

THE IMPACT OF THE NUTRITIOUS VALUE AND QUALITY OF THE EGGS IN THE HUMAN ALIMENTATION

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Abstract

In the current work we have tried to emphasize the alimentary importance of the eggs destined to human consumption and of the way of processing them , a way that strongly influences the digestion factor, which in certain cases may turn to indigestion and which could also end up in having no nutritional value. The egg must not be eaten raw because the white contains a protein called avidin which stops the absorption of biotin, a vitamin that belongs to the B vitamin complex essential for the metabolism of lipids and proteins. All these factors support the idea that a healthy person's diet and alimentation must be made up, from a nutritional point of view, through associating more kinds of food, in order to satisfy the bio catalytic, plastic and energetic needs of the body and in order to prevent the risks of getting sick by consuming unhealthy food products.

Key words: natural nutrition, ecological food, food safety

INTRODUCTION

From the variety of processed and non-processed food products we have chosedn to study the egg and the egg products because it is rich in nutritious factors essential for the health of the body and because it has an excellent alimenatry value for any human consumer. The egg is and has been the mostly used animal origin food having a very stable composition in what its major components are concerned and which can be improved in nutrients that are highly looked for in the human nutrition like: essential fat acids (EFA), anti oxidizers, and vitamins.

Starting from these assertions and after many nutritional and toxicological studies the aim of this study was to determine and to analyze some risk factors upon the human health when consuming unhealthy, toxic or non-hygienic food because the nutritious quality, the hygiene and the lack of fakes define the consumption estate or the sanitation of the respective food.

MATERIAL AND METHOD

The determinations related to the nutritional quality of the food products refer to the content and the quality of the non-caloric and caloric nutritious

factors being represented by the analysis and the proportion of the egg's components, by the determination of the content in proteins, lipids and carbohydrates, by the determination of the egg's age through measuring its density and by comparing this value with the one of a very fresh egg – considered a standard of reference and by appreciating the eggs' freshness estate by determining the refraction index of the white and of the yolk.

1. The determination of the eggs' age through measuring their density has been realized by preparing 5 solutions of sodium chloride and by measuring their density, conventionally marked as solutions A, B, C, D, E (figure1). The solutions have been prepared using 1000 ml of water.

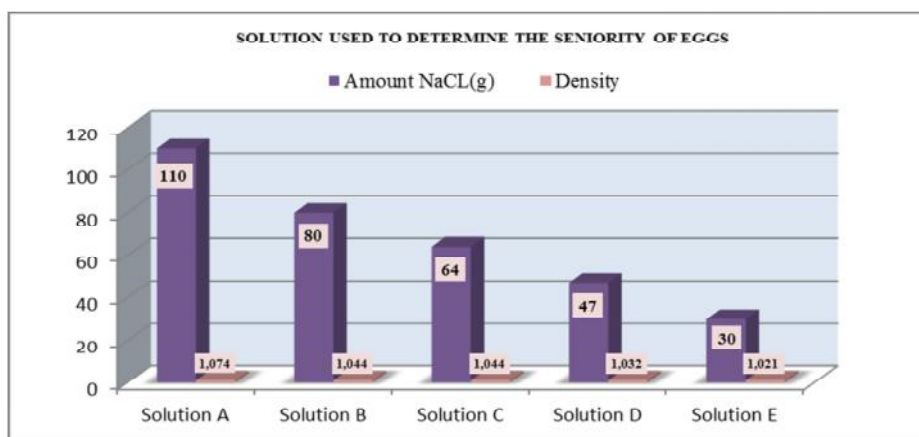


Fig. 1. Solution used to determine the seniority of eggs

We have chosen 25 clean eggs, 5 eggs for each of the five A,B,C,D,E solutions, of a uniform size and the eggs being 4 days old being considered very fresh, then we had 14 days, 24 days, 34 days and 44 days old eggs. All the eggs, less 5 eggs which were analyzed the same day, have been arranged in the casing with the round part directed upwards in order to consolidate the air room in this area. During the whole period of the experiment the rest of 20 eggs has been kept in a closed space, without air streams, with an atmosphere humidity lower than 85% and a temperature of 20 ± 2 °C situation in which every 10 days other 5 eggs have been sunk in turn in each solution observing their behaviour. The other tries have been done at an interval of 10 days, each time with other 5 eggs with a previously established age.

2. Appreciating the freshness estate of the eggs through the determination of the white's and yolk's refraction index is a simple method which contributes to the food safety because during the storage period there is an osmotic exchange of substance from the white towards the yolk which

rises proportionally with the egg's age, influencing the value of the refraction index of the two components. The yolk's refraction index decreases in comparison with the initial value of the very fresh egg and the index of the white increases

RESULTS AND DISCUSSIONS

After the laboratory analyses performed with the aim to evaluate the nutritional quality of the eggs used in human alimentation and to emphasize the risk of getting sick if consuming eggs we have reached the following results presented below. The research related to the form of the egg, to its morphological structure and its chemical structure were necessary because these features reflect the modifications that are installed during the aging and alteration of the egg as well as other estates which can generate diseases if consuming inappropriate kind of eggs. The determination of the eggs' age through measuring their density has led to the following results:

- All the 5 eggs aged 4 days have totally sunk in all the 5 solutions in a horizontal position and they came into contact with the bottom of the container fact which proves that their density is higher than 1,074, this being the minimum density of a very fresh egg.
- The 14 days old eggs have also sunk in the 5 solutions but in solution A (density 1,074) they did not have a horizontal position but a vertical or oblique one. Only the top of the egg had contact with the bottom of the container, thus their density is situated in the interval 1,074 – 1,054.
- The 24 days old eggs behaved differently in the 5 solutions, as it follows: in solutions A and B they floated on the surface, in solution C they have totally sunk but in a vertical or in an oblique position, in solutions D and E they have totally sunk in a horizontal position.
- The 34 days old eggs floated in A,B,C and D solutions and in solution E they sank in an oblique or in a vertical position.
- The 44 days old eggs floated in all the 5 solutions so their density was lower than 1,021.

These results of our investigations complete the information already existent in this domain.

CONCLUSIONS

In the hierarchy of food toxic infections, the risk of getting sick if consuming eggs contaminated with salmonella is situated on the first place. Eggs are considered as being potentially contaminated with salmonellas. That is why, their handling, storage, industrial processing and cooking in order to be consumed must respect the established rules so as to prevent any risks.

Food toxic infections after salmonella contaminated egg consumption presents the highest risk of disease in what the human being is concerned. The egg contamination might be intra vital but especially extra vital. In what they are concerned, contaminated eggs are a source of contamination for other food they come in direct contact with, especially with the directly consumable food (which is not thermically processed). Once the salmonella reaches the human body's intestine/bowels at the same time with the contaminated food it starts multiplying actively and in a relatively short period of time the infectious type food toxic infection bursts out. The risk of getting sick if consuming contaminated eggs is practically excluded because the organoleptic modifications are so high that it is least probable that someone could consume the eggs in such an estate. The highest risk refers to the pathogen germs, especially to Salmonella, because their presence is not accompanied by modifications that are perceptible with the help of the human senses .

The final conclusion should not be forgotten. As in the case of food toxic infection prevention in case of egg consumption and as in the case of preventing the avidin induced biotin deficiency disorder it is a must that the egg and egg products be consumed only after it has undergone an efficient thermic treatment.

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