

Effect of Dietary Inclusion of Black Soldier Fly (*Hermetia Illucens L.*) Larvae Meal on Sensory Attributes of Broiler Chicken Meat

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The price of crude protein (CP) sources like fishmeal used in the current poultry feed industry has been hastened. Hence, it is urged to trace cost-effective, alternative CP sources under the existing economic settings. Meanwhile, the current commercial broiler production emphasizes meat quality assurance since several factors, particularly organoleptic properties, influence consumers' buying decisions. The black soldier fly (*Hermetia illucens L.*) larvae (BSFL) have been successfully incorporated into broiler diets replacing expensive CP sources, but evaluation of its sensory properties is highly limited in the studies conducted in the past. Therefore, the present study aims to evaluate the organoleptic properties of meat obtained from broiler chickens fed full-fat (FF) BSFL meal and de-fatted (DF) BSFL meal at different inclusion levels (2.5%, 5%, 7.5%, and 10%) to replace cost-demanded fishmeal. Two-hundred and sixteen 14-day-old unsexed Cobb 500 broiler chickens (BW±SD: 343±13g) were randomly assigned to 36 battery cages (04 replicates per treatment, six birds/replicate). *Pectoralis major* (breast) muscles of 35-days-old broiler meat were collected fresh and were frozen below -18°C. The deboned breast meat was cut into 10 g (2 cm³ cubes) pieces and oven cooked at 200°C until the internal core temperature reached 75°C. Cooked meat was evaluated for sensory properties by 37 untrained panellists using a pre-designed 6-point hedonic scale questionnaire. Evaluated sensory properties include tenderness, aroma, colour, juiciness, flavour and overall acceptability. The data from the sensory test was statistically analysed using the Friedman test in SPSS. The highest mean score for meat tenderness was recorded from the birds fed 7.5% BSFL FF meal and 10% BSFL DF meal incorporated diets. Meat from the birds fed 10% BSFL on an FF basis resulted in maximum juiciness. Notably, the birds fed a 5% BSFL FF meal incorporated diet performed the highest scores for all the rest of the sensory properties. Moreover, the BSFL meal, which is characterized by a peculiar flavour, can be used as an alternative fat source to the existing knowledge. The overall results envisaged that the sensory profile of meat was not affected by BSFL meal incorporation up to a 5% inclusion level into the diet, which is technically feasible, and the product is acceptable as compared to the conventional diet.

Keywords: Black soldier fly larvae, Broiler, Fishmeal, Sensory properties