



**THAI AGRICULTURAL STANDARD**

**TAS 6703-2012**

**DUCK EGG**

**National Bureau of Agricultural Commodity and Food Standards  
Ministry of Agriculture and Cooperatives**

**ICS 67.120.20**

**ISBN XXX-XXX-XXX-XXX-X**

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In references to the Ministry of Agriculture and Cooperatives Notification on the Thai Agricultural Standard entitled Duck Egg (TAS 6703-2005) dated February 8, B.E.2548(2005) The Agricultural Standards Committee consider as appropriate to amend such standard for enhancing duck egg produced to be recognized on its quality and safety in response to the changing condition.

This Standard is based on the following documents:

TAS 6702-2555. Thai Agricultural Standard entitled Hen Egg. National Bureau of Agricultural Commodity and Food Standards. Ministry of Agriculture and Cooperatives

TAS 6703-2548. Thai Agricultural Standard entitled Duck Egg. National Bureau of Agricultural Commodity and Food Standards. Ministry of Agriculture and Cooperatives The United States Department of Agriculture (USDA). Egg-Grading Manual. Agricultural Handbook Number 75. Rev. July 2000.

The United States Department of Agriculture (USDA). United States standard, Grades, and Weight Classes for Shell Eggs. AMS 56.

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**Published in the Royal Gazette, Announcement and General Publication Volume 129,**

**Special Section 32<sup>3</sup>(Ngo) D,**

**Dated 19 September B.E.2555 (2012)**



**NOTIFICATION OF THE MINISTRY OF AGRICULTURE AND COOPERATIVES**  
**SUBJECT: THAI AGRICULTURAL STANDARD: DUCK EGG**  
**UNDER THE AGRICULTURAL STANDARDS ACT B.E. 2551 (2008)**

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Whereas the Agricultural Standards Committee, by decision of the fifth session of B.E.2555 (2012), on 24 September B.E.2555 (2012) deems it necessary to establish an agricultural standard for duck egg as a voluntary standard in accordance with the Agricultural Standards Act B.E. 2551 (2008) to promote such agricultural commodity to meet its standard on quality and safety.

By virtue of Sections 5, 15 and 16 of the Agricultural Standards Act B.E.2551 (2008), the Minister of Agriculture and Cooperatives hereby issues this Notification on the Establishment of Thai Agricultural Standard: Duck Egg as follows:

1. The Notification of the National Committee on Agricultural Commodity and Food Standards entitled Thai Agricultural Standard: Duck Egg dated 19 May B.E.2548 (2005) is repealed.
2. The Thai Agricultural Standard for Duck Egg (TAS 6703--2012) is established as a voluntary standard, details of which are attached herewith.

Notified on 2 October B.E.2555 (2012)

(Mr. Theera Wongsamut)

Minister of Agriculture and Cooperatives

# **THAI AGRICULTURE STANDARD**

## **DUCK EGG**

### **1. SCOPE**

1.1 This Thai Agricultural Standard covers duck eggs produced from layer ducks of *Anas platyrhucos* for direct consumption without processing affecting their crucial characteristics.

### **2. DEFINITIONS**

For the purpose of this standard:

2.1 Duck egg means an egg– in- shell produced by layer duck and of the characteristics of the breed

2.2 Egg yolk means an inner composition of the egg, round, natural color and floating in the middle of the egg white.

2.3 Egg white means 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.

2.4 Crack / Check means an egg which has a damaged outer shell such as broken or cracked shell but its shell membranes are not torn and the liquid, within, is not leaking out.

2.5 Air cell means an air space within the large end of an egg between the outer and the inner shell membranes.

2.6 Egg candling means an initial inspection of the egg shell and its interior quality through visual light.

### **3. QUALITY**

#### **3.1 General quality requirements**

Duck eggs for all grades, subject to the specific provisions for each grade and the tolerance allowed, shall be as follows:

##### **3.1.1 External characteristic**

- (1) Oval shape with one large end and a taper end;
- (2) The shell color shall be of its characteristics of the breed, clean, without stains and smooth all over;
- (3) Free from cracks or checks;
- (4) Free of visible mold when examined by naked eyes.

## 3.1.2 Internal characteristic

- (1) Free from inner cracks, when inspected by egg candling;
- (2) Air cell shall be small and fixed when the egg is twirled;
- (3) For the broken-out egg, the egg yolk shall not attach to the inner shell. It shall be firm and surrounded by the thick egg white;
- (4) The egg shall not be spoiled and free from abnormal odor;
- (5) The egg yolk shall have normal and consistent color. The egg white shall not be cloudy;
- (6) Free of visible mold, when examined by naked eyes.

## 3.2 Classification

Eggs shall be classified into three classes as shown in Table 1.

**Table 1 Classification of Duck Eggs:**

Items	Classes		
	AA	A	B
1. External characteristic			
1.1 Shell	Clean without stain	The same as Grade AA	Clean or may have slight stain of which total scattered stains shall not be more than 1/16 of the shell surface and localized stain shall be less than 1/32 of the shell surface and shall not be hard coating stain.
	Smooth surface, free from rough or ridges		The shell surface may be rough or ridges.
2. Internal characteristic			
2.1 Egg candling	The egg yolk shadow shows blurred edge and the egg yolk floats in the middle of the egg.	The egg yolk shadow shows clearer edge and the egg yolk floats closed to the shell.	- The egg yolk shadow shows clear edge and the egg yolk touches the shell.

Items	Classes		
	AA	A	B
	<p>Blood spots or meat spots are not found.</p> <p>Egg white; blood spots or meat spots are not found.</p> <p>Air cell shall not be higher than 0.3 cm.</p>	<p>Blood spots or meat spots are not found.</p> <p>Egg white; blood spots or meat spots are not found.</p> <p>Air cell shall not be higher than 0.5 cm.</p>	<p>Blood spots or meat spots may be found.</p> <p>Egg white; blood spots or meat spots may be found.<sup>1/</sup></p> <p>Air cell shall not be higher than 0.8 cm.</p>
2.2 Egg yolk <sup>2/</sup>	<p>Egg yolk is convex located in the middle of the thick egg white.</p> <p>Blood spots or meat spots are not found.</p> <p>Germinal disk on egg yolk is small and opaque white.</p>	<p>Egg yolk is convex.</p> <p>Blood spots or meat spots are not found.</p> <p>Germinal disk on egg yolk is small and opaque white.</p>	<p>Egg yolk is flattening.</p> <p>Blood spots and meat spots may be found.</p> <p>Germinal disk on egg yolk may be expanded, surrounding with white border doughnut-like shape.</p>
2.3 Egg white <sup>2/</sup>	<p>The thick egg white is viscous and bulging convex. The thin part is not flattening. Blood spots or meat spots are not found.</p>	<p>The same as AA. The thick egg white is less bulged.</p>	<p>The thick and the thin egg white are not firm, weak and watery and flattening. Blood spots and meat spots may be found.</p>

<sup>1/</sup> The blood spots and meat spots which may be found in egg yolk and egg white of Grade B shall be in combination not more than 0.3 cm in diameter.

<sup>2/</sup> Grading shall be determined according to the egg freshness (broken-out egg) based on the egg yolk and egg white appearances as illustrated in Fig.A.2.



## 4. SIZING

Size of duck egg shall be considered by weight per egg as follows:

**Table 2 Size of Duck Egg:**

Code	Size	Weight of egg (grams)
0	Jumbo	>80
1	Extra large	> 75 -80
2	Large	> 70 - 75
3	Medium	> 65 - 70
4	Small	> 60 - 65
5	Peewee	> 55 - 60

*Note: The classification of quality (Section 3) and sizing (Section 4) according to this standard may be combined to stipulate trade classification. Trade partners may name the trade classification differently depending on their requirements.*

## 5. Tolerance

The following tolerances in respect of quality, sizing and checks shall be allowed in each package for eggs not satisfying the requirements of the class indicated:

### 5.1 Quality tolerances

5.1.1 For Class AA, A is allowed to include not more than 15% of the total number of egg.

5.1.2 For Class A, B is allowed to include not more than 15% of the total number of egg.

5.1.3 For Class B, only eggs conforming to the requirements as of Class B.

### 5.2 Size tolerances

Eggs of all sizes may include the immediate smaller size not more than 3.4% of the total number of eggs.

### 5.3 Crack or Check tolerances

Crack or check due to transportation shall not exceed 3.4% of the total number of eggs.

Note:

Example for the calculation of 3.4% tolerance: 1 out of 30 eggs is allowed (if unit per package is less than 30, there shall be no tolerance on check and/or size).

## **6. PACKAGING**

6.1 The contents of each package shall be uniform in quality and size. The visible part of the contents of the package shall be representative of the entire contents.

6.2 The package shall be able to prevent damage affecting duck egg quality. The materials used inside the package shall be clean. The use of materials, particularly paper or stamps bearing trade specifications is allowed, provided that the printing or labelling has been done with non-toxic ink or glue.

6.3 Consumer package shall be new, of quality, hygienic and free of any foreign matter and smell. They shall be durable against handling, transporting and maintaining egg's quality to the final destination.

## **7. MARKING AND LABELLING**

### **7.1 Consumer packages**

The following information shall appear on package, wrapping material, fastening material or tag. They shall be easily and clearly visible without false or deceptive information.

(1) Name of the produce

To be labeled as "Duck Egg"

(2) Class

(3) Code and/or Size;

(4) Net weight (grams or kilograms)

(5) Number of eggs per package

(6) Information of producer and/or distributor

Indicate name and address of the producers, re-packers or distributors. Name and address of head office of producer or re-packer may be provided. For imported produce, the importer name and address shall be indicated.

(7) Source of produce;

Indicate country of production, except for domestic market.

(8) Date of packaging and/or best before date

(9) Lot number

(10) Instruction for storage and transportation.

The packages should have the wording "Fragile".

(11) Language

In case of domestic or imported produce for sale in the country, label shall be in Thai and foreign language is optional. In case of exported produce, label can be in foreign language.

## 7.2 Non-retail packages .

The following information shall be specified in the accompanied documents, on the label or package. They shall be legible, indelible and not be false or deceptive information:

(1) Name of the produce:

To be labeled as “Duck Egg”

(2) Class

(3) Code and/or Size;

(4) Net weight (grams or kilograms);

(5) Number of eggs per package

(6) Information of producer and distributor

Indicate name and address of the producers, re-packers or distributors and identification code (if any). Name and address of head office of producer or re-packer may be provided. For imported produce, the importer’s name and address shall be indicated.

(7) Source of produce;

Indicate country of production, except for domestic market.

(8) Date of packaging and/or best before date

(9) Lot number

(10) Instruction for storage and transportation.

The packages should have the wording “Fragile”.

(11) Language

In case of domestic or imported produce for sale in the country, label shall be in Thai and foreign language is optional. In case of exported produce, label can be in foreign language.

## 7.3 Certification mark

The use of certification mark shall comply with the Ministerial Regulation B.E. 2553 (2010) on Provisions concerning, the Characteristic of Mark, Application and Display, and the relevant Notifications of the National Bureau of Agricultural Commodity and Food Standards.

## 8. CONTAMINANTS

Contaminants in duck egg shall comply with the relevant laws and regulations.

## 9. PESTICIDE RESIDUES

Pesticide residues in duck egg shall comply with the relevant laws and regulations and the requirements according to the Thai Agricultural Standards on Pesticide Residues: Maximum Residues Limits (TAS 9002) and Pesticide Residues: Extraneous Maximum Residues Limits (TAS 9003).

## 10. VETERINARY DRUG RESIDUES

Veterinary drugs residues shall comply with the relevant laws and regulations.

## 11. HYGIENE

11.1 Production, packaging, storage and transportation of duck egg shall follow –hygienic practices so as to prevent contamination that may be harmful to consumers and comply with TAS 6910 entitled Code of Practice: Good Manufacturing Practices for Egg Collection Center.

11.2 Microbiological requirement: *Salmonella spp.* shall not be found in 25 g of sample.

11.3 Eggs that required to store more than one week shall be kept in a refrigerator or a room with controlled temperature between 10°C - 13°C (50°F -55°F) and relative humidity of 70-85%.

11.4 Transport vehicle shall be provided with hygienic ventilation and able to prevent the access of pests and water leaked into the loading section. The transport vehicle shall be able to prevent filth contacting egg shells and to clean and disinfect easily and efficiently.

11.5 For long transportation, the loading section of the transport vehicle should be provided with a cooling system or additional measures for better ventilation. If cooling system is not used, eggs shall be prevented from direct sunlight. In case where cooling system is used, care should be taken to prevent egg sweating due to rapid changes in temperature.

11.6 Before and after transportation, the transport vehicle shall be cleaned immediately to eliminate foreign odor with disinfectants and dried. The disinfectant used shall be registered with the relevant competent authorities.

## 12. METHOD OF ANALYSIS AND SAMPLING

12.1 Methods of analysis of egg quality shall be indicated in Table 3

12.2 Sampling methods shall comply with the provisions of the relevant laws and requirements according to the Thai Agricultural Standard pertaining to Sampling Method

**Table 3** Methods of analysis

Requirements	Methods	Principles
1. General Quality (Section 3.1.1-3.1.2)	Inspection of the general appearance	Visual inspection
2. Shell (Section 3.2)	Inspection of the shell	Visual inspection
3. Interior quality (section 2.1)	Agricultural Handbook No.75, Egg-grading manual, United States Department of Agriculture (USDA) pp 31-32 or equivalent methods	Lighting through the object

Requirements	Methods	Principles
(section 2.2-2.3)	Agricultural Handbook No.75, Egg-grading manual, United States Department of Agriculture (USDA) pp 34-35 or equivalent methods	Visual inspection
4. Size (Section 4)	Weighing	Gravimetry
5. Microorganisms (Section 11.2) - Salmonella	Bacteriological Analytical Manual U.S. Food & Drug Administration (USFDA), Chapter 5 or equivalent methods	Pour Plate

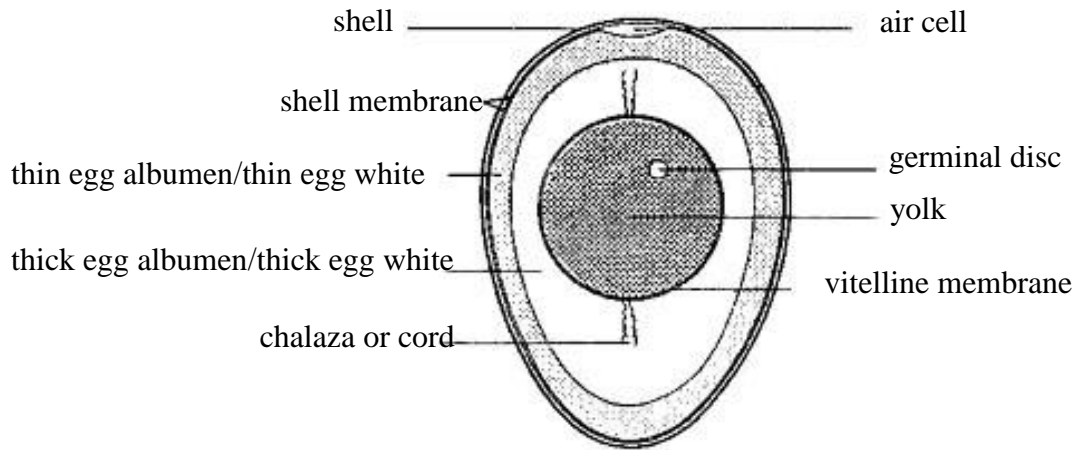
**ANNEX A**

Figure A.1. Illustration of duck egg

**A.2 Haugh Unit (H.U.)**

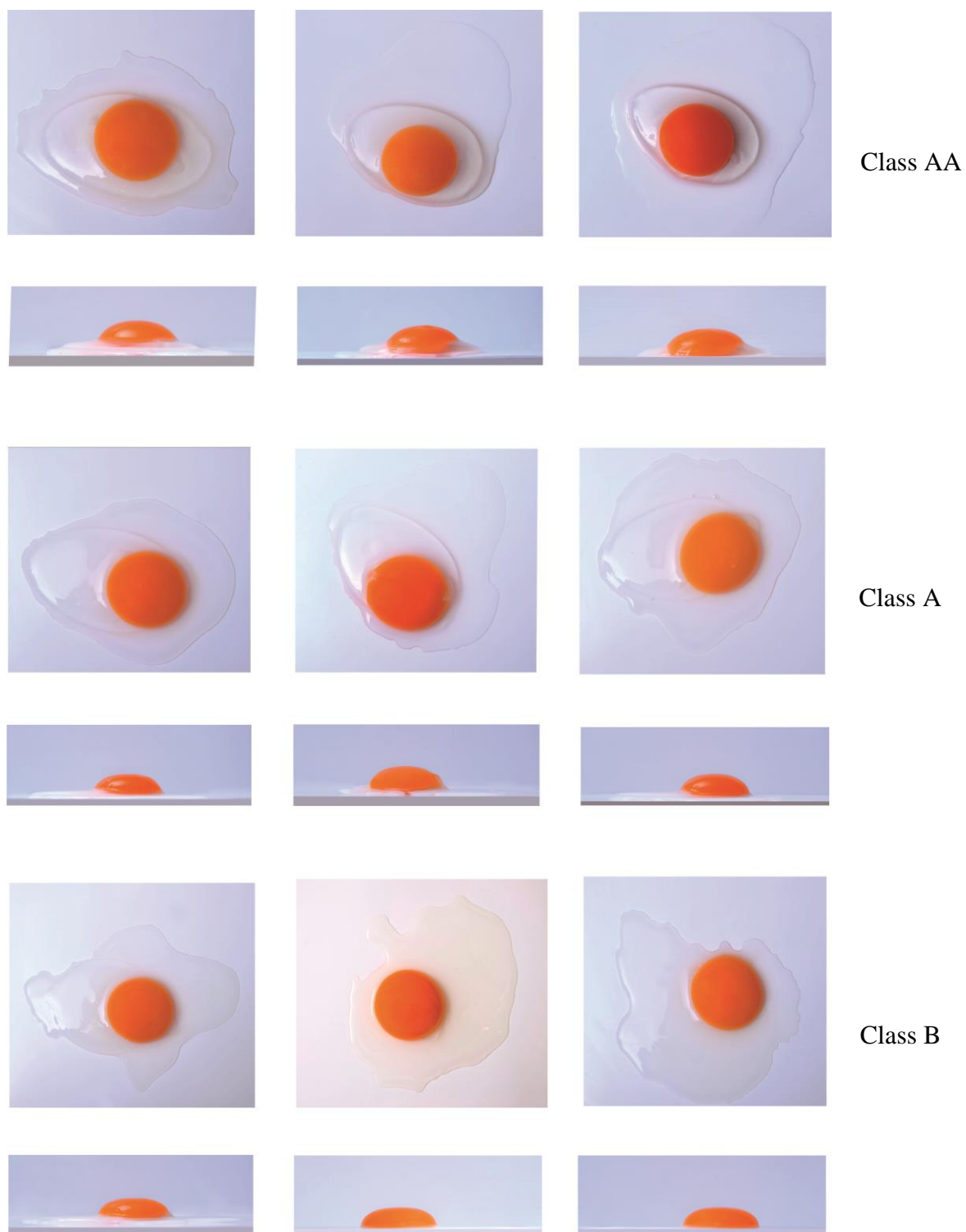
H.U. value is used to measure freshness of egg and provided as additional useful information. It is, therefore, not part of the requirements as of Table 3 (Internal characteristic).

For determination freshness of egg, suggested H.U. values at the temperature of 45°F – 60°F are as follows:

Class AA  $\geq 72$

Class A = 60 – 71

Class B < 60



**Fig A.2 Classification according to egg yolk and egg white**

**ANNEX B****UNIT**

The units and symbols used in this standard and the units recognized by the International System of Units or (Le Système International d'Unités) or SI are as follows:

Measurement	Unit	Symbol
Mass	gram	g
	kilogram	kg
Length	centimeter	cm
Temperature	degree Celsius	°C