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## ***Assessment of morphological parameters hatching eggs quail breeds tuxedo depending on age***

***The article presents a comparative assessment of morphological parameters hatching eggs of quail breed Tuxedo at the beginning and at the peak of the productive period. Found a reliable increase in weight of eggs, absolute and relative weight of yolk and shell, reducing the index form of eggs, yolk and protein, the relative weight of the protein and the ratio of "protein: yolk" with age of quails.***

*Quail, morphological parameters, hatching eggs*

Conditions of embryonic development greatly influence the level of implementation of the genetic potential productivity of poultry [5].

The quality of the eggs is one of preconditions that provide high effectiveness of incubation. [2]. A prerequisite for successful incubation of eggs is the evaluation for a number of morphological characters. To improve the derivability eggs and improve the quality of of young stock must pay much attention to optimization programs of incubation. However, this can not be done without taking into account the biological characteristics of hatching eggs associated with the breed, age and cross poultry [3,6,1].

Incubation is particularly important for meat poultry. From meat species of poultry almost all eggs used for incubation to produce a large number of young stock [4]. However, the quality diurnal young stock and their further productivity depends not only on the conditions under which took place incubation of eggs, but also on its biological completeness [3]. The issue of assessing the quality of hatching eggs of quails described in the literature not fully, so it is topical.

**The purpose** of our work was to evaluate the quality of hatching eggs quail breed Tuxedo at the beginning and at the peak of the productive period on morphological parameters.

**Material and methods of research.** Research was conducted at the laboratory of poultry of National University of Life and Environmental Sciences of Ukraine. The objects of the research were hatching eggs of quail breed Tuxedo. For a comparative analysis of morphological parameters were selected 50 quail eggs breed Tuxedo at the beginning (age 56-60 days) and at the peak (age 148-150 days) of productive period. During the researches was determined the absolute weight and form index of eggs, an index of protein and yolk, absolute and relative weight of the protein, yolk and shell, relation "white:yolk".

**Results.** The analysis of morpho-

logical parameters of hatching eggs quail breed Tuxedo of all ages is given in *Table*.

As a result of determining the mass of eggs found probable increase of this feature with birds' age. The difference was 0,93 g, or 7,4% ( $P<0,001$ ). It should be noted that the form of eggs at the peak of productive period is changed and become elongated. Form index of quail eggs at the age of 148-152 days has decreased by 4,21% ( $P<0,001$ ) and was 75,1% versus 78,4% at age 56-60 days. With age of birds has increased yolk weight on 0,64 g or 16,8% ( $P<0,001$ ) and relative weight of yolk by 2,7 percent points ( $P<0,001$ ) and constituted 33,1% vs. 30,4% at the beginning of the productive period. At the same time it has a



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## Morphological parameters of hatching eggs quail breed Tuxedo

Indicator	Age 56-60 days (n=50)		Age 148-150 days (n=50)	
	$\bar{x} \pm Sx$	Cv, %	$\bar{x} \pm Sx$	Cv, %
Weight of egg, g	12,6±0,20	11,13	13,5±0,16***	8,30
Form index, %	78,4±0,49	4,39	75,1±0,41***	3,90
Absolute weight of protein, g	7,1±0,13	12,56	7,2±0,11	11,24
Protein index	11,2±0,23	16,14	8,5±0,24***	19,24
Hau units	86,1±0,42	3,48	85,1±0,60	5,02
Absolute weight of yolk, g	3,8±0,07	13,40	4,5±0,06***	8,91
Yolk index	48,5±0,60	8,75	44,4±0,36***	5,77
Wight of shell, g	1,6±0,02	10,46	1,9±0,02***	8,35
Relative weight of protein, %	56,6±0,27	3,43	52,8±0,37***	4,95
Relative weight of yolk, %	30,4±0,23	5,45	33,1±0,28***	5,92
Relative weight of shell, %	13,0±0,21	11,64	14,1±0,18***	9,17
Relations "protein:yolk"	1,9±0,02	7,63	1,6±0,02***	10,11

Note: \* –  $P < 0,05$ ; \*\* –  $P < 0,01$ ; \*\*\* –  $P < 0,001$  (compared with indicators at the age 56-60 days).

negative impact on the ratio of protein to the yolk (14,3% at  $P < 0,001$ ). At the peak productive period, the figure was 1.6 versus 1.9 at the beginning of egg laying. Indicators of large and small diameters yolk with age of birds authentically increased by 5,14% and 5,08% ( $P < 0,001$ ) respectively, however, the height of the yolk has decreased by 3,72% ( $P < 0,01$ ) that led to decline of yolk index on 8,4% ( $P < 0,001$ ). The relative weight of protein in quail eggs has decreased with age and was 52,8% versus 56,6% at age 56-60 days. The difference was 6,7%

( $P < 0,001$ ). With age, was observed increase of the height of large and small diameter of protein by 19,7% and 16,1% ( $P < 0,001$ ) respectively, however, the height of the protein has not changed, that led to decline of protein index on 15,9% ( $P < 0,001$ ). It should be noted that at the peak of productivity significantly increased absolute and relative weight of the shell, the difference was 0,3 g or 16,6% ( $P < 0,001$ ) and 8,18% respectively.

### Conclusions

1. The results of the study of mor-

phological parameters of hatching eggs of quail breed Tuxedo found authentically increase of egg weight, absolute and relative yolk and shell with age of birds.

2. At the peak of productive period was observed authentically decline of the form index of eggs, index of protein and yolk, the relative weight of the protein, and the ratio of "protein:yolk".

3. Perspectives for further research consist to examine the reproductive qualities of quails breed Tuxedo.

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