Sources of hatching eggs

- Hatchery owns the breeder hens
- Contract flock owners
- Egg stations
- Hatching egg dealers
- Other hatcheries supply eggs

Care of hatching egg

- Gather eggs frequently
- Place small ends down
- Use approved cases
- Handle egg gently
- Protect eggs from cold
- Deliver on schedule

Selection of hatching eggs

1. Cleanliness of egg shell

Clean eggs hatch better than soiled eggs. Eggs which have a large part of their surface covered with broken egg material or any other substance that seals the shell will not hatch.

2. Egg size

Within a given group of eggs the very small ones and the extremely large ones do not hatch well as do those of normal size.

3. Shell

3.1 Colour

The density of the pigment in brown-shelled eggs is often correlated with hatchability. When a group of brown-shelled eggs from a single flock of birds is being hatched, those with darker shells will hatch better than those with lighter shell eggs.

3.2 Strength

The quality of the shell is related with hatchability. Eggs possessing strong shells hatch best whereas eggs with thin shells do not generally hatch well.

3.3 Inperfection

Eggs closest to ovoid shape hatch best. Excessively long, thin or completely round eggs do not hatch well. Mang eggs have shell imperfections such as ridge, pointed ends etc. do not hatch satisfactorily.

3.4 Thickness

Egg shell thickness is important to hatchability. For best hatchability, egg shell should be between to 0.33 to 0.35 mm in thickness.

4. Interior quality

4.1 Tremulous air cells

Some eggs are laid with tremulous air cells; others incur them later through jarking and improper handling. These air cells present one of the greatest depressions of hatchability.

4.2 Haugh Units

The higher the reading of Haugh units, the better the hatchability of eggs. Best hatches are secured when the Haugh units of fresh eggs are 80 or over.

4.3 Meat spot, Blood spot or bloody eggs

Eggs having meat spot, blood spot do not hatch well.

5. Age

Best hatches are obtained when th age of egg is 3 to 4 days.

The **Haugh unit** is a measure of egg protein quality based on the height of its egg white (albumen). The test was introduced by Raymond Haugh in 1937 and is an important industry measure of egg quality next to other measures such as shell thickness and strength.

An egg is weighed, then broken onto a flat surface (breakout method), and a micrometer used to determine the height of the thick albumen (egg white) that immediately surrounds the yolk. The height, correlated with the weight, determines the Haugh unit, or HU, rating. The higher the number, the better the quality of the egg (fresher, higher quality eggs have thicker whites). Although the measurement determines the protein content and freshness of the egg, it does not measure other important nutrient contents such as the micronutrient or vitamins present in the egg.

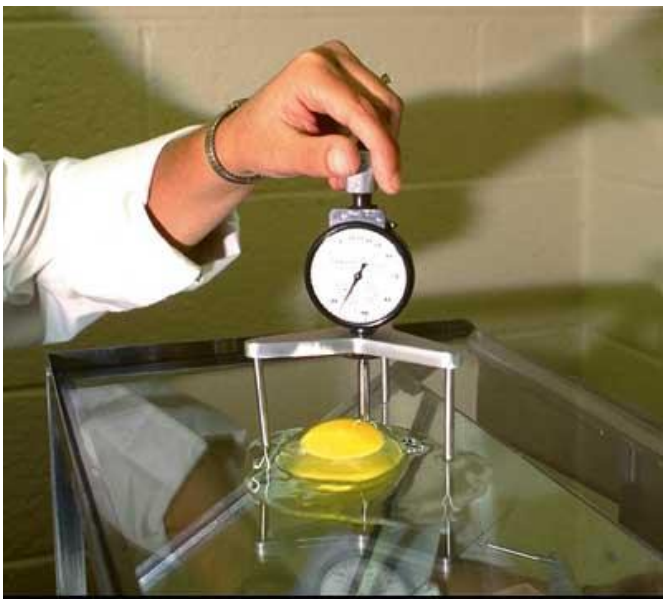
Formula

The formula for calculating the Haugh unit is:

$$HU = 100 * log(h - 1.7w^{0.37} + 7.6)$$

Where:

- HU = Haugh unit
- h = observed height of the albumen in millimeters
- w = weight of egg in grams



Preparing eggs for incubation

There are three aspects to the preparation of the eggs for incubation:

Selection,

Cleaning,

Storage.

Selection of eggs for hatching

The eggs of different poultry breeds vary in weight from 30 to 70 grams. Best hatching results are obtained by using normally sized eggs from good quality layers (hens that lay well). By taking care to use eggs from good stock, good quality chicks will be obtained, as the qualities of the hen are passed on through her eggs.

To hatch out a chick an egg must of course have been fertilised. There is no proven method of determining whether a fresh egg has been fertilized or not. It is therefore important to keep a good fertile cockerel with the hens. One cock can serve several hens, with best results being achieved with 10 hens per cock. After service by a fertile cock a hen will produce fertilised eggs for a period of at least eight days. If you are using a heavy breed, you may need to keep fewer hens per cock.

Never use odd-shaped eggs for incubation (too long, too short, misshapen), as their contents will also be abnormal. The egg shell is also an important factor. There should be no cracks, as moisture will be lost during incubation. Dried-out eggs will produce either weak or dead chicks. Avoid using eggs whose shell is contaminated with pieces of eggshell and feed. These will block the pores in the shell and block the chick's access to fresh air. Try to use eggs from several different hens in order to reduce the risks of failure.

Remove and discard eggs unsuitable for hatching. These are:

- Dirty
- Cracked
- Small (According to Hatchery Policy)
- Very large or double yolk
- Poor shells - but any shell color should be acceptable for hatching
- Grossly mis-shapen

Blood stained

Cracked

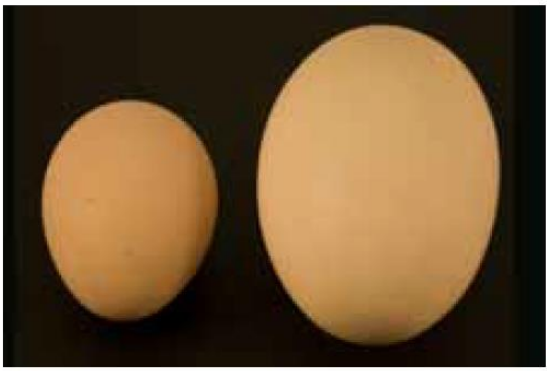
Dirty

Elongated

Rounded

Toe punched

Wrinkled



Small and double

Cleaning the eggs

Eggshell is porous - air and water can pass through it. Dirt and disease-bearing organisms can also slip through the eggshell. Reduce the risk of disease by using clean eggs. Never use very dirty eggs for hatching, and it they are soiled clean them with a dry cloth. Do not wash eggs in water. Water will open up the pores and give poorer hatching results.

Storage

If possible, use fresh eggs for hatching. Eggs to be stored should be kept in a cool place. At 20°C it is possible to store eggs for three days. Eggs for hatching should be collected twice a day and cooled off as quickly as possible. This is especially important when the weather is warm. The optimal level of relative humidity for storing hatching eggs is 70 - 85%. If you find mould on your eggs, the humidity is too high. Never use mouldy eggs for hatching. All poultry eggs should be stored with the air space inside the eggs (the air pocket.) uppermost.

Guidelines for handling hatching eggs

- Collect hatching eggs from the laying sites twice a day.
- Select the best eggs. Take into account the size of the eggs, their shape, the cleanliness and condition of the shell, and the breed of hen you wish to obtain.
- Only use fresh eggs. If you want to hatch a lot of eggs together, you can use eggs of up to 14 days old, provided they have been stored at 10 - 16°C.
- Clean dirty eggs with a dry cloth.
- Always place the eggs with the air pocket at the top.
- Any eggs stored at 10 - 16°C should be kept at 21 - 25°C for 12 hours before being transferred to the incubator.