

B.6.2 Consumer Grade A at destination

This shall consist of eggs that are at least 82 % A quality. Within the maximum tolerance of 18 % that may be below A quality, not more than 1 % may be B quality due to air cells over 9.5 mm, blood spots aggregating not more than 3.2 mm in diameter, or serious yolk defects. Not more than 7 % (9 % for Jumbo size) checks are permitted and not more than 1 % leakers, dirties, or loss due to meat or blood spots in any combination, except that such loss may not exceed 0.3 %. Other types of loss are not permitted.

B.6.3 Consumer Grade B at origin

This shall consist of eggs that are at least 90 % B quality, not more than 10 % may be checks, and not more than 0.5 % leakers, dirties, or loss due to meat or blood spots in any combination, except that such loss may not exceed 0.3 %. Other types of loss are not permitted.

B.6.4 Consumer Grade B at destination

This shall consist of eggs that are at least 90 % B quality, not more than 10 % may be checks, and not more than 1 % leakers, dirties or loss due to meat or blood spots in any combination, except that such loss may not exceed 0.3 %. Other types of loss are not permitted.

Table B.2 - Summary of tolerances within consumer grades at origin for shell eggs

<table>
<thead>
<tr>
<th>Consumer grade (Origin)</th>
<th>Quality required</th>
<th>Tolerance permitted %</th>
<th>Tolerance permitted Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade A</td>
<td>≥ 87 % A</td>
<td>≤ 13</td>
<td>B</td>
</tr>
<tr>
<td>Grade B</td>
<td>≥ 90 % B</td>
<td>≤ 10</td>
<td>Checks</td>
</tr>
</tbody>
</table>

Table B.3 - Summary of tolerances within consumer grades at destination for shell eggs

<table>
<thead>
<tr>
<th>Consumer grade (Destination)</th>
<th>Quality required</th>
<th>Tolerance permitted %</th>
<th>Tolerance permitted Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade A</td>
<td>≥ 82 % A</td>
<td>≤ 18</td>
<td>B</td>
</tr>
<tr>
<td>Grade B</td>
<td>≥ 90 % B</td>
<td>≤ 10</td>
<td>Checks</td>
</tr>
</tbody>
</table>
Table B.4 - Tolerance for individual case within a lot

<table>
<thead>
<tr>
<th>Consumer Grade</th>
<th>Case quality</th>
<th>Origin %</th>
<th>Destination %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade A</td>
<td>A (minimum)</td>
<td>77</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>13</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Check (maximum)</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Grade B</td>
<td>B (minimum)</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>Check (maximum)</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

B.6.5 Additional tolerances

In lots of two or more cases:

a) for grade A, no individual case may exceed 10 % less A quality eggs than the minimum permitted for the lot average;

b) for grade B, no individual case may exceed 10 % less B quality eggs than the minimum permitted for the lot average; and

c) no lot shall be rejected or downgraded due to the quality of a single egg, except for loss other than blood or meat spots.
Annex C
(normative)

Shell egg protecting operations

C.1 Shell egg protecting (oil processing) operations are conducted in a manner to avoid contamination of the product and maximize conservation of its quality.

C.1.1 Eggs with excess moisture on the shell are not to be shell egg protected.

C.1.2 Oil having any off-odour, or that is visibly contaminated, is not used in shell egg protection.

C.1.3 Processing oil, which has been previously used and which has become contaminated, is filtered and heat treated at 83 °C for 3 min prior to use.

C.1.4 Shell egg processing equipment is washed, rinsed and treated with a bactericidal agent each time the oil is removed. It is recommended that operators filter and heat-treat processing oil and clean processing equipment daily when in use.

C.1.5 Adequate coverage and protection against dust and dirt is to be provided when the equipment is not in use.
Annex D  
(normative)

Sampling Plan for Table Eggs

D.1 Whenever grading service is performed on a representative sampling basis, such sample is drawn from and consists of not less than the minimum number of cases as indicated in Table D.1. A minimum of 100 eggs is examined per sample case. For lots, which consist of less than one case, a minimum of 50 eggs is examined. If the lot consists of less than 50 eggs, all eggs are examined.

Table D.1 - Minimum number of cases comprising a representative sample

<table>
<thead>
<tr>
<th>Cases In Lot</th>
<th>Cases in Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2 to ≤ 10</td>
<td>2</td>
</tr>
<tr>
<td>11 to ≤ 25</td>
<td>3</td>
</tr>
<tr>
<td>26 to ≤ 50</td>
<td>4</td>
</tr>
<tr>
<td>51 to ≤ 100</td>
<td>5</td>
</tr>
<tr>
<td>101 to ≤ 200</td>
<td>8</td>
</tr>
<tr>
<td>201 to ≤ 300</td>
<td>11</td>
</tr>
<tr>
<td>301 to ≤ 400</td>
<td>13</td>
</tr>
<tr>
<td>401 to ≤ 500</td>
<td>14</td>
</tr>
<tr>
<td>501 to ≤ 600</td>
<td>16</td>
</tr>
</tbody>
</table>

D.2 For each additional 50 cases, or fraction thereof, in excess of 600 cases, one additional case shall be included in the sample.
Annex E
(informative)

Measuring albumen height

E.1 Equipment

For economy of time and preservation of the product, the following equipment is recommended:

a) a flat glass surface approximately 30.5 cm x 45.5 cm or larger, in dimensions placed on a metal stand with adjustable legs for leveling, and a mirror for observing the underside of the egg;

b) a standard individual egg scale calibrated in g;

c) a knife and breaking tray;

d) a micrometer mounted on a tripod graduated to read in 0.1 mm units.

e) a Haugh unit conversion chart (see Table E.1);

f) a squeegee; and

g) a liquid container.

E.2 Procedure

E.2.1 Reproducible results can be obtained only if uniform procedures are used. Since eggs for top quality must have practically normal shells, only such eggs are to be selected when obtaining the sample for examining the condition of the albumen and yolk. Prior to the measurement of albumen height, the eggs should be cooled to a temperature range of 10.0 °C to 15.5 °C.

E.2.2 To weigh the albumen height:

a) weigh the pre-cooled egg on a standard egg scale;

b) break the egg with a breaking knife;

c) spread the egg over a clean glass surface;

d) measure the albumen height with a micrometer;

e) scrape broken-out egg from the glass surface into a liquid container by using a squeegee;

f) convert to Haugh value units by reference to a Haugh unit conversion chart; and

g) repeat the procedure for the next measurement.

E.2.3 Notes

E.2.3.1 Care must be taken in using the breaking knife so that the thick white is not ruptured. Consistent results can best be obtained by using a breaking knife. Blunt edges, such as a table edge, may cause splintering of the shell with the possibility that the thick white may be punctured. The egg should be held as near the glass as possible and the contents emptied very gently from the shell.
E.2.3.2 In some eggs, the envelope of thick white is rather firmly attached to the shell membrane in the small end of the egg. When this is noted, rupture of the thick white can generally be prevented by slowly raising the half-shell. Albumen heights should not be recorded of eggs when the thick white has been mechanically ruptured or when the yolk membrane is ruptured for any reason.

E.2.3.3 The surface on which the egg contents are placed must be level. One egg at a time should be broken since it is important to measure the albumen height immediately after breaking. A delay of a few minutes can make a difference in the Haugh reading.

E.2.3.4 The micrometer should be checked before being used. Set it on the glass and turn the measuring rod down until it touches the surface of the glass on which the broken-out egg will be placed. To be sure that the rod is actually touching the surface of the glass, push the edge of a thin sheet of paper against the intersection of the rod and the glass. The face of the micrometer is then turned so that the indicator reads zero. The procedure should be repeated occasionally during the breaking operation to be sure that the micrometer is properly adjusted.

E.2.3.5 When determining albumen quality with a micrometer, select a flat area in the surface of the widest expanse of the thick white for measurement. Eggs with very high albumen will not have a flat surface and in such cases, a point about half-way between the yolk and the edge of the widest expanse of thick white should be selected. Care should be taken to avoid measuring areas over an air bubble or chalaza. The measuring rod should roll down slowly until it makes contact with the surface of the albumen and should be raised and cleaned before being placed over the next egg to be measured.

E.2.3.6 After the egg weight is determined and the albumen is measured, locate the micrometer reading in the proper weight column. The Haugh unit reading is found directly above or below the properly located micrometer reading in the column marked ‘Haugh units’.
<table>
<thead>
<tr>
<th>Egg Weight g/oz</th>
<th>Haugh Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>55</td>
<td></td>
</tr>
<tr>
<td>56</td>
<td></td>
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<td>57</td>
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<td></td>
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<tr>
<td>94</td>
<td></td>
</tr>
<tr>
<td>95</td>
<td></td>
</tr>
</tbody>
</table>

Table E.1 - Haugh unit conversion chart
| 766/27 | 3.9 | 4.0 | 4.1 | 4.2 | 4.3 | 4.4 | 4.5 | 4.6 | 4.7 | 4.8 | 4.9 | 5.0 | 5.1 | 5.2 | 5.3 | 5.4 | 5.5 | 5.6 | 5.7 | 5.8 | 6.0 | 6.1 | 6.2 | 6.3 | 6.4 | 6.5 | 6.6 | 6.7 | 6.8 | 6.9 | 7.0 | 7.1 | 7.2 | 7.3 | 7.4 | 7.5 | 7.6 | 7.7 | 7.8 | 7.9 | 8.0 | 8.1 | 8.2 | 8.3 | 8.4 | 8.5 | 8.6 | 8.7 | 8.8 | 8.9 | 9.0 | 9.1 | 9.2 | 9.3 |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 794/28 | 4.0 | 4.1 | 4.2 | 4.3 | 4.4 | 4.5 | 4.6 | 4.7 | 4.8 | 4.9 | 5.0 | 5.1 | 5.2 | 5.3 | 5.4 | 5.5 | 5.6 | 5.7 | 5.8 | 5.9 | 6.0 | 6.1 | 6.2 | 6.3 | 6.4 | 6.5 | 6.6 | 6.7 | 6.8 | 6.9 | 7.0 | 7.1 | 7.2 | 7.3 | 7.4 | 7.5 | 7.6 | 7.7 | 7.8 | 7.9 | 8.0 | 8.1 | 8.2 | 8.3 | 8.4 | 8.5 | 8.6 | 8.7 | 8.8 | 8.9 | 9.0 | 9.1 | 9.2 | 9.3 |
| 823/29 | 4.1 | 4.2 | 4.3 | 4.4 | 4.5 | 4.6 | 4.7 | 4.8 | 4.9 | 5.0 | 5.1 | 5.2 | 5.3 | 5.4 | 5.5 | 5.6 | 5.7 | 5.8 | 5.9 | 6.0 | 6.1 | 6.2 | 6.3 | 6.4 | 6.5 | 6.6 | 6.7 | 6.8 | 6.9 | 7.0 | 7.1 | 7.2 | 7.3 | 7.4 | 7.5 | 7.6 | 7.7 | 7.8 | 7.9 | 8.0 | 8.1 | 8.2 | 8.3 | 8.4 | 8.5 | 8.6 | 8.7 | 8.8 | 8.9 | 9.0 | 9.1 | 9.2 | 9.3 | 9.4 |
| 850/30 | 4.2 | 4.3 | 4.4 | 4.5 | 4.6 | 4.7 | 4.8 | 4.9 | 5.0 | 5.1 | 5.2 | 5.3 | 5.4 | 5.5 | 5.6 | 5.7 | 5.8 | 5.9 | 6.0 | 6.1 | 6.2 | 6.3 | 6.4 | 6.5 | 6.6 | 6.7 | 6.8 | 6.9 | 7.0 | 7.1 | 7.2 | 7.3 | 7.4 | 7.5 | 7.6 | 7.7 | 7.8 | 7.9 | 8.0 | 8.1 | 8.2 | 8.3 | 8.4 | 8.5 | 8.6 | 8.7 | 8.8 | 8.9 | 9.0 | 9.1 | 9.2 | 9.3 | 9.4 | 9.5 | 9.6 |

End of Document
Standards Council

The Standards Council is the controlling body of the Bureau of Standards and is responsible for the policy and general administration of the Bureau.

The Council is appointed by the Minister in the manner provided for in the Standards Acts, the Council appoints committees for specific purposes.

The Standards Act, 1968 sets out the duties of the Council and the steps to be followed for the formulation of a standard.

Preparation of standards document

The following is an outline of the procedure which must be followed in the preparation of documents:

1. The preparation of standards documents is undertaken upon the Standards Council’s authorization. This may arise out of representations from national organizations or existing Bureau of Standards’ Committees or Bureau staff. If the project is approved it is referred to the appropriate sectional committee or if none exists a new committee is formed, or the project is allotted to Bureau staff.

2. If necessary, when the final draft of a standard is ready, the Council authorizes an approach to the Minister in order to obtain the formal concurrence of any other Minister who may be responsible for any area which the standard affects.

3. With the approval of the Standard Council, the draft document is made available for general public comments. All interested parties, by means of notice in the Press, are invited to comment. In addition copies are forwarded to those known to be interested in the subject.

4. The Committee considers all the comments received and recommends a final document to the Standards Council.

5. The Standards Council recommends the document to the Minister for publication.

6. The Minister approves the recommendation of the Standards Council.

7. The declaration of the standard is gazetted and copies placed for sale.

8. On the recommendation of the Standards Council the Minister may declare a standard to be compulsory.

9. Amendments to and revisions of standards normally require the same procedure as is applied to the preparation of the original standard.

Overseas standards documents

The Bureau of Standards maintains a reference library which includes the standard of many overseas organizations. These standards can be inspected upon request.

The Bureau can supply on demand copies of standards produced by some national standards bodies and is the agency for the state of standards produced by International Organization for Standardization (ISO) members.

Application to use the reference library and to purchase Jamaican and other standards documents should be addressed to:

Bureau of Standards Jamaica
6 Winchester Road
P.O. Box 113
Kingston 10