

## RESEARCH REGARDING THE QUALITY OF HATCHING EGGS FROM THE KING BREED PIGEONS IN THE AREA OF BIHOR COUNTY

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### Abstract

*The paper includes partial results on the identification and characterization of birds from the order Columbiformes, Columba liviademesticus species from Bihor county. The researches were conducted in five private breeders both on Oradea and Bihor county territory, being analyzed a total of 100 specimens of the King race, respectively 50 males and 50 females. Parameters analyzed refer to the quality of hatching eggs namely; egg weight, mineral shell thickness, format index and the Haugh index.*

**Key Words:** King breed, dynamics of the eggs weight, dynamics of shell thickness (mm), dynamics of shape index values of the Haugh index (U.H.), dynamics of eggshell thickness.

### INTRODUCTION

In our country, the pigeon was performed either as an individual occupation or within poultry breeding associations. The vast majority of pigeon fanciers from Bihor county have in their farms effective more or less abundant (no head. individuals breeding adult) of flying and game specialized breeds but also ornamental.

In this paper was chosen King race because is quite weak represented in the Northwest of the country and morpho-productive performances are not as well-known as at the other races.

### MATERIALS AND METHODS

The researches were performed on populations of pigeons, King breed (*Columba liviademesticus*) in private farms in Oradea and on Bihor county. Farms were named C1, C2, C3, C4 and C5 as follows: in C1 loft, 20 heads (10 males and 10 females), C2 loft, 26 heads (13 males and 13 females), loft C3, 18 heads (9 males and 9 females), loft C4, 24 heads (12 males and 12 females) and loft C5, 12 heads (6 males and 6 females).

From the lofts studied were selected reproducers who presented of grayish and white varieties.

In the experiments conducted, was used biological material represented by birds of both sexes at different ages (hatching juvenile period, reaching sexual maturity, during active reproduction). Also as

biological materials were used and hatching eggs of the species studied, at different times of egg laying cycle (onset, peak, plateau, end).

There were used the following materials and working devices: digital technical and analytical balances, calipers, Petri plates and flat plates of glass, incubators, small (50-200 eggs / series), ooscope, portable camera, computer equipped spreadsheet software, depending on the experimental method addressed.

For a better appreciation of the quality of hatching eggs were calculated two synthetic indicators that give relevant information about the morphology and the internal reproduction eggs quality. The two indices are: egg format index and Haugh index.

Thus, the results obtained were compared with reference values from the literature (Sauveur B.,1988; Usturoi M.G., 1999; Vacaru-Opriş I. și col., 2002).

All experimental data obtained were centralized and statistically processed.

## RESULTS AND DISCUSSION

The weight of eggs produced has increased slightly, as the birds passed successively through the 5 egg laying moments. Thus, from an average of  $18.0 \pm 1.4$  g/egg, at the first egg laying has been reached an average of  $18.9 \pm 2.1$  g/egg at the end of the reproduction season (Figure 1).

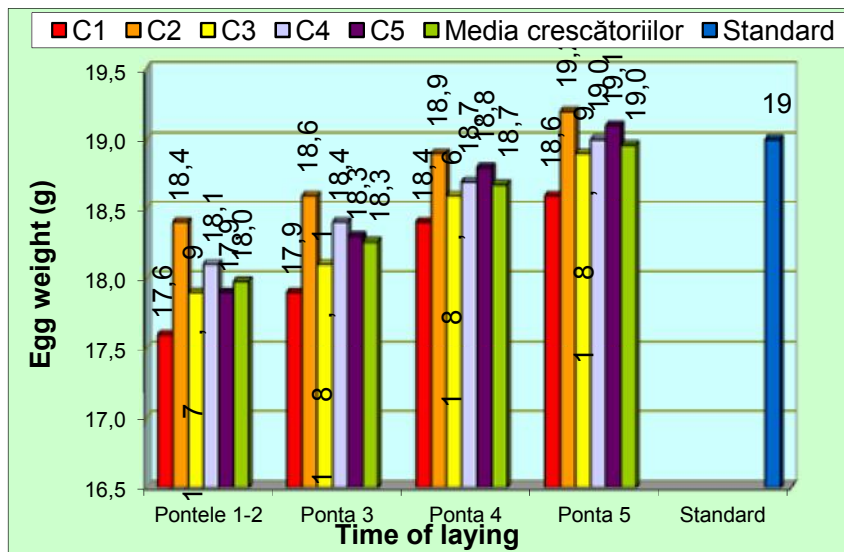


Fig. 1. – Eggs weight dynamics during the laying period, in the King breed females

The livestock homogeneity was average to poor ( $v = 9.7$  to  $10.5\%$ ). Eggs with the highest weight were submitted by birds from C1 population, who showed, also the highest degree of precocity.

Mineral shell thickness ranged between  $0.375 \pm 0.012$  mm at 5<sup>th</sup> lay -  $0.415 \pm 0.017$  mm at the first two periods of lay.

Variability for this trait had values between  $10.1$  to  $11.3\%$ , which indicates a medium to poor homogeneity of the studied population (Fig. 2).

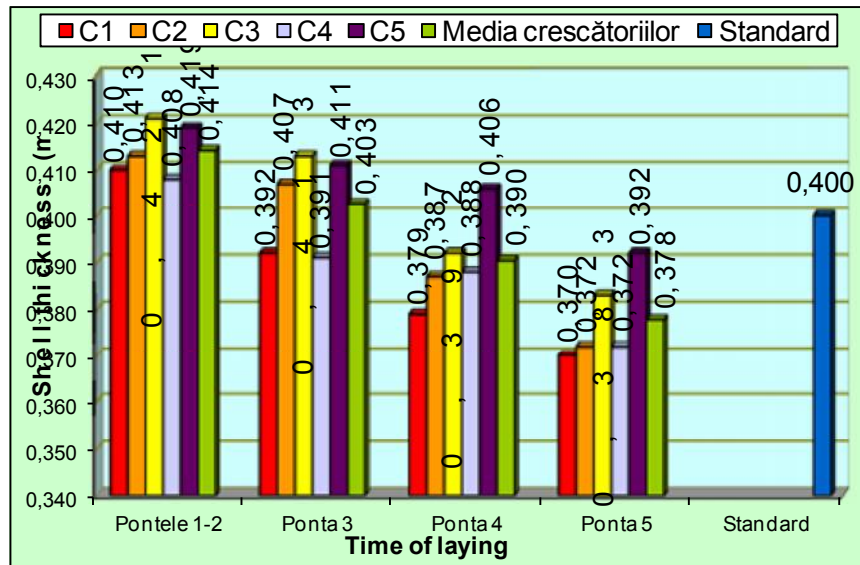


Fig. 2 – Shell thickness dynamics during the laying period, in the King breed females

Egg form index had values between  $74.6 \pm 0.9\%$  (lays 1-2) -  $75.7 \pm 1.1\%$  (lay 5), thereby falling into the quality recommendations for hatching eggs at the studied species (Bessarabov, 1985, cit. the Vacaru-Opriș, 2002). The data are presented in Figure 3.

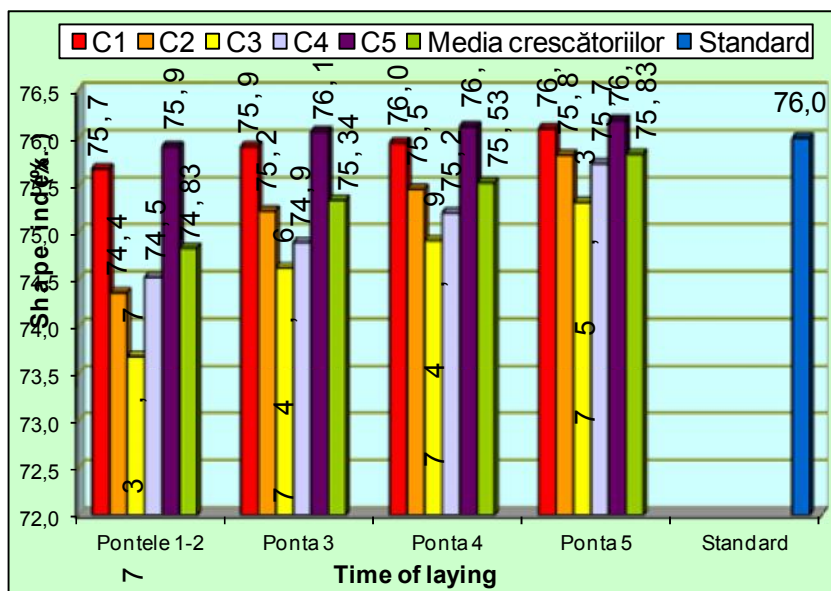


Fig. 3. - Modification of the eggs shape index, in King females pigeons

Haugh index recorded maximum value to the last lay ( $78.7 \pm 1.2$  HU) and the minimum at the beginning of the breeding season ( $77.0 \pm 1.2$  HU). The determined values were located around the reference value for this parameter (UH 75-80).

Best value for this synthetic indicator of egg quality was observed within the population of loft 2 (Fig. 4).

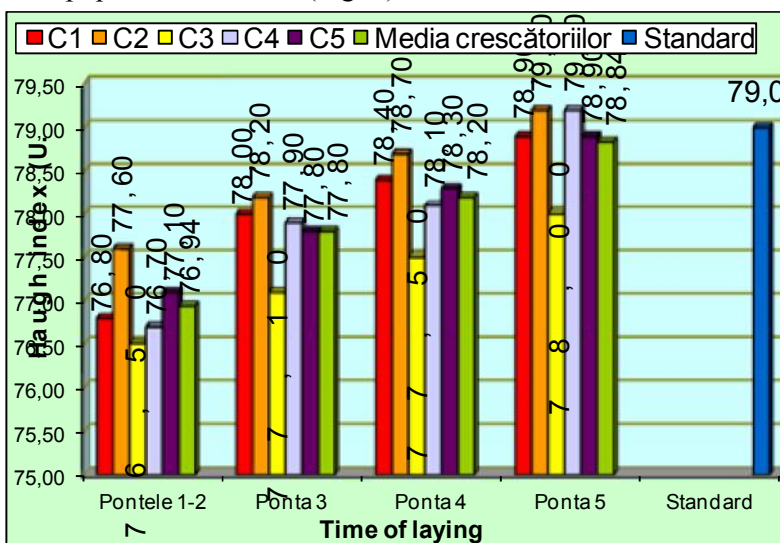


Fig. 4. – Assessment of the Haugh index, in King females pigeons

## CONCLUSIONS

- Pigeons of the race King, of both sexes have achieved average performance situated below the theoretical potential of the population of origin.
- Due to the seasonal specific of reproduction at pigeons, the average number of eggs obtained / adult pigeon was 6.5 in the period from March to July.
- In future it desired to improve the following: the number of lays per reproduction season, weight gain during 1 day - 4 weeks, characters for meat production (width of chest and hindquarters).

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