

A Review: Scientific Terminology An Egg As Vegetarian

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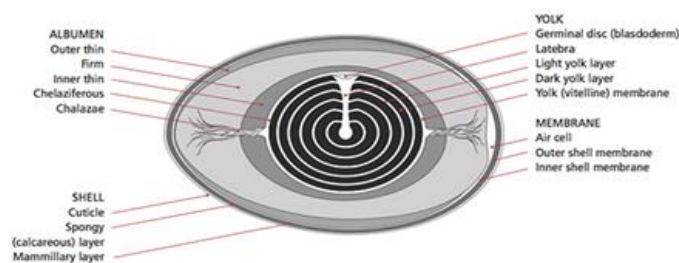
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Abstract- The objective of this article is to present an update on science behind eggs and vegetarianism. Recently COVID-19 positive patients in recovery are offered eggs with their daily meals. As egg is superfood for boosting immunity. Even though there is a broad misconception that eating eggs on daily basis is not so good for cholesterol, eggs contain animal flesh etc. Consuming eggs regularly is an antidote for your immune system. In general the term vegetarian refers to someone who doesn't eat certain animal products. It is very important fact should be known to each and everyone that eggs do not contain any flesh. In our society eggs are not considered as a vegetarian friendly food. If an egg was fertilised as a result of hen and roosters mating, thus giving it a chance to become a chicken. But if the hen is kept away from rooster an unfertilized egg is obtained which is not at all have power of life. This review article explores and concentrates on vegetarianism of eggs have the possible reason and science behind it.

Keywords- Egg, vegetarianism, types, reproduction, fertilized and unfertilized.

I. INTRODUCTION

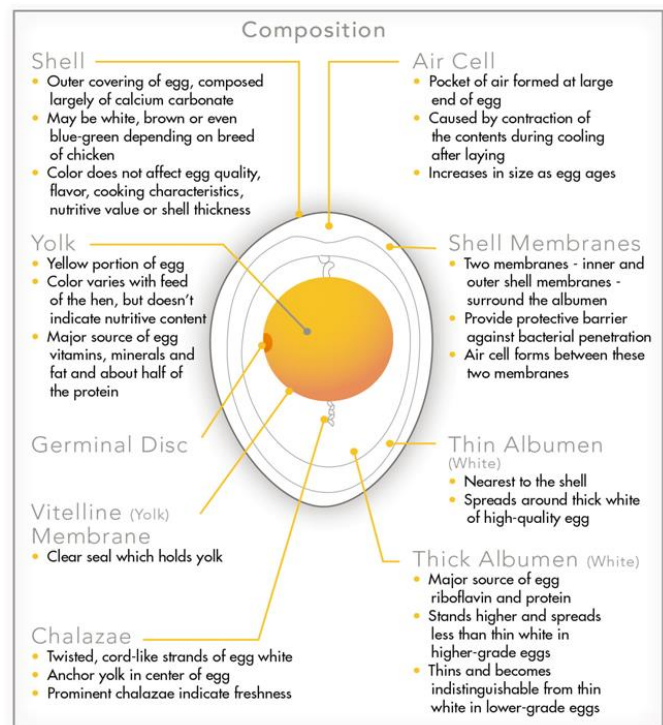
An animal reproductive body consisting of an ovum together with its nutritive and protective envelopes and having the capacity to develop into a new individual capable of independent existence. An egg is the hard shelled reproductive body produced by a bird and especially by the common domestic chicken.



Egg consist of egg shell, albumen(egg white), yolk, membranes (inner& outer) envelopes, chalazas, air cell,

spongy layer, cuticle, germinal disc (blastoderm), mammillary layer.

Functions-



HEN REPRODUCTION

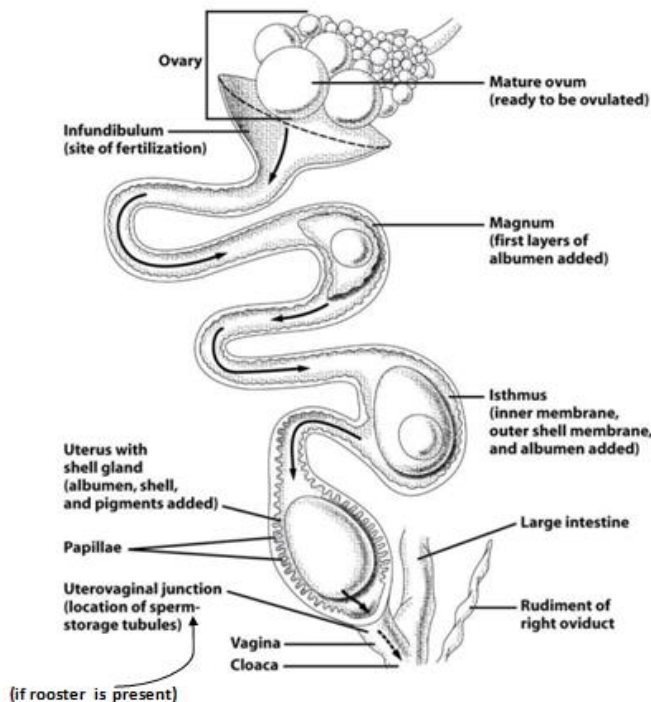
Reproduction is the production of offspring by an organised bodies. The reproductive system of the female chicken is in two parts-The ovary and oviduct. Most female animals which have two functioning ovaries, the chicken(hen) has only one. An ovary is a cluster of sacs attached to the hens back about midway between the neck and the tail. The oviduct is a tube like organ lying along the backbone between the ovary and tail. In a mature hen it is approximately 25 to 27 inches long

- The right ovary stops developing when the female chick hatches, but the left one continues to mature.
- An ovary is fully formed when the chicken hatches and contains several thousand of tiny ova and each ovum within its own follicle. As the female reaches

its maturity, these ova develop into yolks after few time.

- On the surface of every egg yolk there it can be seen a tiny, whitish spot called the blastodisc. This contains a single female cell.
- The yolk is completely formed in the ovary. When a yolk is fully developed, its follicle ruptures, releasing it from the ovary. When yolk enters the infundibulum in the presence of sperm, a single sperm penetrates into the blastodisc, getting fertilized it and the blastodisc turns into a blastoderm.
- Scientifically the blastoderm is the true egg. After fertilization, the blastoderm begins to divide into 2, 4, 8 and more cells. The first stage of embryonic development have begun and continue until the egg is laid.
- When sperm and ova unite, this process is called fertilization. Development then subsides until the egg is incubated After fertilization, the egg can develop and become a chick. Only fertilized eggs grow into chicks.
- All the other parts of the egg are added to the yolk as it passes through the oviduct. The chalazae, albumen, shell membranes, and shell are formed around the yolk to make the complete egg, which is then laid.

The cycle which requires a more than 24 hours and the process repeats after 30mins .



VEGETARIANISM

Vegetarianism is the practice to stop from the consumption of meat and muscles. It may also includes abstention from by-products of animal slaughter.

Vegetarians are classified into five groups –

- 1) Vegans:- They eat plant-based foods and avoid anything with animal proteins or animal by-products.
- 2) Lacto-vegetarians:- They eat plant foods, as well as dairy products.
- 3) Lacto-ovo vegetarians:- These vegetarians have plant foods, dairy products, and eggs.
- 4) Semi- or partial vegetarians:- They eat plant foods and may have chicken or fish, dairy products, and eggs. However, they don't eat meat.
- 5) Pescatarians:- They have plant foods and seafood.

Scientific approach

Unfertilized egg :-

An unfertilized egg is **an ovum, which has not been fused with a male gamete (sperm)**. It is always haploid and only one set of chromosomes is found in it. Because of the absence of fertilization, an unfertilized egg never produces a diploid offspring by sexual reproduction.

Hen layone egg daily as per cycle if the rooster is not mated then an egg was not fertilized and never going to become an animal, it would be considered vegetarian and thought of as an animal by-product along with milk and butter. Scientifically and technically it is not an animal flesh, eggs are usually thought of as vegetarian. Eggs that have been fertilized and therefore have the potential to become an animal may not be considered vegetarian.

Most commercially produced eggs at the grocery store are unfertilized. Some religions that encourage vegetarian eating may not view eggs as strictly vegetarian and therefore prohibit them.

An example- Milk has a molecular structure and DNA that is found only in animals. This makes it non vegetarian by origin. Just like eggs, milk contains 'Animal fats' so when you consume milk, you are in effect consuming an animal or a part of it. Milk contains 9 essential amino acids, vitamins B12, and cholesterol. **According to science**, it is blood that- via various biochemical reactions get converted to milk. Indeed, the presence of blood (and pus cells) has been detected in milk samples under specific laboratory conditions. Logically speaking, the well accepted terminology for milk

'lacto vegetarian '. In the same way terminology of egg is 'Lacto-ovo- vegetarians '.

IDENTIFICATION OF FERTILISED AND UNFERTILISED EGG-

1)

•**In an unfertilized egg** for the germinal disc (blastodisc), a white spot floating above the surface of the yolk. The germinal disk of a sterile egg contains only the hen's cells and is fully white in colour.

•**In a fertilized egg**, the germinal disk (blastoderm) contains the fused female and male cells. These will divide and multiply, which leads to the development for a chick embryo. A fertilized germinal disk looks like a tiny white bulls eye a white ring with a clear center in between.

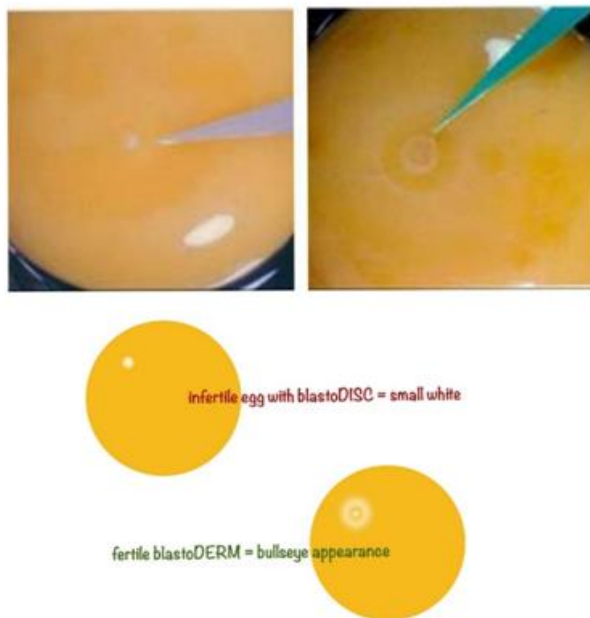


FIG- identification of fertilized and unfertilized egg yolk.

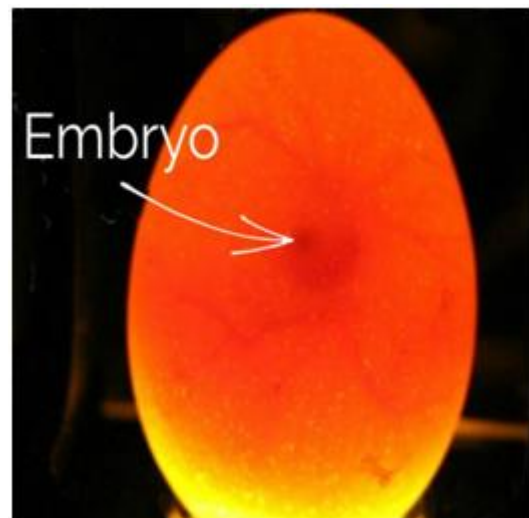
2) **Candling-**

Candling is a method which is used in an embryology to study which eggs are fertilized and how each embryo is developing and can identify unfertilized eggs too. The method uses a bright light source behind the egg to show details through the shell, Just by shining a bright light next to the egg and looking for specific features inside the shell.

In an unfertilized egg yolk (dark spot) towards the top of the egg, and transparent colour from middle to till bottom of it.



In fertilized egg there is a network of blood vessels which is an embryo. We can even observe the dark eyes of embryo spotted. These are both tell-tale signs that the egg is a winner. We can observe the development of an embryo.



II. CONCLUSION

Eggs are one of the few foods that should be classified as "superfoods". They are loaded with nutrients, some of which are rare in the modern diet. Laying eggs to a chicken is similar to the menstrual cycle for a woman. This means that hens do not need to be pregnant to lay eggs. It's very important to know the fact behind it because it contains nutritive benefits good for our health. An unfertilized according to research eggs are very much vegetarian. Many people have reasoned that eggs are non vegetarian since they come from a hen a living thing. Scientifically explained that there are three parts of the egg – eggshell, egg yolk, and egg white. The egg whites (albumen) only contains protein and the egg yolk is mostly made up of proteins, cholesterol, and fat, many terminologies and techniques are been researched and further will seen to clear all terms and facts. The eggs that we

consume on almost a daily basis do not have embryos. This means that the eggs probably have not developed enough to be at the stage where one would be eating an actual animal/bird.

Once a hen is 6-months-old, it lays eggs every one to one and a half days. However, it isn't necessary for the hen to mate before laying her eggs. These eggs are known as unfertilised eggs. The eggs that we buy from the local markets are also mostly unfertilised and lacto-ovo-vegetarians includes it in meals. Strictly vegetarians can avoid if they do not include animal products in meals.

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