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## 茶多酚和酵母硒及其互作对绿壳蛋鸡生产性能、蛋品质及蛋黄中胆固醇和硒含量的影响

何柳青<sup>1</sup>, 曲湘勇<sup>1</sup>, 魏艳红<sup>1</sup>, 汪加明<sup>1</sup>, 常春茹<sup>1</sup>, 肖建新<sup>2</sup>

1. 湖南农业大学动物科学技术学院, 长沙 410128;

2. 湖南益阳志德特禽养殖合作社, 益阳 413000

## Effects of Tea Polyphenols and Selenium Yeast and Their Interaction on Performance, Egg Quality and Contents of Cholesterol and Selenium in Yolk of Green Shell Hens

HE Liuqing<sup>1</sup>, QU Xiangyong<sup>1</sup>, WEI Yanhong<sup>1</sup>, WANG Jiaming<sup>1</sup>, CHANG Chunru<sup>1</sup>, XIAO Jianxin<sup>2</sup>

1. College of Animal Science and Technology, Hunan Agricultural University, Changsha 410128, China;

2. Hunan Yiyang Zhide Special Poultry Farming Cooperatives, Yiyang 413000, China

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**摘要** 本研究旨在探讨茶多酚和酵母硒及其互作对绿壳蛋鸡生产性能、蛋品质及蛋黄中胆固醇和硒含量的影响。试验选用810只44周龄健康绿壳蛋鸡,随机分成9个组,每组5个重复,每个重复18只鸡。采用2因素3水平试验设计,在基础饲料中分别添加不同剂量的茶多酚和酵母硒构成试验饲料,茶多酚设0、200、400mg/kg 3个添加水平,酵母硒(按硒计)设0、0.25、0.50mg/kg 3个添加水平。预试期7 d,正试期28d。结果表明:1)饲料中添加茶多酚和酵母硒均有提高平均蛋重的趋势( $P>0.05$ ),添加200、400 mg/kg茶多酚能显著提高产蛋率且显著降低料蛋比( $P<0.05$ );2)饲料中添加茶多酚和酵母硒对蛋黄指数、蛋黄色泽和哈氏单位均有提高的趋势( $P>0.05$ ),添加0.50 mg/kg酵母硒能显著提高蛋形指数( $P<0.05$ ),同时使蛋壳厚度显著下降( $P<0.05$ ),添加200、400mg/kg茶多酚能显著减缓鸡蛋在贮藏过程中哈氏单位的下降( $P<0.01$ );3)饲料中添加200、400mg/kg茶多酚均能显著降低蛋黄胆固醇含量( $P<0.01$ ),添加0.25、0.50mg/kg酵母硒均能显著提高蛋黄硒含量( $P<0.01$ );4)茶多酚和酵母硒的互作对生产性能、蛋品质及蛋黄中胆固醇和硒含量均无显著影响( $P>0.05$ )。由此可见,在基础饲料中采用400mg/kg茶多酚和0.25 mg/kg酵母硒的添加组合对蛋鸡生产性能和蛋品质不会产生拮抗作用,并可有效生产“富硒+低胆固醇”的绿壳鸡蛋。

**关键词:** 蛋鸡 茶多酚 胆固醇 硒 互作效应

**Abstract:** This study was to explore the effects of tea polyphenols and selenium yeast and their interaction on performance, egg quality and contents of cholesterol and selenium in yolk of green shell hens. A total of 810 healthy 44-week-old green shell laying hens were randomly divided into 9 groups with 5 replicates per group and 18 hens per replicate. A two factors and three levels experimental design was used, the experimental diets were supplemented with tea polyphenols and selenium yeast at different doses in the basal diet, the tea polyphenols was set at three supplemental levels of 0, 200 and 400 mg/kg, and selenium yeas (metered by Se) was set at three supplemental levels of 0, 0.25 and 0.50 mg/kg, respectively. The adjustment period lasted for 7 days, and the experimental period lasted for 28 days. The results showed as follows: 1) dietary tea polyphenols and selenium yeast had an increasing trend in average egg weight ( $P>0.05$ ), and adding 200 and 400 mg/kg tea polyphenols significantly improved laying rate and reduced feed/egg ratio ( $P<0.05$ ). 2) Dietary tea polyphenols and selenium yeast had an increasing trend in yolk index, yolk color and Haugh unit ( $P>0.05$ ), and adding 0.50 mg/kg selenium yeast significantly improved the egg index ( $P<0.05$ ), while eggshell thickness was significantly decreased ( $P<0.05$ ), and adding 200 and 400 mg/kg tea polyphenols significantly slowed down the decrease of Haugh unit during storage ( $P<0.01$ ). 3) Diets supplemented with 200 and 400 mg/kg tea polyphenols significantly reduced yolk cholesterol level ( $P<0.01$ ), and adding 0.25 and 0.50 mg/kg yeast selenium significantly improved yolk selenium content ( $P<0.01$ ). 4) The of interaction between tea polyphenols and selenium yeast had no significant effects on performance, egg quality, yolk cholesterol and selenium content ( $P>0.05$ ). It is concluded that the basal diet supplemented with 400 mg/kg tea polyphenols and 0.25 mg/kg selenium yeast has antagonism effects on performance and egg quality, and allows the efficient production of selenium-rich and cholesterol-low green shell eggs.

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