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UTICAJ STAROSTI KOKOŠI NOSILJA NA KVALITET ORGANSKIH JAJA

Simeon Rakonjac¹, Snežana Bogosavljević-Bošković¹, Vladimir Dosković¹,
Miloš Lukić², Zdenka Škrbić², Veselin Petričević², Milun D. Petrović¹

¹Univerzitet u Kragujevcu, Agronomski fakultet u Čačku, Cara Dušana 34, Čačak, Srbija

²Institut za stočarstvo Beograd-Zemun, Autoput 16, Poštanski fah 23, 11 080 Beograd-Zemun, Srbija

simeonr@kg.ac.rs

Sažetak

Organsko živinarstvo je jedna od grana organskog stočarstva sa najbržim trendom rasta. Brojna naučna istraživanja su dokazala odličan kvalitet organskih jaja, međutim, on nije konstantan i pod većim je uticajem faktora spoljašnje sredine nego što je to slučaj kod konvencionalno proizvedenih jaja. Osim genotipa, najveći uticaj na kvalitet organskih jaja imaju godišnje doba, kvalitet ispusta kao i faza proizvodnog ciklusa gajenih nosilja. Iz tog razloga, cilj ovog rada je bio da se ispita uticaj starosti i faze proizvodnog ciklusa na kvalitet organskih jaja. Ispitivana su jaja rase dvojnih proizvodnih karakteristika - New Hampshire. U 24, 40. i 56. nedelji starosti kokoši nosilja uzeto je po 15 jaja da bi se utvrdile vrednosti odabranih parametara kvaliteta jaja (masa jaja Hogove jedinice, boja žumanca i sila loma ljuske) i osnovni hemijski sastav jaja (sadržaj suve materije, pepela, proteina i masti).

Masa jaja se povećavala sa starošću nosilja - 51,39 g u 24. nedelji, 63,85 g u 40. nedelji i 66,93 g u 56. nedelji ($p \leq 0,05$). Sa druge strane, broj Hogovih jedinica se kontinuirano smanjivao sa starenjem nosilja, od 94,53 u 24. nedelji, preko 84,27 u 40, do 78,87 u 56. nedelji ($p \leq 0,05$). Najintenzivnije obojeno žumance su imale kokoši stare 48 nedelja (12,07 Roša; $p \leq 0,05$), dok nije bilo značajne razlike u ovoj osobini između 24 (11,20 Roša) i 56 nedelja starih jedinki (11,07 Roša; $p \geq 0,05$). Jedina posmatrana osobina koja nije bila pod značajnim uticajem starosti je sila loma ljuske (36,81 N u 24, 38,44 N u 40. i 36,23 N u 56. nedelji; $p \geq 0,05$).

Sadržaj suve materije i masti se značajno i kontinuirano povećavao sa starenjem nosilja (22,29% suve materije i 7,69% masti u 24. nedelji; 24,10% suve materije i 9,61% masti u 40. nedelji i 25,06% suve materije i 10,37% masti u 56. nedelji; $p \leq 0,05$). Jaja 56-nedeljnih nosilja su imala i značajno veći sadržaj pepela (0,93%; $p \leq 0,05$) u odnosu na 40 (0,83%) i 24 nedelje stare kokoši (0,86%). Jedino se sadržaj proteina smanjivao sa starenjem kokoši, pa su jaja 24-nedeljnih jedinki imala značajno veći sadržaj ove frakcije (12,94%; $p \leq 0,05$) u poređenju sa jajima kokoši starih 40 (12,14%) i 56 nedelja (12,41%), koja se nisu međusobno značajno razlikovala ($p \geq 0,05$).

Ključne riječi: organska jaja, kvalitet jaja, hemijski sastav, starost kokoši.

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EFFECT OF THE LAYING HEN'S AGE ON THE QUALITY OF ORGANIC EGGS

Simeon Rakonjac¹, Snežana Bogosavljević-Bošković¹, Vladimir Dosković¹,
Miloš Lukić², Zdenka Škrbić², Veselin Petričević², Milun D. Petrović¹

¹University of Kragujevac, Faculty of Agronomy in Čačak, Cara Dušana 34, Čačak, Serbia

²Institute for Animal Husbandry Belgrade-Zemun, Autoput 16, Poštanski fah 23, 11 080 Belgrade-Zemun, Serbia

simeonr@kg.ac.rs

Abstract

Organic poultry production is one of the sectors of organic livestock production with the fastest growing rate. Numerous scientific studies have established the superior quality of organic eggs, however, it is not constant and is more impacted by environmental factors than commercially produced eggs. In addition to genotype, the greatest effect on the quality of organic eggs is the season, the quality of the discharge, and the stage of the production cycle of reared layers.

For this reason, this paper aimed to examine the effect of age and stage of the production cycle on the quality of organic eggs. The eggs of the New Hampshire dual-purpose breed were examined. In the 24th, 40th and 56th weeks of the laying hen's age, 15 eggs each were collected to determine the selected egg quality parameters (egg weight, Haugh units, yolk colour and shell breaking strength) and the basic chemical composition of eggs (content of dry matter, minerals, protein and lipids).

The egg weight increased with the hen's age - 51.39 g in the 24th week, 63.85 g in the 40th week and 66.93 g in the 56th week ($p \leq 0.05$). On the other hand, the number of Haugh units decreased continuously with the ageing of the laying hens, from 94.53 in the 24th week, over 84.27 in the 40th, to 78.87 in the 56th week ($p \leq 0.05$). The hens aged 48 weeks (12.07 Roshe point; $p \leq 0.05$) had the most intensively coloured yolk, while there was no significant difference in this trait between 24 (11.20 Roshe) and 56-week-old hens (11.07 Roshe; $p \geq 0.05$). The shell breaking strength was the only investigated parameter that was not significantly affected by the hen's age (36.81 N at 24, 38.44 N at 40, and 36.23 N at 56 weeks; $p \geq 0.05$).

The content of dry matter and lipids increased significantly and continuously with the ageing of hens (22.29% dry matter and 7.69% lipids in the 24th week; 24.10% dry matter and 9.61% lipids in the 40th week and 25.06% dry matter and 10.37% lipids in the 56th week; $p \leq 0.05$). Eggs of 56-week-old laying hens had a significantly higher mineral content (0.93%; $p \leq 0.05$) compared to 40-week-old (0.83%) and 24-week-old hens (0.86%). Only the protein content decreased with the hens ageing, so the eggs of 24-week-old layers had a significantly higher content of this fraction (12.94%; $p \leq 0.05$) compared to the eggs of hens aged 40 (12.14%) and 56 weeks (12.41%), which did not differ significantly from each other ($p \geq 0.05$).

Keywords: organic eggs, egg quality, chemical composition, hen's age.

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