

EFFECT OF SOME NATURAL ADDITIVES ON BIOPRODUCTIVE PARAMETERS AND ANTIOXIDANT NUTRIENTS OF EGGS PROVIDED BY LAYING HENS REARED UNDER HEAT STRESS CONDITIONS

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Abstract

The objective of this study was to examine the effects of dietary inclusion of yeast, parsley and inulin, as sources of natural antioxidants in poultry diets, on the enrichment of antioxidant nutrients in the egg yolk and on the susceptibility of the yolk to lipid peroxidation during storage. The experiment was conducted on 47-week-old TETRA SL LL laying hens, reared in high temperature (30°C). Experimental dietary treatments differed from control diet (C) by addition of 1% yeast, 2% parsley and 1% yeast or 2% inulin and 1% parsley. The addition of yeast and inulin in laying hens' diets significantly increased the zinc content in the yolk eggs. The use of yeast and parsley in laying hens' diets increase the total polyphenol content, vitamin E, lutein and zeaxanthin and concentrations in the egg yolks. In regards to the oxidative stability parameters, a significant decrease in the concentrations of primary oxidation products formed in the egg yolk of experimental groups was seen, proving an efficient inhibition effect of the phytoadditives on peroxy radical formation. A significant correlation was observed between oxidation products and total polyphenol content of the egg yolks, where lutein and zeaxanthin inhibit the formation oxidation products.

Key words: Hens, heat stress, Antioxidants, polyphenols