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THE SHELL QUALITY OF HEN EGGS-CHICKEN OF CROSS «LOMANN BROWN», DEPENDING ON THE CONDITIONS OF DETENTION

The Indexes of shell quality of food eggs of chickens of cross-country race of «Loman brown», that was retained in the conditions of industrial and domestic economy. The got indexes of durability, thickness and resilient of shell deformation of the investigated eggs are the criteria of quality.

Egg is one of the most versatile foods of person who degrees are in degrees constant consumption. It is the indispensable element of many people on the planet [1].

Benign chicken egg degrees are valuable dietary product only if it is received from healthy birds show no signs of damage. Eggs degrees, most often, deteriorate in the case of contamination of microflora. These eggs are potential source degrees of infectious diseases in poultry and food Toxics degrees and related disease in humans [4]. Signs of quality of the eggs of genetically degrees conditioned and are formed as a result of the interaction of the genotype and the environment. The eggs quality is estimated for the complex characteristics. The main of these characteristics: mass, eggs shape, density, ratio degrees mass of the constituent parts of the egg, height of albumen and yolk, thickness and strength of the degrees of the shell. The eggs quality is determined using of the following techniques: external degrees inspection, weighing and measuring, the x-raying on the egg-tester degrees and opening [5].

Pay attention during degrees external eggs is reviewed of the shape and condition of the shell. The eggs form is characterized by degrees ratio of small and large diameter, or index – attitude degrees small diameter up to large, expressed in degrees per cent.

The shell of the eggs must degrees to be clean and smooth, without cracks, growths or depressions. In order to identify possible degrees defects eggs that are difficult or impossible to notice the examination, conduct their degrees egg test. At the x-raying of eggs can be detected smallest degree cracks in the shell (notch), which are observed in the form of thin degrees bands of light.

From the egg-shell quality depends the quality of eggs, retention, and preservation during transportation. Research has shown that the most broken eggs are from 11 to 14-month egg production [3].

The egg quality shell depends primarily from mineral and vitamin nutrition of birds and in a lack of poultry necessary macro-, microelements and vitamins. It is decreasing faster than decreases egg laying chickens.

The aim of research – to undertake a comparative assessment of the quality of the shell hen eggs from hens kept in the personal peasant (farm) household and industrial.

MATERIAL AND METHODS

Research conducted in scientific laboratories of veterinary-sanitary examination at the Department of veterinary-sanitary the Institute of veterinary medicine and quality animal product safety NULES of Ukraine, in teaching and research laboratory resistance of materials of the Department of materials resistance and building NULES of Ukraine. Material for the study were dietary eggs even-aged females (10-in the month of oviposition) cross «Lomann brown», held in the farmlands and industrial the shell hen eggs from hens kept in the personal peasant (farm) household and industrial. Shell thickness measure of the micrometer in three points eggs: the average (Equatorial) part and acute ends with an accuracy of 0,01 mm thickness Measurement shell was carried out after removal undersell. On each particle shell eggs was carried out not less than three dimensions. Strength and deformation shell was determined by measuring the devastating loading and elastic deformation eggs on testing machines: FM – 1000 and FM – 500. The data are processed biometrical.

RESULTS AND THEIR DISCUSSION

As a result of the conducted researches certain differences are set on the probed indexes depending on the terms of maintenance of laying chickens-hens. Got information is resulted in a table. Yes, durability of shell of chicken eggs, got from the personal peasant economy was 3,45±0,01, that on 0,23 kGs more than (at P<0,001) eggs of industrial production.

The elastic deformation of the eggshells of private farms compared with eggs industrial production (26,75±1,12 and 28,60±1,08 respectively). This suggests that the hen's eggs selected from farming, stronger eggs industrial production and less added various kinds of deformations.

Indicators at the time of the destruction shell recorded graphically on your computer (Fig. 1, 2).

Thus, the obtained data testify that the shell of the eggs from hens kept in the

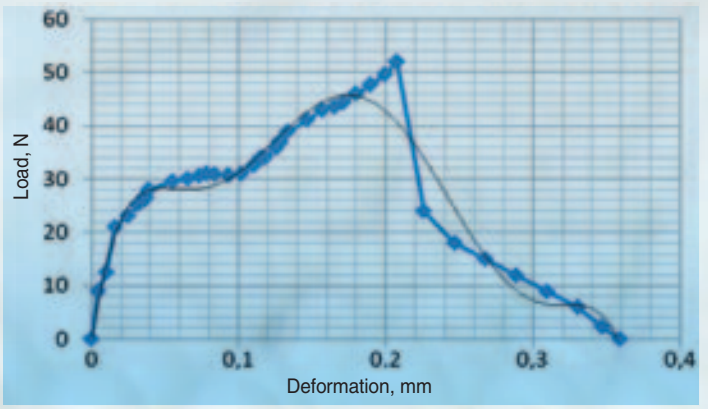

Fig. 1. Chart medium destructive load hen eggs-chicken farms

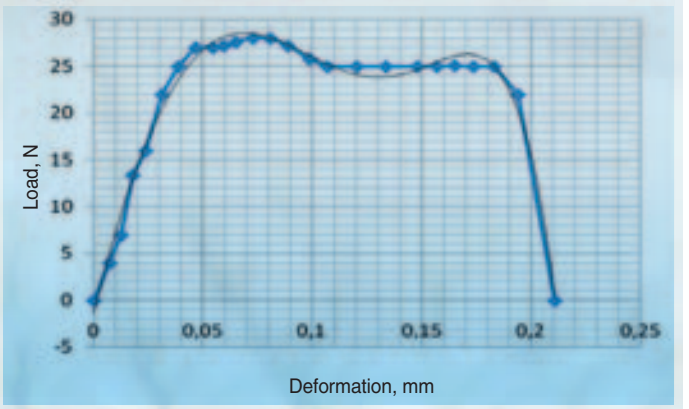

Fig. 2. The chart of medium destroying load of hen eggs industrial production

Table – **Quality indicators of shell eggs, (M±m, n=10)**

Index	Chicken eggs industrial production	Chicken eggs from personal farm
Strength shell, kGs	3,22±0,04	3,45±0,01*
The elastic deformation of the shell, mkm	28,60±1,08	26,75±1,12
Shell's thickness, ml	0,32±0,01	0,33±0,01

* P<0,001

farmlands is the best quality. The strength of the shell depends on bird feeding, primarily from mineral and vitamin nutrition. Therefore, important is the normalization of calcium, phosphorus and vitamin D_3. Vitamin D_3 is essential for efficient calcium absorption.

The lack of receipt of vitamin D_3 with food increases the number of laying hens eggs with thin shells, eggs appear with deformed shells and without it. Mixed fodder components are usually low in vitamin D_3, so in the industrial conditions of deficiency of this vitamin compensate for the introduction of fodder synthetic drugs. However, in the body of the bird vitamin D_3 is produced from provitamin under the influence of natural sunlight or as a result of UV irradiation. In the farmlands of chickens kept using the place of walk, but because in their body vitamin D_3 in sufficient quantities formed under the influence of sunlight, which positively affected the quality of egg shells, and mineral metabolism whole.

Therefore the state of the mineral exchange in an organism of hens can be estimated in terms of quality of egg shells.

CONCLUSIONS

1. When studying the quality of shell eggs-chicken cross «Lomann brown» there were some differences depending on the conditions of detention of birds. It is established that the strength of the shell eggs derived from chicken from subsistence farming is 3,45±0,01 kg, that on 0,23 kg more compared with the figure of eggs from hens, held in conditions of the industrial enterprise. The elastic deformation of the eggshells of private farms compared with eggs industrial production (26,75±1,12 and 28,60±1,08 respectively).

2. The obtained indices of the strength and elastic deformation of a shell of hen eggs may be the criteria for assessing their quality during the veterinary-sanitary examination.

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Якість шкаралупи курячих харчових яєць курей кросу «Ломанн коричневий» залежно від умов утримання. *С.А. Ткачук*

У роботі наведено показники якості шкаралупи харчових яєць курей кросу «Ломанн коричневий», яких утримували в умовах промислового та присадибного господарства. Одержані показники міцності, товщини та пружної деформації шкаралупи досліджуваних яєць є критеріями їх якості.

Качество скорлупы куриных пищевых яиц курей кросса «Ломанн коричневый» в зависимости от условий содержания. *С.А. Ткачук*

В работе приведены показатели качества скорлупы пищевых яиц кур кросса «Ломанн коричневый», которых содержали в условиях промышленного и приусадебного хозяйства. Полученные показатели прочности, толщины и упругой деформации скорлупы исследуемых яиц являются критериями их качества. ○

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