

Fortification of circular substrate for black soldier fly with zinc and/or selenium: effect on growth performances

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Zinc (Zn) and Selenium (Se) are essential trace elements for livestock. To ensure an adequate intake is achieved, several supplementation sources have been studied. Emerging and innovative sources, such as Zn and Se-enriched insects, could be useful for their potential use in animal nutrition. The purpose of this work was to study the effects of including Zn and/or Se in the rearing substrate of black soldier fly larvae (BSFL), where a lack of information regarding growing performance effect was identified. In this study, BSFL were reared on five different substrates: a control substrate (CTR diet) of plant-ingredients (Gainesville diet); Okara and Potato Waste based substrate (OPW); OPW-Zn fortified with 150 mg/kg of Zn; OPW fortified with 0.3 mg/kg of Se; and OPW-Zn+Se fortified with 150 mg/kg of Zn + 0.3 mg/kg of Se. All experiments were carried out under dark condition, at 26 °C with 60% relative humidity and the growth performance of the resulting larvae and prepupae were observed. The mean larval weight was not influenced by treatment ($P>0.05$). In contrast, the CTR group showed significantly higher larval biomass yield at the end of the trial ($P<0.05$). The number of resulting larvae and their survival rate were not influenced by the treatment ($P>0.05$). These results suggest the possibility of use these substrates. However, more studies are necessary to determine the effects on reproductive performance of BSF adults as well as their proximate composition. Funded by Agritech National Research Center, spoke 8