



Oral Presentation

Flaxseed and sunflower oil affect egg production and quality in hens exposed to stress

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Abstract

In the study, effects of dietary supplementations with flaxseed oil and sunflower oil on production performance, egg quality, and the eggs' sensory attributes in laying hens exposed to high stocking density stress were investigated. A total of one hundred and forty-four 38-week-old "Atak-S" breed laying hens were used. The hens were divided into two main groups as stress group and non-stress group, which both were further divided into three subgroups: basal diet, 2% flaxseed oil diet, and 2% sunflower oil diet groups. High stocking density stress was induced with a space allowance of 357 cm² per hen. All hens were weighed initially and just before the study has been completed, and the body weight gain was calculated. Egg production per hen was daily recorded, and production performance, mean egg weight, and egg mass were estimated. Moreover, eggshell weight, thickness, strength, Haugh unit, albumen height, and egg yolk color were measured. Trained panelists evaluated egg samples collected from each subgroup regarding sensory attributes such as taste, flavor, color, and texture. Flaxseed oil decreased egg production and egg mass in the non-stress group while increasing the stress group's same parameters. Sunflower oil increased average egg weight in all hens and paled the egg yolk's yellow color in the stressed hens. Moreover, the non-stress group's eggs were more appealing in taste than those of the stress group. Flaxseed-supplemented diet enhanced the sensory attributes in the eggs of both stress and non-stress groups. Furthermore, neither of the oil supplementations generated a strange or repulsive odor in the eggs. In conclusion, dietary flaxseed oil supplementation might be recommended to improve egg production and egg sensory attributes in stress-exposed laying hens. Sunflower oil supplementation might be offered for increasing egg production and some sensory parameters in both stressed and unstressed hens.

Keywords: hens, flaxseed oil, sunflower oil, stress, egg quality

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