

ABSTRACT

The acceptance of eco-friendly black soldier fly larvae meal (BSFLM) as sustainable alternative protein ingredient in poultry feeds continues to gain momentum worldwide. This study evaluates the impact of BSFLM in layer chick and grower diets on the growth, carcass quality and economic returns. Mean weekly weight gain and total live weight per chick and grower varied significantly. The highest final weight gain was achieved when birds were provided diet with 25.6% BSFLM. Average daily feed intake (ADFI), average daily weight gain (ADG) and overall weight gain of the chick varied significantly, except for the feed conversion ratio (FCR). For grower birds, ADFI, ADG, FCR and overall weight gain did not vary significantly across the various feeding regimes. The weight of the wings and drumsticks had a quadratic response with a maximum weight obtained at 33% inclusion of BSFLM. The weight of the internal organs were not significantly affected by dietary types. Positive cost–benefit ratio and return on investment was recorded for diet types with higher BSFLM inclusion levels (>75%). Diets with 25% and 100% BSFLM inclusion were the most suitable and cost-effective, respectively. Thus, BSFLM represents a promising alternative source of protein that could be sustainably used in the poultry industries.

Keywords:

black soldier fly; insect-based feed formulation; chicken layers; carcass and organs yield; profitability; sustainable intensification