Basic Egg Facts

BASIC EGG FACTS

BLOOD SPOTS

Also called meat spots. Occasionally found on an egg yolk. Contrary to popular opinion, these tiny spots do not indicate a fertilized egg. Rather, they are caused by the rupture of a blood vessel on the yolk surface during formation of the egg or by a similar accident in the wall of the oviduct. Less than 1% of all eggs produced have blood spots.

Mass candling methods reveal most eggs with blood spots and those eggs are removed but, even with electronic spotters, it is impossible to catch all of them. As an egg ages, the yolk takes up water from the albumen to dilute the blood spot so, in actuality, a blood spot indicates that the egg is fresh. Both chemically and nutritionally, these eggs are fit to eat. The spot can be removed with the tip of a knife, if you wish.

CARTON DATES

Egg cartons from USDA-inspected plants must display a Julian date - the date the eggs were packed. Although not required, they may also carry an expiration date beyond which the eggs should not be sold. In USDA-inspected plants, this date cannot exceed 30 days after the pack date. It may be less through choice of the packer or quantity purchaser such as your local supermarket chain. Plants not under USDA inspection are governed by laws of their states.

JULIAN DATES

Starting with January 1 as number 1 and ending with December 31 as 365, these numbers represent the consecutive days of the year. This numbering system is sometimes used on egg cartons to denote the day the eggs are packed. Fresh shell eggs can be stored in their cartons in the refrigerator for 4 to 5 weeks beyond this date with insignificant quality loss.

COLOR

Egg shell and yolk color may vary, but color has nothing to do with egg quality, flavor, nutritive value, cooking characteristics or shell thickness.

- **Shell**
  The color comes from pigments in the outer layer of the shell and may range in various breeds from white to deep brown. The breed of hen determines the color of the shell. Breeds with white feathers and ear lobes lay white eggs; breeds with red feathers and ear lobes lay brown eggs. White eggs are most in demand among American buyers. In some parts of the country, however, particularly in New England, brown shells are preferred. The Rhode

Island Red, New Hampshire and Plymouth Rock are breeds that lay brown eggs. Since brown-egg layers are slightly larger birds and require more food, brown eggs are usually more expensive than white.

- **White**
  Egg albumen in raw eggs is opalescent and does not appear white until it is beaten or cooked. A yellow or greenish cast in raw white may indicate the presence of riboflavin. Cloudiness of the raw white is due to the presence of carbon dioxide which has not had time to escape through the shell and thus indicates a very fresh egg.

  On very rare occasions, a hard-cooked egg white may darken to a caramel shade due to a high amount of iron in the cooking water or to a carbonylamine-type reaction. Using fresh eggs and cooling them quickly after cooking helps to prevent this darkening.

- **Yolk**
  Yolk color depends on the diet of the hen. If she gets plenty of yellow-orange plant pigments known as xanthophylls, they will be deposited in the yolk. Hens fed mashes containing yellow corn and alfalfa meal lay eggs with medium yellow yolks, while those eating wheat or barley yield lighter-colored yolks. A colorless diet, such as white cornmeal produces almost colorless yolks. Natural yellow-orange substances such as marigold petals may be added to light-colored feeds to enhance yolk color. Artificial color additives are not permitted. Gold or lemon-colored yolks are preferred by most buyers in this country. Yolk pigments are relatively stable and are not lost or changed in cooking.

  Sometimes there is a greenish ring around hard-cooked egg yolks. It is the result of sulfur and iron compounds in the egg reacting at the surface of the yolk. It may occur when eggs are overcooked or when there is a high amount of iron in the cooking water. Although the color may be a bit unappealing, the eggs are still wholesome and nutritious and their flavor is unaffected. Greenish yolks can best be avoided by using the proper cooking time and temperature and by rapidly cooling the cooked eggs.

  Occasionally several concentric green rings may be seen in hard-cooked egg yolks. A yolk develops within the hen in rings. Iron in the hen's feed or water as the rings are formed may cause this coloring.

  Sometimes a large batch of scrambled eggs may turn green. Although not pretty, the color change is harmless. It is due to a chemical change brought

on by heat and occurs when eggs are cooked at too high a temperature, held for too long or both. Using stainless steel equipment and low cooking temperature, cooking in small batches and serving as soon as possible after cooking will help to prevent this. If it is necessary to hold scrambled eggs for a short time before serving, it helps to avoid direct heat. Place a pan of hot water between the pan of eggs and the heat source.

FERTILE EGGS

Eggs which can be incubated and developed into chicks. Fertile eggs are not more nutritious than non-fertile eggs, do not keep as well as non-fertile eggs and are more expensive to produce. Fertile eggs may contain a small amount of male hormone, but there are no known advantages.

FREE-RANGE EGGS

True free-range eggs are those produced by hens raised outdoors or that have daily access to the outdoors. Due to seasonal conditions, however, few hens are actually raised outdoors. Some egg farms are indoor floor operations and these are sometimes erroneously referred to as free-range operations. Due to higher production costs and lower volume per farm, free-range eggs are generally more expensive. The nutrient content of eggs is not affected by whether hens are raised free-range or in floor or cage operations.

FRESHNESS

How recently an egg was laid has a bearing on its freshness but is only one of many factors. The temperature at which it is held, the humidity and the handling all play their part. These variables are so important that an egg one week old, held under ideal conditions, can be fresher than an egg left at room temperature for one day. The ideal conditions are temperatures that don't go above 40°F (4°C) and a relative humidity of 70 to 80%.

Proper handling means prompt gathering, washing and oiling of the eggs within a few hours after laying. Most commercially produced eggs reach supermarkets within a few days of leaving the laying house. If the market and the buyer handle them properly, they will still be fresh when they reach the table.

It is not true that freshness can be judged by placing an egg in salt water. A carefully controlled brine test is sometimes used to judge shell thickness of eggs for hatching purposes but has no application to freshness of table eggs.

How important is "freshness"? As an egg ages, the white becomes thinner and the yolk becomes flatter. These changes do not have any great effect on the nutritional quality of the egg or its functional cooking properties in recipes. Appearance may

be affected, though. When poached or fried, the fresher the egg, the more it will hold its shape rather than spread out in the pan. On the other hand, if you hard cook eggs that are at least a week old, you'll find them easier to peel after cooking and cooling than fresher eggs

ORGANIC EGGS

Eggs from hens fed rations having ingredients that were grown without pesticides, fungicides, herbicides or commercial fertilizers. No commercial laying hen rations ever contain hormones. Due to higher production costs and lower volume per farm, organic eggs are more expensive than eggs from hens fed conventional feed. The nutrient content of eggs is not affected by whether or not the ration is organic.

EGG TRIVIA

EGG HISTORY

- Europe has had domesticated hens since 600 B.C.
- Chickens came to the New World with Columbus on his second trip in 1493.
- Eggs were colored, blessed, exchanged and eaten as part of the rites of spring long before Christian times.
- While it is customary to throw rice at weddings in many countries, French brides break an egg in the threshold of their new home before stepping in – for luck and healthy babies.
- At the time of the French Revolution, the clever French already knew 685 different ways of preparing eggs (including, of course, the omelet).

EGG PRODUCTION

- About 280 million laying hens produce some 60 billion eggs each year in the United States. That's roughly one hen for every man, woman, and child in the country.
- There are now 200 breeds of chickens.
- White shelled eggs are produced by hens with white feathers and ear lobes. Brown shelled eggs are produced by hens with red feathers and red ear lobes. There is no difference in taste or nutrition between white and brown eggs.
- An average hen lays 300 to 325 eggs a year. A hen starts laying eggs at 19 weeks of age.
- A lot goes into an egg. The hen must eat 4 pounds of feed to make a doze eggs (1<< lbs.)
- To produce one egg, it takes a hen 24-26 hours, and to do so, she requires 5 oz. of food and 10 oz. of water. Thirty minutes she starts all over again.
- Occasionally, a hen will produce double-yolked eggs throughout her egg-laying career. It is rare, but not unusual, for a young hen to produce an egg with no yolk at all.
- Artificial color additives are not permitted in chicken feed. Yolk color depends on the diet of the hen. Feed containing yellow corn or alfalfa produces medium yellow yolks while feed containing wheat or barley produces lighter color yolks. Natural yellow-orange substances such as marigold petals may be added to light colored feeds to enhance the yolk color.
- During the packing process, eggs are separated by size. Minimum weights per dozen are:
    - Jumbo - 30 ounces

    - Extra large - 27 ounces
    - Large - 24 ounces
    - Medium - 21 ounces
    - Small - 18 ounces
    - Pee Wee - 15 ounces
- As a hen grows older, she produces larger eggs.
- Did you know a mother hen turns over her egg about fifty times per day so that the yolk won't stick to the sides of the shell?

EGG HANDLING

- The egg shell may have as many as 17,000 tiny pores over its surface. Through them, the egg can absorb flavors and odors. Storing eggs in the carton helps keep them fresh.
- Eggs are placed in their cartons large end up to keep the air cell in place and the yolk centered.
- Eggs age more in one day at room temperature than in one week in the refrigerator.
- Eggs can be kept refrigerated in their carton for at least 4 to 5 weeks beyond the pack date.
- A hard-cooked egg will peel more easily if it is a week or two old before it is cooked.
- To tell if an egg is raw or hard-cooked, spin it! If the egg spins easily, it is hard-cooked, but if it wobbles, it is raw.
- A cloudy with is a sign of freshness, not age, because of high carbon dioxide content put in when the egg is laid.
- If an egg is accidentally dropped on the floor, sprinkle it heavily with salt for easy clean up.
- If a greenish ring around a hard-cooked egg yolk is due to either overcooking or a high iron content in the cooking water. This can be avoided using proper cooking time and temperature, and by rapidly cooling the cooked egg.
- In cooking, eggs are "the cement that holds the castle of cuisine together" because of their ability to bind, leaven, thicken, emulsify, clarify, and more in all types of recipes.
- The egg yolk and white separate best when cold.
- Egg whites will beat to a better volume if they're allowed to stand at room temperature for 20 to 30 minutes before whipping.
- The stringy piece of material in the egg is not an embryo but rather a special protein called chalazae which acts as a shock absorber for the yolk so it doesn't break.

EGG NUTRITION

- Eggs contain the highest quality protein you can buy. Egg protein has just the right mix of essential amino acids needed by humans to build tissues. In addition, eggs have thirteen essential vitamins and minerals.
- Eggs contain the highest quality food protein know. It is second only to mother's milk for human nutrition.
- Egg yolk is the major source of egg's vitamins and minerals.
- A large egg contains only 75 calories and 5 grams of fat.
- Egg yolks are one of the few foods that naturally contain vitamin D.
- Eggs have no vitamin C because the chick can produce it from food it eats.

EGG-CETERA

- The largest single chicken egg ever laid weighed a pound with a double yolk and a double shell.
- The most expensive egg ever sold was the Faberge "Winter Egg" sold in 1994 for $5.6 million.
- During the spring (vernal) equinox (about March 23), it is said that an egg will stand on its small end. Although some people have reported success, it is not known whether such results were due to the equinox or to the peculiarities of that particular egg.
- The entire month of May is declared "National Egg Month". This is the time of the year to celebrate the many benefits of the egg.
- American Egg Board's Howard Helmer, Omelet King, topped existing Guinness Book of World records for omelet making in 1990. He emerged with 427 two-egg omelets in 30 minutes.

Modified from the Egg Nutrition Center