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Draft Sri Lanka Standard
SPECIFICATION FOR TABLE CHICKEN EGGS
(DSLS 959 :) (First Revision)

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இவ்வரைவு இலங்கைக் கட்டளையெனக் கருதப்படவோ அன்றிப் பிரயோகிக்கப்படவோ கூடாது
This draft should not be regarded or used as a Sri Lanka Standard.

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Comments to be sent to: SRI LANKA STANDARDS INSTITUTION, 17, VICTORIA PLACE,
ELVITIGALA MAWATHA, COLOMBO 08.

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Introduction

This Draft Sri Lanka Standard has been prepared by the Sri Lanka Standards Institution and is now being circulated for technical comments to all interested parties.

All comments received will be considered by the SLSI and the draft if necessary, before submission to the Council of the Institution through the relevant Divisional Committee for final approval.

The Institution would appreciate any views on this draft which should be sent before the specified date. It would also be helpful if those who find the draft generally acceptable could kindly notify us accordingly.

All Communications should be addressed to:

The Director General
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17, Victoria Place,
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Colombo 08.

**DRAFT SRI LANKA STANDARD
SPECIFICATION FOR TABLE CHICKEN EGGS
(First Revision)**

DSLS 959:

Gr.

For Public Comments

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DRAFT SRI LANKA STANDARD
SPECIFICATION FOR TABLE CHICKEN EGGS
(First Revision)

FOREWORD

This Sri Lanka Standard was approved by the Sectoral Committee on Food Products and was authorized for adoption and publication as a Sri Lanka Standard by the Council of the Sri Lanka Standards Institution on

This Standard was first published in 1992. This first revision incorporates limits for microbiological parameters, aflatoxin B1, veterinary drugs residues, potentially toxic elements and pesticide residues. During the revision of this Standard, requirements for grading, shelf life, packaging, labelling & marking have been updated based on the current industrial practices and technical information.

There are two main types of eggs, due to the pigmentation on the eggshell, i.e. white egg and brown egg. There is no difference in nutritional qualities of both egg types based on the eggshell colour. The eggshell colour is due to the genetic variations of the bird.

Commercial table chicken eggs mean eggs from domesticated chickens, which are sold for human consumption, either in shell egg form or to be used for further processing into egg products.

This Standard is subject to the Food Act No. 26 of 1980 and the regulations framed thereunder.

In the preparation of this Standard, the assistance derived from the following publications is gratefully acknowledged.

CODEX CXS 193 - 1995	General standard for contaminants and toxins in food and feed
MS 680: 2013	Malaysian standard fresh chicken eggs specification
TAS 6702-2010	Thai agricultural standard hen egg
Egg grading manual agricultural handbook No 75 (2000), United States Department of Agriculture	
Egg Science and Technology (4 th Edition), William J. Stadelman & Owen J Cotterill, 1995	

1 SCOPE

This Standard prescribes the requirements, methods of sampling and test for table chicken eggs.

2 REFERENCES

SLS	102	Rules for rounding off numerical values
SLS	428	Random sampling methods
SLS	516	Methods of test for microbiology of food and animal feeding stuffs Part 5 Horizontal methods for detection of <i>Salmonella</i> spp.
SLS	910	Maximum residue limits for pesticides in food

CODEX CXM 2 Maximum residue limits (MRLS) and risk management recommendations (RMRS) for residues of veterinary drugs in foods
Official Methods of Analysis of the Association of Official Analytical Chemist, 21st edition 2019

3 DEFINITIONS

For the purpose of this Standard, the following definitions shall apply:

- 3.1 abnormal shell:** Shell that may be misshapen or faulty in texture or strength or that may show pronounced spots, ridges, or rough areas.
- 3.2 air cell:** Air space between the inner and outer shell membrane generally found at the blunt end of the egg.
- 3.3 blood spots:** Small red or pink spots that are sometimes found on the yolk or white of the egg.
- 3.4 candling:** The process of holding the egg against a beam of light in a such way that light rays penetrate and illuminate the interior of the egg for inspection.
- 3.5 chalazae:** Two fibrous structures made up of egg white which extend in a spiral form from the yolk to each end of the egg, thus holding the yolk in position.
- 3.6 check:** An egg which has a crack in the shell but intact with its shell membrane and its contents do not leak.
- 3.7 clean:** An egg which is free from foreign material, stain or other visual discolouration due to contamination.
- 3.8 dirty:** An egg adhering dirt and/ or stains covering more than one-fourth of the shell surface.
- 3.9 egg white or albumen:** An inner composition of the egg consists of both the part of firm and viscous liquid surrounding the egg yolk and the part of clear and transparent liquid which surrounds the inner firm white.
- 3.10 grading:** Grouping of eggs into lots having similar characteristics.
- 3.11 hairline crack:** Very fine cracks usually run length wise in the shell, difficult to detect visually.
- 3.12 Haugh unit (HU):** A measure of egg protein quality based on the height of its egg white.
- 3.13 leaker:** A crack or a break in the shell and shell membrane to the extent that the egg contents are exuding or free to exude through the shell.
- 3.14 meat spots:** Pieces of the tissues from the body organs which are usually brown in colour sometimes found in egg white and yolk.

3.15 smashed: Shell crushed or shattered allowing the contents to come out.

3.16 sound egg: An egg with an unbroken shell and internal qualities fit for human consumption.

3.17 table eggs: Eggs that are produced by the hens of species *Gallus gallus* for the direct human consumption or preparation of egg products.

3.18 yolk: The yellowish spheroidal material surrounded by the egg white.

4 REQUIREMENTS

4.1 Table chicken eggs shall be graded according to the weights of individual eggs as shown in Table 1.

TABLE 1 – Weight classes of table chicken eggs

Sl No. (1)	Weight class (2)	Weight of individual table chicken egg (3)
i)	Jumbo (XXL)	≥ 70.0 g
ii)	Extra Large (XL)	63.0 g to 69.9 g
iii)	Large (L)	56.0 g to 62.9 g
iv)	Medium (M)	49.0 g to 55.9 g
v)	Small (S)	42.0 g to 48.9 g
vi)	Extra Small (XS)	35.0 g to 41.9 g

NOTES

1. For grade XXL presence of 5% of eggs belonging to grade XL is permitted.
2. For grade XL presence of 5% of eggs belonging to grade XXL and 5% of eggs belonging to grade L are permitted.
3. For grade L presence of 5% of eggs belonging to grade XL and 5% of eggs belonging to grade M are permitted.
4. For grade M presence of 5% of eggs belonging to grade L and 5% of eggs belonging to grade S are permitted.
5. For grade S presence of 5% of eggs belonging to grade M and 5% of eggs belonging to grade XS are permitted.
6. For grade XS presence of 5% of eggs belonging to grade S and 5% of eggs having a mass less than 35.0 g are permitted.

4.2 The shells of the eggs shall not be abnormal, checked, leaker or smashed.

4.3 Eggs shall be designated with respect to colour as follows:

- a) White – chalky white colour;
- b) Brown – brown, including the dark, cream brown, and any variation in the shades of brown; and
- c) Tinted – a mixture of white and brown.

NOTE

Other colours produced naturally, such as blue, green and black may also be present.

4.4 Eggs graded based on weight in accordance with Table 1 shall also be graded based on the quality requirements stipulated in the Table 2 when tested by the methods prescribed in column 4 of the same.

For Public Comments

TABLE 2 – Requirements for individual table chicken eggs

Sl No. (1)	Factor (2)	Specification for each quality factor			Method of test (6)
		AA Grade (3)	A Grade (4)	B Grade (5)	
i)	Shell	Clean Unbroken Practically normal	Clean Unbroken Practically normal	Clean to slightly stained* Unbroken Abnormal	Appendix B
ii)	Air cell	3 mm or less in depth Unlimited movement Free for bubbly	5 mm or less in depth Unlimited movement Free for bubbly	Over 5 mm in depth Unlimited movement Free for bubbly	Appendix B
iii)	White	Clear Firm 72 HU or higher	Clear Reasonably firm 60 HU to 71 HU	Weak and watery Small blood and meat spots present** Less than 60 HU	Appendix B
iv)	Yolk	Outline slightly defined Practically free from defects	Outline fairly defined Practically free from defects	Outline plainly visible Enlarged and flattened Clearly visible germ development but no blood Other serious defects	Appendix B

* Moderately stained areas permitted (1/32 of surface if localized, or 1/16, if scattered)

** If they are small (aggregating not more than 3 mm in diameter)

NOTE

“B grade” eggs are suitable for further processing such as liquid, frozen and dried egg products.

4.5 MICROBIOLOGICAL LIMITS

Salmonella spp. per 25 g of eggshell and inner contents of the egg shall be absent when tested in accordance with **SLS 516 Part 5**.

4.6 CONTAMINANTS

4.6.1 Aflatoxins

Aflatoxin B₁ shall not exceed the 0.5 µg/ kg, when tested in accordance with the **SLS 962 Part 1**.

4.6.2 Veterinary drug residues

Veterinary drug residues shall not remain or if practically unavoidable, shall be reduced to comply with the maximum tolerable limits specified in **CXM 2**.

4.6.3 Potentially toxic elements

The product shall not exceed the limits for potentially toxic elements given in Table 3 when tested in accordance with the method prescribed in Column 4 of the table.

TABLE 3 - Limits for potentially toxic elements

SI No (1)	Potentially toxic element (2)	Limit (3)	Method of test (4)
i)	Lead as Pb, mg/ kg, max.	0 .05	AOAC 999.10/ AOAC 2013.06
ii)	Arsenic as As, mg/ kg, max.	0 .10	AOAC 999.10/ AOAC 2013.06
iii)	Cadmium as Cd, mg/kg, max.	0 .05	AOAC 999.10/ AOAC 2013.06

4.6.4 Pesticide residues

Pesticide residues shall not remain or if practically unavoidable, shall be reduced to comply with the maximum tolerable limits specified in **SLS 910**.

NOTE

It is not necessary to carry out these determinations (4.6) as routine for all the samples. These should be tested in case of dispute and when required by the purchaser or vendor or when there is any suspicion of contamination.

5 SHELF LIFE

The maximum shelf life of newly laid table chicken eggs depends on storage temperature and shall be as follows:

- a) Maximum 90 days: 0 °C to 7 °C
- b) Maximum 60 days: 8 °C to 15 °C
- c) Maximum 30 days: 16 °C to 25 °C
- d) Maximum 21 days: 26 °C to 32 °C
- e) Maximum 7 days: 33 °C to 37 °C

NOTE

1. Table chicken eggs are not recommended to wash before storage.
2. Table chicken eggs should be stored and transported preferably at a constant temperature and should not be subjected to rapid temperature fluctuations.

6 STORAGE

Table chicken eggs shall not be exposed to direct sunlight and moisture.

7 PACKAGING

7.1 Table chicken eggs shall be packaged with their pointed end facing downwards as prescribed in **7.1.1**. The packaging material shall not contain any substances that will impart any colour, flavour or odour to the table chicken eggs. The package shall be durable against handling, transporting and maintaining the quality of the eggshell.

7.1.1 Retail packaging

The method of inner packaging shall be as prescribed in **7.1.1.a)** and **7.1.1.b)**.

7.1.1.a) Table chicken eggs shall be packaged in standard plastic or paper cartons designed for packaging of eggs.

7.1.1.b) Table chicken eggs shall be packaged in moulded trays designed for packaging of eggs or on thick layers of clean appropriate material to prevent breakage of eggs.

NOTE

*Table chicken eggs packaged as in **7.1.1** if required may be further packed in wooden boxes or fiberboard boxes or any other suitable packing material with adequate ventilation.*

7.1.2 Bulk packaging

Table chicken eggs shall be packaged in moulded trays designed for packaging of eggs or on thick layers of clean appropriate material to prevent breakage of eggs.

NOTES

1. *All the packaging material should not be reused unless they are cleaned and sanitized to meet the required hygienic conditions.*
2. *Reused packaging material should not bear any previous marking and / or labelling likely to lead to confusion.*

8 MARKING AND/ OR LABELLING

8.1 The following shall be marked and/ or labelled legibly and indelibly on each of the retail packaging as prescribed in **7.1.1.a**).

- a) Name of the product as “Chicken Eggs” or “Table Chicken Eggs”;
- b) Weight class (as given in Table 1);
- c) Grade (as given in Table 2);
- d) Brand name or trade mark, if any;
- e) Name and address of the manufacturer/ packer/ distributor;
- f) Country of origin, if imported;
- g) Number of eggs;
- h) Instructions for storage, as applicable;
- i) Batch number;
- j) Date of collection; and
- k) Date of expiry.

8.2 The following shall be marked and/ or labelled legibly and indelibly in outer packaging as prescribed below if applicable.

- a) Name of the product as “Chicken Eggs” or “Table Chicken Eggs”;
- b) Weight class (as given in Table 1);
- c) Grade (as given in Table 2);
- d) Brand name or trade mark, if any;
- e) Name and address of the manufacturer/ packer/ distributor;
- f) Number of inner packs;
- g) Instructions for storage, as applicable;
- h) Batch number;
- i) Date of collection; and
- j) Date of expiry.

8.3 The following shall be marked, labelled and/ or disclosed legibly and indelibly packed as prescribed in **7.1.1.b** and **7.1.2**.

- a) Name of the product as “Chicken Eggs” or “Table Chicken Eggs”;
- b) Weight class (as given in Table 1);
- c) Grade (as given in Table 2);
- d) Brand name or trade mark, if any;
- e) Name and address of the manufacturer/ packer/ distributor;
- f) Number of eggs;
- g) Instructions for storage, as applicable;
- h) Batch number;
- i) Date of collection; and

j) Date of expiry.

8.4 Packages shall be marked and/ or labelled, “**Eggs handle with care**” in bold letters, with an arrow pointing to the top of the case. In addition, the container shall have the following words “**This side up**” in letters 25 mm high.

8.5 If individual table chicken eggs are being printed with marking and labelling requirements, the ink used shall be food grade.

9 SAMPLING

Representative samples of eggs shall be drawn according to the methods prescribed in Appendix A.

10 METHODS OF TEST

Tests shall be carried out as specified in **Part 5** of **SLS 516**, **SLS 910**, **Part 1** of **SLS 962**, **CXM 2**, Appendix **B** and **C** of this Standard and Official Methods of Analysis of the Association of Official Analytical Chemist, 21st Edition 2019.

11 CRITERIA FOR CONFORMITY

A lot shall be declared as conforming to the requirements of the specification if the following conditions are satisfied.

11.1 Each package and carton/ tray inspected as in **A.3.1** conforms to marking and/ or labelling and packaging requirements.

11.2 Each egg tested as in **A.3.2**, **A.3.3**, **A.3.4** and **A.3.5** satisfies the relevant requirements.

APPENDIX A COMPLIANCE OF A LOT

A.1 LOT

In any consignment all package containing eggs of same grade and belonging to one batch supply, shall constitute a lot.

GENERAL REQUIREMENTS OF SAMPLING

In drawing, preparing and handling samples, following precautions and directions shall be taken:

A.2.1 Samples shall be drawn in a protected place not exposed to damp air, dust or soot.

A.2.2 The sampling instruments shall be cleaned and dried when used. When drawing samples for microbiological examination, the sampling instruments shall be sterilized.

A.2.5 Precautions shall be taken to protect the samples, the product being sampled and the sample container from adventitious contamination.

A.2.6 The samples shall be placed in clean and dry containers. When drawing samples for microbiological examination the sample containers shall be sterilized.

A.2.8 The sample containers shall be marked with necessary details.

A.2 SCALE OF SAMPLING

A.2.1 Samples shall be tested from each lot for ascertaining conformity to the requirements of this Standard.

A.2.2 The number of packages of eggs to be selected from a lot shall be in accordance with the Table 4.

TABLE 4 - Scale of sampling

Number of packages in the lot (1)	Number of packages to be selected (2)	Sub-sample size (3)
Up to 25	3	13
26 to 50	4	20
51 to 90	5	32
91 to 150	8	50
151 and above	13	80

A.2.3 The packages shall be selected at random. In order to ensure randomness of selection, tables of random numbers as given in **SLS 428** shall be used.

A.2.4 In case of packages having eggs packed in cartons, from each package, 10 cartons shall be selected and from each carton, 8 eggs selected to form a sample of 80 eggs.

A.2.5 In case of packages having eggs packed in moulded trays then 10 trays shall be selected from each package and from each tray 8 eggs selected to form a sample of 80 eggs.

A.2.6 In case of packages having eggs packed on layers then from each package, 8 eggs shall be selected from each of different layers to form a sample of 80 eggs.

A.2.7 Two sets of subsamples shall be drawn as given in column 3 of the table 4 and tested as given in **A.3.3** and **A.3.4**.

A.2.8 Separate set of 5 sub samples shall be drawn for microbiological requirements.

A.3 NUMBER OF TESTS

A.3.1 The package and cartons or trays selected as in **A.2.3** and **A.2.4** or **A.2.5** shall be inspected

for marking and/ or labelling and packaging requirements.

A.3.2 Each egg in the sample of 80 eggs from each package selected as in **A.2.4**, **A.2.5** or **A.2.6** shall be tested for the requirements given as in **4.1**, **4.2**, **4.3** and requirements for shell quality, air cell and egg yolk given in **4.4**.

A.3.3 Each egg in the sub-sample size given as in column **3** of the Table **4** selected from total eggs tested as in **A.3.2** shall be tested for requirements of egg white given as in **4.4**.

A.3.4 Set of **5** sub samples shall be drawn and tested for microbiological requirements in **4.5**.

A.3.5 Set of sub samples shall be drawn as given in column **3** of Table **4** and tested for contaminants in **4.6**.

APPENDIX B EXAMINATION OF QUALITY FACTORS

B.1 INTERIOR QUALITY (BY CANDLING)

B.1.1 Apparatus

B.1.1.1 Bulb, light beam of 60 Watts and 100 Watts fitted to a candling apparatus or Egg scanners

B.1.2 Procedure

Examine eggs individually. Hold the eggs against a light beam of 60 Watts (**B.1.1.1**) when examining white eggs and 100 Watts for brown eggs in such a way that the light rays penetrate and illuminate the interior of the egg for inspection.

Egg scanner to be used according to the manufacturer's instructions.

B.1.3 Observations

B.1.3.1 Description of yolk shadow outline

- a) Outline slightly defined – A yolk outline, which is distinctly visible and blends in to the surrounding white as the egg is rotated in front of the Candler.
- b) Outline fairly well defined – A yolk outline, which is discernible but cannot be outlined clearly when twirled in front of a Candler.
- c) Outline well defined – Outline of the yolk clearly visible as it casts a dark shadow when twirled in front of a Candler.

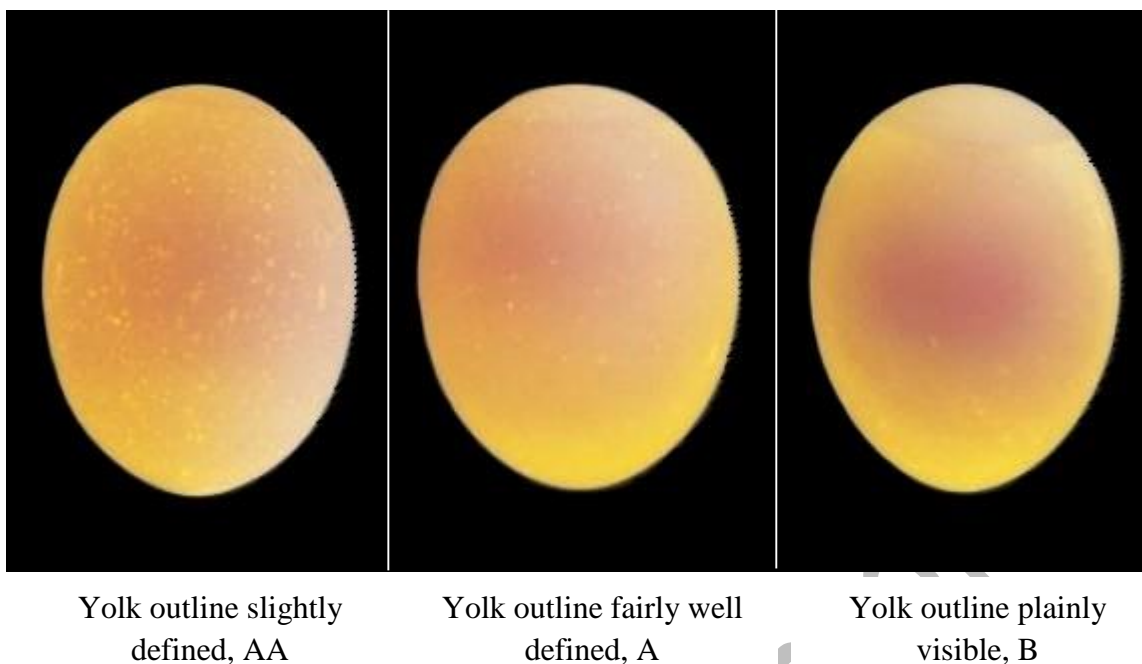
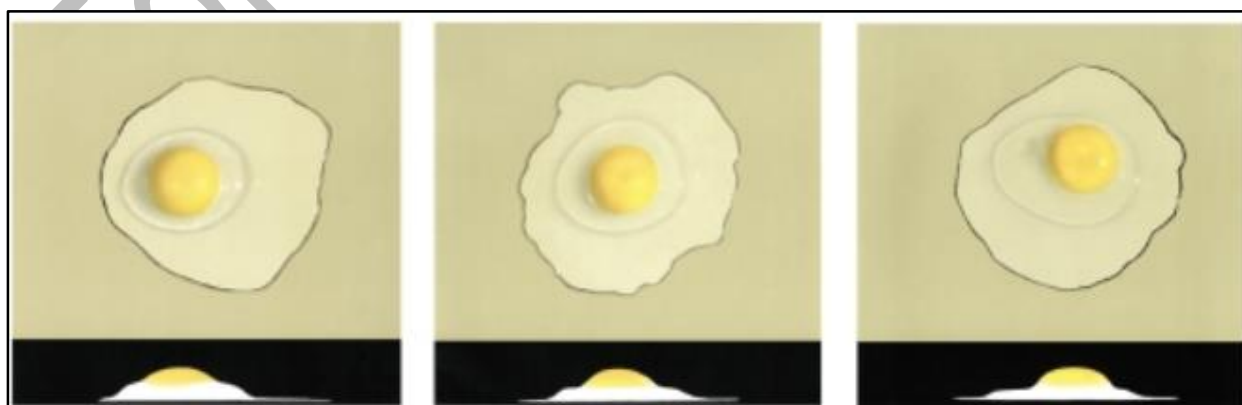


FIGURE 1 - Specification for egg yolk

B.1.3.2 Description of egg white

- a) Clear – Egg white, which is free from discolourations and presence of any free-floating foreign bodies on it.
- b) Firm – Egg white, which is sufficiently thick or viscous and thus makes the outline of yolk slightly or indistinctly visible when twirled in front of a Candler.
- c) Reasonably firm – Egg white which is reasonably thick or viscous but enough to allow casting of the outline of the yolk when twirled and candled.
- d) Weak and watery – Egg white which is thin and lacks in viscosity. It permits the yolk to approach the shell closely on candling making yolk outline clearly visible on twirling.



1. High “AA”

2. Average “AA”

3. Low “AA”

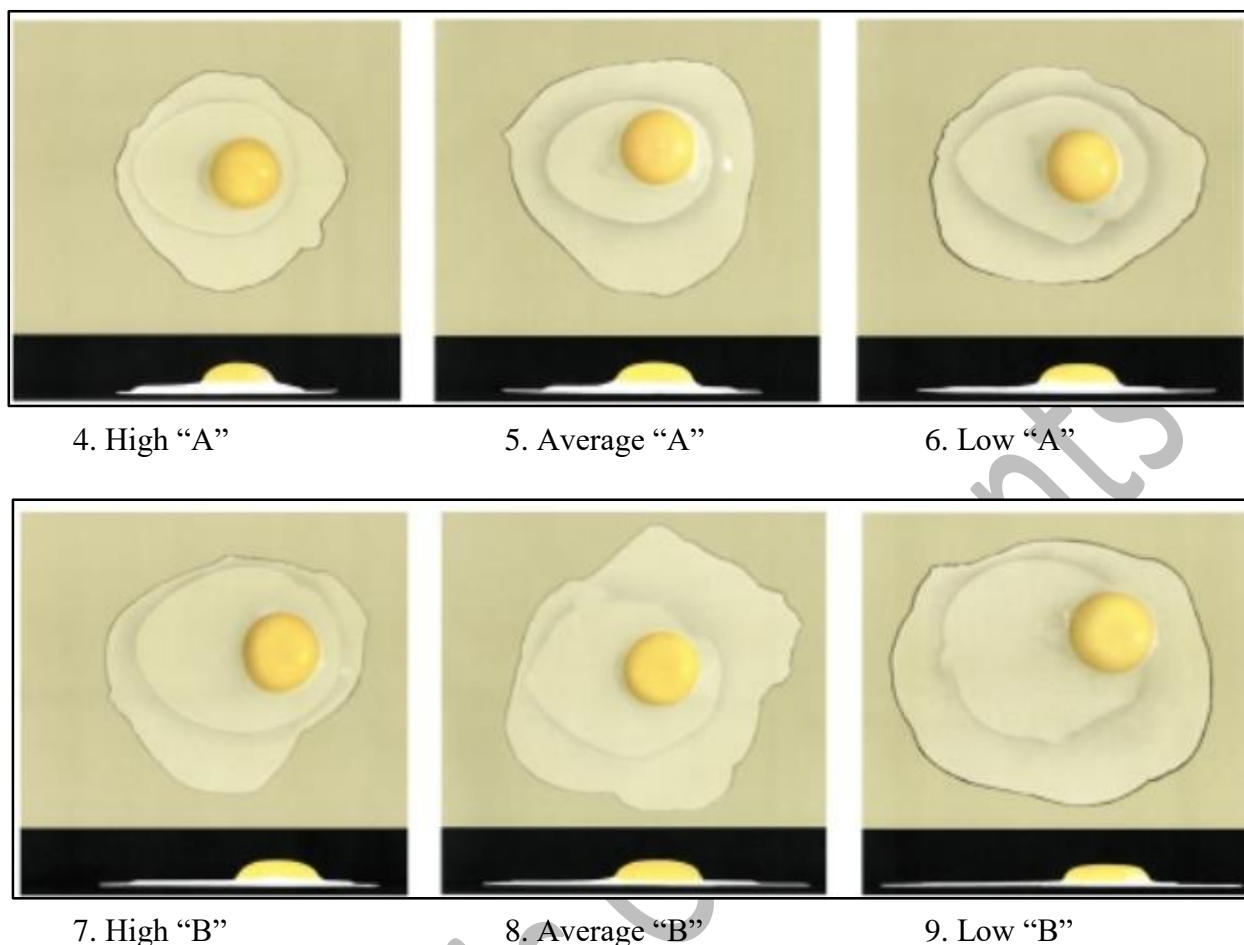


FIGURE 2 - The pictures on this chart demonstrate the interior quality of broken-out eggs for each of the designated grades as specified in the U.S. standards with respect to white and yolk quality. Pictures 1, 2, and 3 represent the appearance of broken-out eggs of high, average, and low AA grade; 4, 5, and 6 represent high, average, and low A grade; and 7, 8, and 9 represent high, average, and low B grade.

B.2 MEASURING DEPTH OF AIR CELL

B.2.1 Apparatus

B.2.1.1 *Gauge*, air cell gauge (See **FIGURE 3**).

B.2.2 Procedure

Examine eggs individually according to the procedure given in **B.1.2**. Measure the depth of air cell by means of air cell gauge while candling prior to breaking.

B.2.3 Observations

B.2.3.1 Description of air cell

- a) Practically regular – An air cell which maintains practically a fixed position inside the egg and presents an even outline with not more than 6 mm movement in any direction when it is turned.

- b) Free air cell – An air cell that moves freely towards the uppermost point inside the egg as it is rotated slowly. The shell membranes are intact allowing the air cell to move freely in any direction between them.
- c) Bubbly air cell – A ruptured air cell consisting of one or more small separate air bubbles floating beneath the main air cell.

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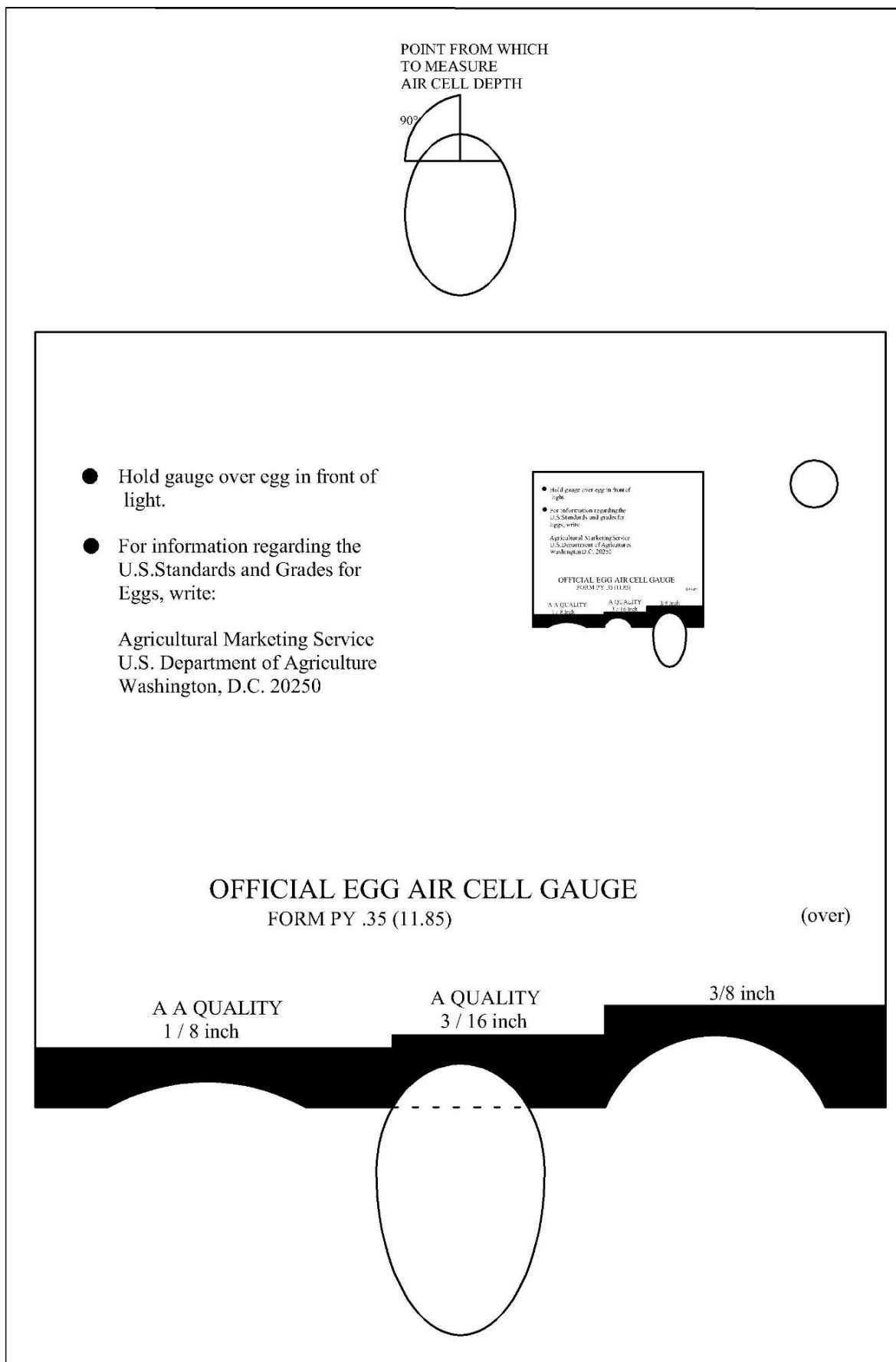


FIGURE 3 - Official air cell gauge and method for measuring depth of air cell

B.3 EXTERIOR QUALITY

B.3.1 Shell Shape

The normal egg has an oval shape with one end larger than the other, and it tapers toward the smaller end. The ends of an egg are commonly called the blunt end (air cell end) and the pointed end. Investigators measured both strength and appearance of many eggs to develop the “ideal” egg shape (See **FIGURE 4**).

The shape of an egg can be considerably different from the ideal (See **FIGURE 5**), but may still be considered practically normal.

Eggs that are unusual in shape may have ridges, rough areas, or thin spots (See **FIGURE 6** and **7**).

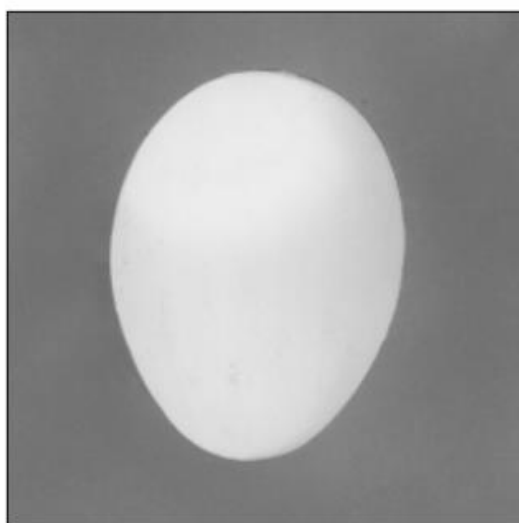


FIGURE 4 - Ideal egg shape, usually found in AA or may be A grade.



FIGURE 5 - Practically normal shape, which found in AA or A grade.



FIGURE 6 - Practically normal shape, showing slight ridges and rough areas that do not materially affect strength of the shell and are permitted in AA or A grade.



FIGURE 7 - Abnormal shape having pronounced the shape and ridges and/ or thin spots

B.3.2 Hairline cracks in the shell

Hairline cracks cannot be readily visualized and can be observed only while candling (**B.1**).

B.3.3 Shell Cleanliness

Free from stains and foreign material on the shell must be considered in assigning a quality designation to an individual egg.

Clean — A shell that is free from foreign material and from stains or discolorations that are readily visible. An egg may be considered clean if it has only very small specks, stains, or cage marks, if such specks, stains, or cage marks are not of sufficient number or intensity to detract from the generally clean appearance of the egg. Eggs that show traces of processing oil on the shell are considered clean unless otherwise soiled.

Dirty — A shell that is unbroken and has dirt or foreign material adhering to its surface, has prominent stains, or has moderate stains covering more than one-thirty-second of the shell surface if localized, or one-sixteenth of the shell surface if scattered. The illustrations in **FIGURE 8** are intended as a guide and are not to be used as an actual measurement in grading.

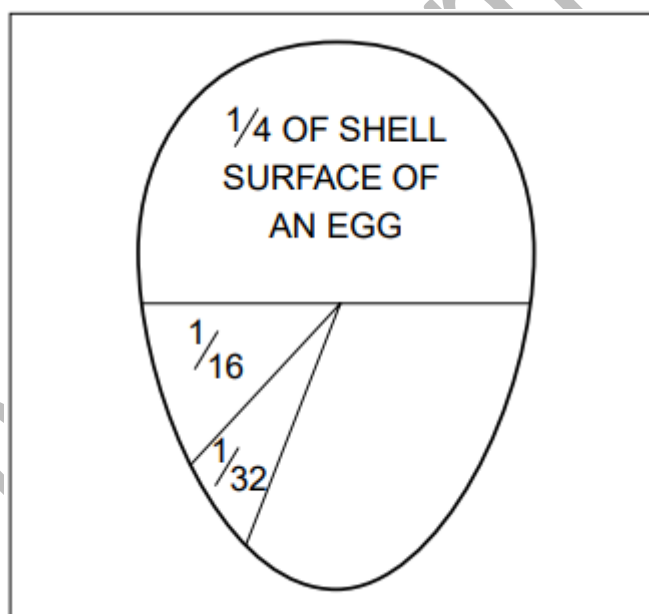


FIGURE 8 - One thirty-second, one-sixteenth, and one-fourth of the shell surface of an egg (areas shown are approximate)

APPENDIX C DETERMINATION OF ALBUMEN HEIGHT

C.1 APPARATUS AND MATERIAL

C.1.1 *Glass surface*, flat, approximately 30.5 cm × 45.7 cm or larger on a metal stand with adjustable legs for levelling and a mirror for observing the bottom surface of the broken egg.

C.1.2 *Knife*

C.1.3 *Micrometer, spherometer or Haugh meter*, as shown in **FIGURE 9**

C.1.4 *Alignment chart*, as shown in **FIGURE 10**

C.1.5 *Squeegee/ Squilgee*

C.1.6 *Container*

C.2 PROCEDURE

Set the micrometer, spherometer or Haugh meter (**C.1.3**) on the glass surface (**C.1.1**). Check the zero reading by lowering the measuring rod until the point touches the surface of the glass on which the broken out egg will be placed. The pointer should be zero. If not slacken the clamp and turn the bezel so that the zero mark coincides with the pointer. Retract the point upwards to its full extent.

Weigh, the pre-cooled egg (*see Note 1*). Break the egg on to the flat glass surface (**C.1.1**) (*see NOTES 2, 3 and 4*). Place the above micrometer over the egg and lower the point until just touches the albumen (*see NOTE 5*). Measure the albumen height 1cm away from the yolk that is indicated on the dial (*see NOTE 6*). Take three measurements from different points of the thick white and calculate the mean value. Examine for the quality of egg white as given in **B.1.3.2**. Remove the broken-out egg from the glass surface into a container (**C.1.6**) by using squeegee (**C.1.5**).

The measuring rod should be raised and cleaned before placing over next egg.

Repeat the procedure for the next measurement.

NOTES

1. Eggs removed from the refrigerator should be kept for three hours at temperature of 23 ± 2 °C. The interior temperature of eggs should not be lower than 7 °C or higher than 15 °C at the time of performing the breakout test.
2. 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 unit reading.
3. Care should be exercised to see that the thick white is not punctured while braking. Consistent results can best be obtain by using a breaking knife. Blunt edges, such as a table edge, may cause splintering of the shell with the possibility of puncturing the thick

white. The egg should be held as near the glass as possible and the contents emptied very gently from the shell.

4. In some eggs the envelope of thick white is rather firmly attached to the shell membrane in the pointed 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 cause.
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 halfway between the yolk and the edge of the widest expanse of thick white should be selected.
6. Care should be taken to avoid measuring the albumen height in an area where there is an air bubble or chalazae.
7. Readings must be taken by the same analyst.



FIGURE 9 - MICROMETER, SPHEROMETER OR HAUGH METER

C.3 CALCULATION

C.3.1 The Haugh Unit (HU) can be calculated from the following equation:

$$HU = 100 \log_{10} H + 7.57 - 1.7 M^{0.37}$$

Where,

HU is the Haugh units of interior quality whose numerical value equals the quality value of the egg;

H is the height, in mm; and

M is the mass, in g.

C.3.2 An alignment chart for finding Haugh units without having to make calculations is given in **FIGURE 10**.

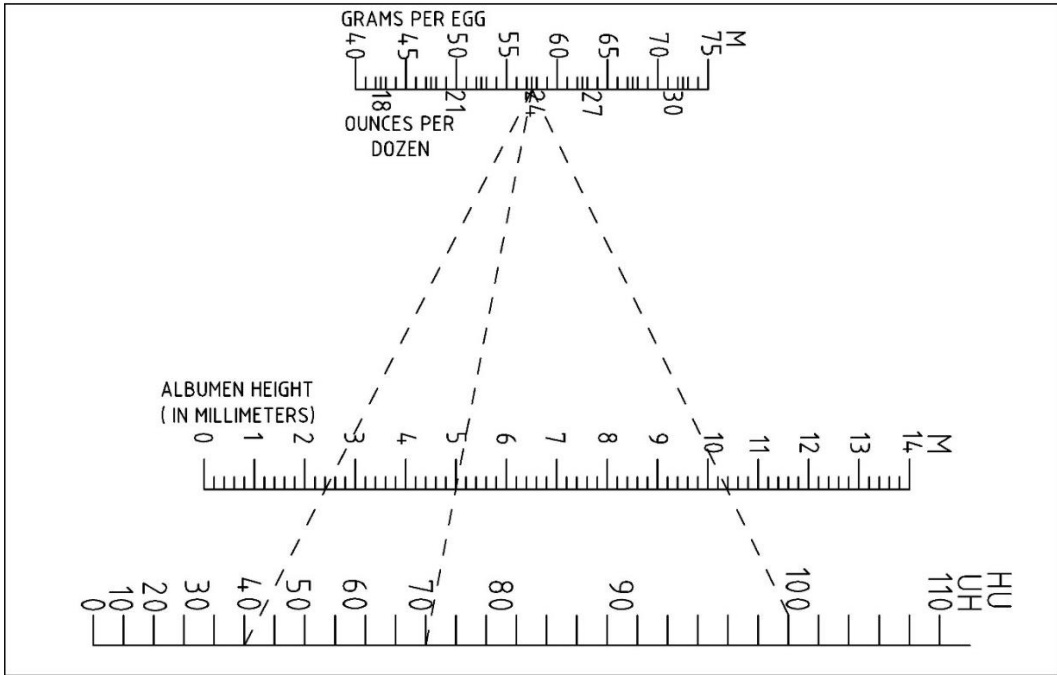


FIGURE 10 - Alignment Chart

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